

Self-Evaluation of the Transforming Investment in Africa's Rainfed Agriculture (TIARA) initiative in the Zambezi Watercourse (2020-2025)

Final report



Picture from the last field visit in Zambia in November 2025 (photo by Charles Chenda, Photographer)

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April 2026

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List of Acronyms

ACORN – Agroforestry CRUs for the Organic Restoration of Nature
ARC – Africa Regional Centre of the Stockholm International Water Institute
CA – Conservation Agriculture
COMACO – Community Markets for Conservation
CR – Conventional Ridge
CRIDF – Climate Resilient Infrastructure Development Facility
CSB – Community Seed Bank
CTDT – Community Technology and Development Trust
DAC – Development Assistance Committee
DBF – Deep Bed Farming
DRR – Disaster Risk Reduction
FACHIG – Farmers' Association of Community Self-Help Investment Groups
FANRPAN – Food, Agriculture and Natural Resources Policy Analysis Network
FCDO – Foreign, Commonwealth & Development Office
FFS – Farmer Field School
FGD – Focus Group Discussion
GAEZ v4 – Global Agro-Ecological Zoning version 4
GEF – Global Environment Facility
GIF – Global Innovation Fund
ICRAF – International Centre for Research on Agroforestry
ICWC – International Centre for Water Cooperation
IFVSW-NbS – Investment framework for Verifying Soil-Water Nature-based Solution
IWMI – International Water Management Institute
KPIs – Key Performance Indicators
LBF – Leopold Bachmann Foundation
LDN – Land Degradation Neutrality
LPJmL – Lund Potsdam Jena managed Land
M&E – Monitoring and Evaluation
MoU – Memorandum of Understanding
MTE – Mid-Term Evaluation
NbS – Nature-based Solutions
NGOs – Non-Governmental Organisations
OECD – Organisation for Economic Co-operation and Development
PES – Payment for Ecosystem Services
PPP – Public-Private Partnership
ROI – Return on Investment
SDG – Sustainable Development Goals
SE – Self-Evaluation
Sida – The Swedish International Development Cooperation Agency
SIWI – Stockholm International Water Institute
SLM – Sustainable Land Management
SOC – Soil Organic Carbon
SWC – Soil and Water Conservation
TBL – Triple Bottom Line
TIARA – Transforming Investment in Africa's Rainfed Agriculture

ToC – Theory of Change

ToR – Terms of Reference

UN – United Nations

WWW – World Water Week

ZAMCOM – Zambezi Watercourse Commission

EXECUTIVE SUMMARY

The Enhancing Rainfed Agricultural Systems in the Zambezi Watercourse project (July 2020–March 2026) aims to scale up awareness and investment in rainfed agriculture. Funded by the Leopold Bachmann Foundation (LBF) with EUR 1.2 million over six years, and co-funding from the Swedish International Development Cooperation Agency (Sida) (SEK 2 million), the project was implemented by the Stockholm International Water Institute (SIWI) in collaboration with the Zambezi Watercourse Commission (ZAMCOM), and the International Centre for Research on Agroforestry (ICRAF). The project was designed to generate three outcomes:

- 1) Public and private commitments to enhanced rainfed agriculture;
- 2) Business case for enhanced rainfed agriculture; and
- 3) A cadre of multidisciplinary champions that implement enhanced rainfed agriculture.

The project's external Mid-Term Evaluation (MTE) was finalised in April 2024 and covered the period 2020-2023. It undertook a very thorough review of project documents and reports and conducted online interviews with key informants from partners in the ZAMCOM region, including local Non-Governmental Organisations (NGOs). However, it did not undertake any assessment of field impacts nor collect evidence from local land users. The Final Self-Evaluation (SE) of the project is thus designed to complement the MTE and to assess the final outputs and results, as well as evidence of project impacts from the field. The SE followed the Organisation for Economic Co-operation and Development (OECD)/Development Assistance Committee (DAC) Principles and Criteria for the Evaluation of Development Assistance, including Relevance, Effectiveness, Efficiency, Impact, and Sustainability.

The SE was conducted over a period of approximately 6 months and was initiated through a workshop organized in Zambia in November 2025 to gather regional and selected local stakeholders from the three participating countries (Malawi, Zambia and Zimbabwe) to agree on protocols for the collection of storylines from the field and the Focus Group Discussions (FGD). Data collection also consisted of an in-depth desk review of project activities and outputs, including the MTE, project technical and annual reports, and other relevant documents. The evaluation uses a bottom-up participatory approach, starting with a survey to gain an overview, followed by FGDs, structured questionnaires, and workshops. The project design was highly relevant to the selected hotspots, farming communities, and countries, and also leveraged the larger Zambezi basin and the global level. It responded to local priorities related to food security and employment, as well as broader national and international development priorities set out in the Sustainable Development Goals (SDGs) related to food security, gender equality, integrated water resources management, sustainable communities, climate resilience, land degradation neutrality, and enhanced south-south collaboration.

While the identification phase of the Transforming Investment in Africa's Rainfed Agriculture (TIARA)-Zambezi started with significant resistance and poor recognition towards the concept of supporting enhanced rainfed agriculture, the project resulted in a more favourable enabling environment for rainfed agriculture, with, for instance, recognition and promotion of the Deep Bed Farming (DBF) technique and locally-adapted conservation

agricultural practices (Pfumvudza) by the Governments of Malawi, and Zimbabwe, respectively, as well as recognition by ZAMCOM's Council of Ministers of the importance of investing in rainfed agriculture.

The project resulted in capacity development at both local and multi-country level. Approximately 811 farmers were trained, of which more than 50% were women and 15% were youth. These groups have empowered the larger community (4,000 people) through field days with demonstrations. They benefited from improved support from the agricultural extension service on enhanced rainfed practices. Through field days and collaboration with the agricultural extension service, around 20,000 farmers were reached in the pilot countries, according to the NGOs' assessments in 2025. Following its Mid-Term Evaluation, the project stepped up its support for multi-country capacity building, involving knowledge exchanges in the field, which resulted in the training of local and regional practitioners and the creation of knowledge-sharing platforms that linked technical experts from SIWI and ICRAF with the local NGOs.

The project has made significant progress in developing a business case for enhanced rainfed agriculture that combines field monitoring by farmers, with the development of conceptual frameworks and remote sensing. It has supported an analysis of nature-based investments in enhanced rainfed agriculture through soil-water metrics, focusing on the Lunyangwa watershed in Malawi, where the project has helped mobilising a grant from the Global Innovation Fund (GIF) to establish a monitoring baseline to scale up DBF. TIARA-Zambezi also led to substantial progress in empowering vulnerable groups, in particular women, youth and the poor, in enhanced rainfed agriculture, with women obtaining leading positions.

The project was cost-effective with a limited amount of funding used to leverage additional resources to support enhanced rainfed agriculture with Nature-based Solutions (NbS) in the Zambezi basin and beyond. In general, there has been positive feedback from the different stakeholders regarding the quality of project support, and the adequacy of the approach to mobilise engagement and funding for enhanced rainfed agriculture.

The project led to substantial progress in empowering vulnerable groups, in particular women, youth, and the poor, in enhanced rainfed agriculture. It had a direct impact on their skills and contributed to food security.

The overall rating of the project is Satisfactory to Highly Satisfactory. There were some challenges related to project management caused by the restructuring of SIWI, but the project was strong on capacity development, financial management and progress towards impact. The project successfully transitioned from external funding to long-term regional ownership and empowerment and moved from local pilots to basin-wide impact. The project redefined rainfed agriculture as a high-return, nature-based investment across the Zambezi region, benefiting both people and nature.

1. Introduction

1.1 Background

The Zambezi River is Africa's fourth-largest river, providing vital resources for sustainable economic growth, environmental services, food security, and hydropower generation. Yet, an estimated 65–70% of the basin's population depends on small-scale, rainfed agriculture, often living in extreme poverty due to low productivity. Tackling poverty and revitalising rural economies in the Zambezi basin requires improved soil management and efficient water use.

Smallholder farmers are the frontline managers of water resources, influencing runoff, infiltration, and erosion. However, most lack training and technical support to manage scarce water and land resources, especially so-called green water or soil moisture that rainfed agriculture depends on. Enhanced rainfed agriculture addresses this gap by improving infiltration and soil moisture retention through Conservation Agriculture (CA) and associated techniques also referred to as Nature-based Solutions (NbS), such as in-situ rainwater harvesting, minimum tillage and improved soil cover, reducing evaporation and erosion, boosting groundwater recharge, and enhancing soil fertility.

Previous studies show that enhanced rainfed agriculture is highly cost-effective: yield per dollar invested can be up to six times greater than conventional farming. Despite these benefits, investment remains limited, as irrigation is often perceived as easier and more effective. Raising awareness of rainfed agriculture's potential is therefore critical. Through the TIARA programme, SIWI has supported ZAMCOM in mobilising financing for farmers. The basin's Strategic Plan to 2040 prioritises livelihoods, and TIARA-Zambezi has worked with local partners to build a strong business case for investing in rainfed agriculture.

As part of TIARA, the Enhancing Rainfed Agricultural Systems in the Zambezi Watercourse project (TIARA-Zambezi - July 2020–March 2026) aims to scale up awareness and investment. Funded by the LBF (EUR 1.2 million over six years) with co-funding from Sida (SEK 2 million), the project is implemented by SIWI in collaboration with ZAMCOM, and ICRAF. The project Theory of Change (ToC) in the project grant agreement started with the creation of an enabling environment for investments and activities that support enhanced rainfed agriculture. Strategic activities were designed to generate three outcomes on:

- 1) Public and private commitments to enhanced rainfed agriculture;
- 2) Business case for enhanced rainfed agriculture; and
- 3) A cadre of multidisciplinary champions that implement enhanced rainfed agriculture (Figure 1).

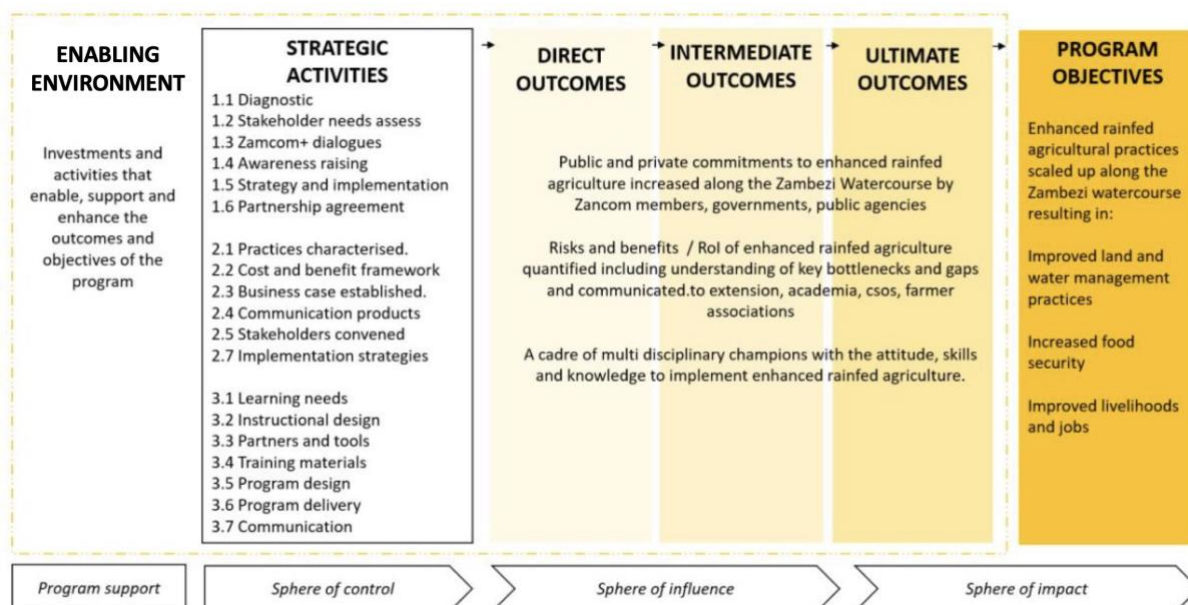


Figure 1: Project ToC according to LBF-SIWI grant agreement signed in 2020.

The TIARA-Zambezi project was organised into three components for the implementation phase:

1. Political leadership and advocacy (public and private investments)
The objective of this component was to enable dialogues from local, regional to international level to ensure high-level leadership and political commitments to support green water solutions and unlock public and private investments in enhanced rainfed agriculture.
2. Capacity development
The objective was to build capacity in enhanced rainfed agricultural practices, building on NbS, to scaling up sustainable and resilient practices at the landscape and watershed scale, balancing economic returns with multiple ecosystem services and livelihood benefits.
3. Knowledge generation and business case development
The objective of this component was to generate knowledge (including metrics for measuring watershed impacts) supporting the development of a business case for enhanced rainfed agriculture considering risks and benefits, and Return on Investment (ROI) that can attract finance for sustainable and resilient agricultural practices.

1.2 Selection of project sites and local partners

The project identified hotspots within the Zambezi Watercourse to showcase best practices, build capacity, and develop business cases for enhanced rainfed agriculture. ZAMCOM committed itself to working with SIWI on resilient climate-smart rainfed agriculture and the two parties signed a Memorandum of Understanding (MoU) in March 2022. The objective of

the MoU was to mobilise ZAMCOM to offer a platform for the TIARA-Zambezi project to identify and engage with the relevant stakeholders for each of the geographical hotspots.

The site selection process involved a literature review and consultations with strategic partners and stakeholders, including ZAMCOM and the Climate Resilient Infrastructure Development Facility (CRIDF). CRIDF is a Foreign, Commonwealth & Development Office (FCDO) supported programme working to provide long-term solutions to water issues that affect poor communities in Southern Africa. The recent ZAMCOM report on Poverty Vulnerability Mapping¹ presents the Method, Vulnerability Zones, Hotspots and Typologies of the entire Zambezi River Basin. The study divides the river basin into seven vulnerability zones, each characterised using land use and cover and socio-economic factors, including population, poverty, health and corruption. The study also maps environmental issues such as deforestation, bushfires, tree cover and vegetation loss. The study identified several hotspots within each zone, most of which are highly relevant to the project. SIWI reviewed each hotspot within the cropland. There are five hotspots under the agriculture theme recommended for Climate-Smart Agriculture under rainfed conditions (Figure 2).

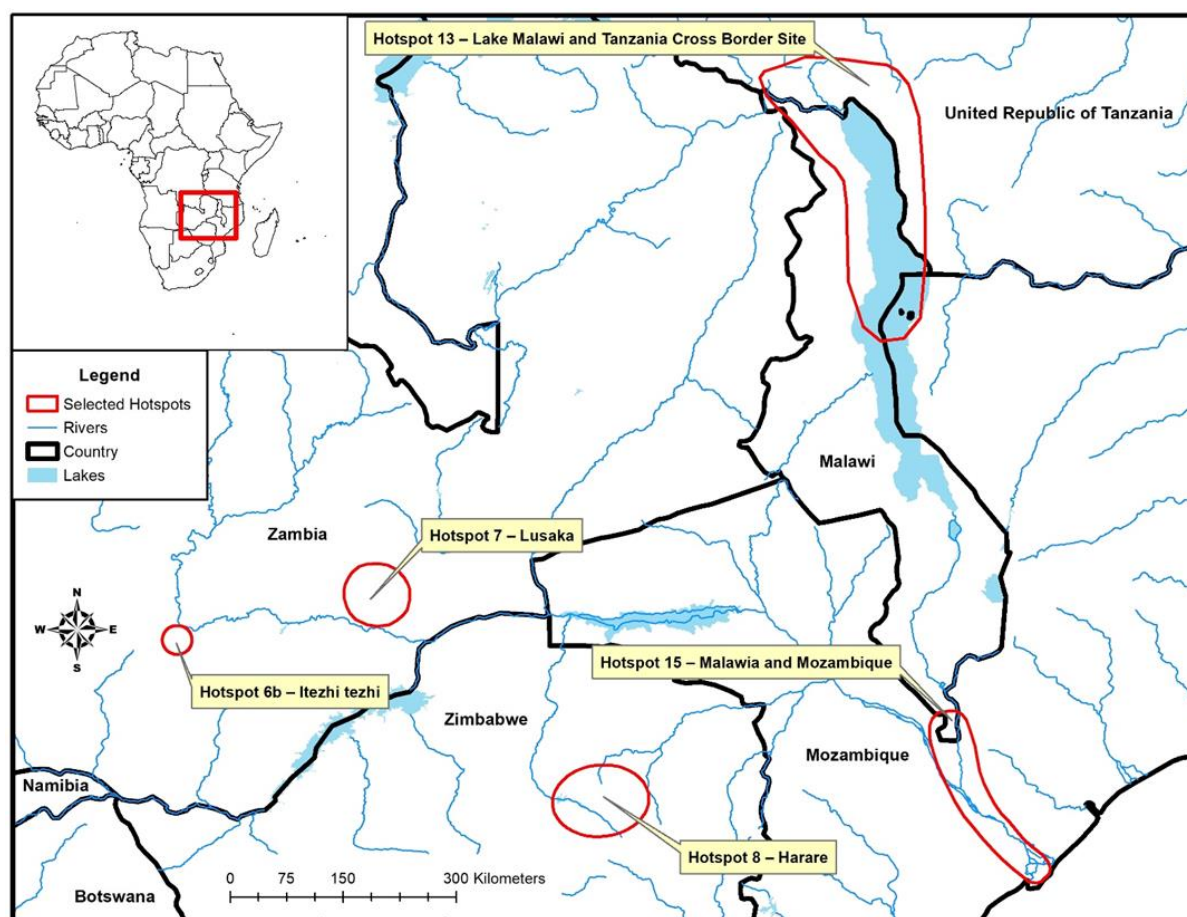


Figure 2: Hotspot analysis in the Zambezi basin based on poverty analysis and land degradation assessment (source:ICRAF).

SIWI partnered with ICRAF to conduct an assessment of land and water resources within selected hotspot areas in the Zambezi Watercourse. The main objective of this study was to characterise all five pilot sites, assess rainwater harvesting potentials, determine the aridity

¹ <https://cridf.net/RC/wp-content/uploads/2023/01/ZAMCOM-Poverty-Vulnerability-Mapping.pdf>

index of the hotspots, perform a land degradation assessment and finally propose land restoration measures. By the end of 2022, TIARA-Zambezi had formed partnerships with four NGOs based in Malawi, Zambia, and Zimbabwe to support the implementation of pilot projects. These included the Community Technology and Development Trust (CTDT), Community Markets for Conservation (COMACO), Farmers' Association of Community Self-Help Investment Groups (FACHIG) Trust, and Tiyezi Trust. These organisations submitted proposals to undertake innovative pilots using rainfed agriculture techniques to promote the mandate and objectives of the TIARA initiative. Pilot projects in the field included:

- Malawi: Mzuzu in Mzimba Northern Region, and outside of Lilongwe in Central Region together with Tiyezi (hotspots 13 and 15)
- Zimbabwe: 3 household-based demonstration plots in wards 8, 10 and 11, representative of drier and arable parts of Mt Darwin district (together with FACHIG), and 25 hectares in part of Mashonaland East province in the Mutoko and Mudzi districts, Zimbabwe (together with CTDT/CTDO) (hotspot 8).
- A partnership agreement with a social enterprise in Zambia working in agroforestry systems in the eastern and southern parts of the country (COMACO) (hotspot 6b and 7).

1.3 Mid-Term Evaluation (MTE)

The project's external MTE² was finalised in April 2024 and covered the period 2020-2023. It undertook a thorough review of project documents and reports and conducted online interviews with key informants from partners in the ZAMCOM region, including local NGOs. However, it did not undertake any assessment of field impacts nor collect evidence from local land users. The SE of the project is thus designed to complement the MTE and to focus on evidence of project impact from the field and on the assessment of final outputs and results. In addition, strategic recommendations from the MTE that this report follows up on include the need to:

- Strengthen gender and intersectoral approaches
- Accelerating the development of a more comprehensive vision of enhanced rainfed agriculture
- Systematise and capitalise on project lessons learned
- Initiate a reflection with stakeholders on the capacity development strategy
- Reflect on farmer-based organisations' role in the process

1.4 Purpose and scope of the Self-Evaluation

The SE's goals are to ensure accountability and provide lessons for future projects:

- It assesses resource use and results achieved, and documents lessons learned for future initiatives.

² B. García, 2024. Mid-Term Evaluation of the Transforming Investments in African Rainfed Agriculture (TIARA) initiative in the Zambezi Watercourse (2020 – 2025). Independent Evaluation Report commissioned by SIWI.

- Primary users include SIWI, LBF, local NGOs in the Zambezi basin, ICRAF, ZAMCOM, and other organisations involved in similar initiatives.

The SE seeks to produce:

- Strategic and operational recommendations, grounded in emerging best practices and lessons learned, aimed at reflecting on the programme implementation regarding its achievements in terms of impacts and enhanced sustainability.
- Recommendations on how to develop guidelines and models for enhanced rainfed agriculture that can be used and replicated in other African basins and sub-regions, and on scaling up enhanced rainfed agriculture through NbS.

The SE covers the period from July 2020 to the project's completion in March 2026 and focuses on TIARA-Zambezi outputs, outcomes, and impacts. Regarding the geographical scope, the analysis focuses on the project intervention areas in Malawi, Zambia, and Zimbabwe. At the same time, it adopts a broader, global perspective by encompassing the entire Zambezi River Basin and the full scope of the TIARA advocacy initiative.

2. Methods

2.1 Self-Evaluation approach

In accordance with the Terms of Reference (ToR), the evaluation adopts a participatory approach, applies a systemic lens to the project's ToC, and integrates rights-based and gender-in-development perspectives throughout the process.

The SE followed the OECD, DAC Principles for evaluation of development assistance³, including five out of the six normalized evaluation criteria: Relevance, Effectiveness, Efficiency, Impact, and Sustainability. Impact and sustainability were analysed with a forward-looking perspective to look at long-term changes beyond the TIARA program scale.

The main analytical framework for the SE builds on the evaluation matrix (Annex 1) developed by the MTE. The evaluation criteria were first structured around three project dimensions, namely, Design, Structure and Process, and Results, which enabled a systemic approach to complement the OECD-DAC criteria framework. These dimensions were then contextualised through a set of evaluation questions. For each criterion, specific questions were included to address cross-cutting issues and ensure the integration of human rights and gender perspectives.

Finally, indicators were developed for each evaluation question to define key areas for analysing project performance. Information sources and data collection tools were linked to each indicator, ensuring the availability of multiple data sources (both primary and secondary) to triangulate evidence gathered for every question.

³ <https://alnap.org/help-library/resources/principles-for-evaluation-of-development-assistance-0/#:~:text=Share,evaluation%20and%20feedback%20of%20results>.

2.2 Evaluation process, tools and sources of information

The evaluation employed a mixed-methods approach that included triangulating all data and information to assess the convergence of evidence and strengthen the validity and reliability of the findings.

The SE was conducted over approximately 6 months, with data collection from the 3rd of November 2025 to the 31st of March 2026, and the reporting until the 30th of April 2026. It was initiated through a workshop organised in Zambia in November 2025 to gather regional and selected local stakeholders from the three participating countries (Malawi, Zambia and Zimbabwe) to agree on protocols for the collection of storylines from the field and the FGDs. The FGD template was co-designed by SIWI and ICRAF, and was further adjusted by the participating NGOs, based on the first discussion, led by COMACO, with farmers during the workshop in Zambia. The FGD enabled the collection of evidence and storylines from farmers. The FGDs aimed to have gender-balanced and representative groups, ensuring the inclusion of women and youth. TIYENI, CTDI, and FACHIG used the same template (Annex 2) to collect data from different enhanced agricultural practices and NbS, in Malawi, and Zimbabwe, enabling analysis across countries. During the workshop, SIWI also disseminated a structured questionnaire to the NGOs to collect their insights on the Effectiveness, Efficiency, Impact, and Sustainability of the project outcomes (Annex 3).

Data collection consisted of an in-depth desk review of project activities and outputs, including the MTE, project technical and annual reports, and other relevant documents (see Annex 4a for the list of documents consulted).

The evaluation uses a bottom-up participatory approach, starting with a survey, to gain an overview, followed by FGDs, structured questionnaires, and workshops. A full list of the data collection methods is available in Annexes 2 and 3. This approach enabled the gathering of information and storylines⁴ from stakeholders involved in the project from the regional, national, and local levels. FGDs were held in Zambia, Zimbabwe, and Malawi to reach out to the direct project beneficiaries in rural areas (Table 1 & Figure 3).

Table 1: FGDs held in three countries, highlighting the location, the responsible NGO, and the number of participants disaggregated per gender and youth.

Country	Dates	Location (Village, District)	NGO	Number of participants	Number of men	Number of women	Number of youth
Zambia	06/11/2025	Kalindawalo Chiefdom, Petauke	COMACO	26	7	19	/
Zimbabwe	31/12/2025	Nyamukondiwa, Mutoko	CTDT	24	7	13	4
Zimbabwe	01/01/2026	Taruvunga, Mudzi	CTDT	28	16	8	4
Zimbabwe	16/12/2025	Gatsi, Mt Darwin	FACHIG	13	4	9	/
Malawi	24/12/2025	Eswazini, Mzimba	Tiyeni	11	3	7	1
TOTAL	/	/	/	102	37	56	9

⁴ <https://cdn.auckland.ac.nz/assets/auckland/education/research/docs/CCRE-MSCGuide.pdf>



Figure 3: FGD in Nyawasha village, Ward 16, Mutoko district, Zimbabwe, 31/12/2025 (CTDT).

A structured questionnaire was administered to the local NGOs working in the field, which included CTDT, FACHIG, Tiyeni, and COMACO, to collect information about their experiences with enhanced rainfed agriculture, the challenges encountered, the lessons learned, and their recommendations (Annex 3). The questionnaire, which sought to collect both qualitative and quantitative information, comprised a mix of open-ended, and closed questions, multiple-choice questions, and Likert scale questions. By providing actionable insights, the responses will help improve future projects, building on key results from TIARA-Zambezi.

In total, fifteen participants contributed to the development of the SE (Annex 5). Table 2 shows the breakdown of participants per categories:

Table 2: Participants in the SE.

Project Team	Local NGOs	CIFOR-ICRAF	Government officials	TOTAL
3	8	2	2	15

Being a final SE, factors leading to success, and the challenges encountered during the programme constitute areas of improvement, and lessons learned for future projects. The draft SE report was shared with SIWI and ICRAF staff who had not been involved in the evaluation, for a more independent rating of the project. The evaluation matrix (Annex 1) shows the connection between the evaluation questions and the report sections.

2.3 Limitations of the evaluation

The ToC included in the signed grant agreement between LBF and SIWI does not include specific and measurable indicators. New indicators were developed based on recommendations from the MTE and were only in use from 2024 until the closing of the project. The original outcomes of the project were also somewhat vague. The post-approval design of project indicators in consultation with local partners made them more achievable.

Although the SE set out to be inclusive and participatory in the assessment of field impacts and local perceptions, it was difficult to reach all concerned households in remote rural areas. Being a self-evaluation, it risks being biased in favour of the implementing organisation (SIWI). To avoid bias in the SE, SIWI's Monitoring and Evaluation (M&E) expert conducted an independent review of the draft SE report, as well as an expert at ICRAF.

3. Evaluation findings

3.1 Project Relevance

This section analyses project relevance based on the OECD DAC principles. Small-scale farmers are the main target group of the project and are particularly vulnerable to food insecurity and poverty. TIARA-Zambezi visualises and supports their role as *“front-line managers of water”*, which is often neglected in policy making. Within the small-scale farmers group, women and youth are particularly targeted, making explicit the potential of enhanced rainfed agriculture to improve women's livelihoods and youth employment. As discussed below under Results and Effectiveness, stakeholders have expressed their satisfaction regarding how the project design responds to the priorities and needs of rural communities in the Zambezi basin. Local NGOs stressed that the project has improved market access, income-generating activities, and livelihoods, especially through increased yields.

“It has created employment through farmer casual labour hiring for potholing in the Pfumvudza⁵ practices.” – FACHIG.

CTDT and FACHIG highlighted TIARA-Zambezi's contributions towards crosscutting issues. TIARA-Zambezi strongly benefited women's empowerment in decision-making, income control, and leadership. Vulnerable groups, in particular youth and the poor, were also targeted in TIARA-Zambezi's interventions.

“Women have been able to invest in small businesses from farming” – CTDT.

“Women and youths were able to obtain casual jobs in potholing of the Pfumvudza” – FACHIG.

⁵ Pfumvudza is a concept of conservation and precision agriculture.

CTDT and Tiyei mentioned that 25-50% of households, in the regions in which they work, are currently benefiting from project interventions, while FACHIG households' involvement reaches more than 75%. More in-depth results and details on the effectiveness of TIARA-Zambezi's activities are found in section 4.3.

Relevance is also analysed in terms of alignment with development priorities as set out in the 2030 Agenda and SDGs, and in the ZAMCOM poverty vulnerability mapping (see section 1.2). As can be seen in Table 3, the project is well aligned and contribute to a range of SDG targets on food security, gender equality, water and sanitation, Climate Action, Life on Land, etc. that are also reflected in the participating countries' national priorities and reporting on SDGs as well as to the United Nations (UN) Rio Conventions and the Sendai Framework on Disaster Risk Reduction (DRR). These priorities are, in turn, operationalised at the local and community level through the local NGOs that are the project partners in the field. Local partners have also had the opportunity to exchange knowledge with each other through exchange visits in the field (as discussed below), with all ZAMCOM riparian states through the ZAMCOM Investment Forum on Rainfed Agriculture, and with partners from all over the world through annual sessions at the World Water Week (WWW) (SDG17).

Table 3: Project alignment with the SDGs.

SDG	Target	Significance and links to TIARA-Zambezi
1 NO POVERTY 	1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.	Resilience to impact of climate change on livelihoods
2 ZERO HUNGER 	2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Food security, DRR
5 GENDER EQUALITY 	5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	Women's rights and access to land resources and decision making for Sustainable Land Management (SLM)
6 CLEAN WATER AND SANITATION 	6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Water harvesting, Soil and Water Conservation (SWC), DRR
11 SUSTAINABLE CITIES AND COMMUNITIES 	11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage	Sustainable and resilient communities, DRR

	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Climate mitigation and adaptation through SLM, DRR
	15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Resilient landscapes, Land Degradation Neutrality (LDN)
	17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	Collaboration on increasing investments in enhanced rainfed agriculture within the framework of ZAMCOM Exchange of knowledge at WWW with partners and stakeholders around the world

It can be concluded that the project design was highly relevant to the selected hotspots, farming communities, and countries, and also leveraged the larger Zambezi basin and the global level. It responded to local priorities related to food security and employment. It responded to ZAMCOM's analysis of poverty hotspots and targeted hotspots in areas dominated by rainfed agriculture. It also responded to broader national and international development priorities set out in the SDGs, addressing poverty, food security, gender equality, integrated water resources management, sustainable communities, climate resilience, land degradation neutrality, and enhanced south-south collaboration.

3.2 Project Results and Effectiveness

This section assesses the project's effectiveness by analysing changes linked to the project's interventions. The section is organised into outputs, outcomes and processes of change, addressing the effectiveness OECD DAC criteria (section 3.2.1), combined with cross-cutting approaches, with special focus on human rights, gender, and representativity of the results at different levels (focusing on effectiveness in section 3.2.2).

3.2.1 Outputs, outcomes and processes of change

The SE builds on the processes of change (Annex 6), co-developed during the MTE by the SIWI evaluator and the project team. It demonstrates the processes of change covered in the 6-year period of the TIARA program (2020-2025). The SE follows the structure of the ToC (Figure 1) elaborated at the initial phase of the project, addressing (1) political leadership and advocacy, (2) capacity development, and (3) knowledge generation and the business case.

3.2.1.1. Political Leadership and Advocacy

The first component focuses on strengthening political leadership and advocacy for enhanced rainfed agriculture. It included foundational project development activities and the assessment and ranking of vulnerable hotspots by ICRAF in the Zambezi basin, based on the ZAMCOM poverty hotspot assessment discussed above. The MoU signed with ZAMCOM enabled a continuous dialogue and the sharing of materials, outputs, and outcomes on enhanced rainfed agriculture across all the riparian states in the Zambezi basin. A key milestone was the ZAMCOM Rainfed Agriculture Investment Forum that TIARA-Zambezi helped organise in Gaborone, Botswana, in August 2023.

As a result of the Forum in Gaborone, enhanced rainfed agriculture gained public recognition through the declaration of intent to channel efforts, collaboration and knowledge sharing to increase finance for enhanced rainfed agriculture and to promote the ROI. This acknowledgement later evolved into an official commitment of ZAMCOM and the eight Zambezi riparian countries, and a Statement of Intent was signed at the ZAMCOM Ministerial Council in April 2024 (Figure 4).



Figure 4: Statement of Intent on Rainfed Agriculture approved by the ZAMCOM Council of Ministers on 25 April 2024 in Tete, Mozambique.

Another direct result facilitated by the investment forum was access to a GEF grant for community resilience, further elaborated in section 4.1.1.

Additionally, Callisto Grand, a corporate credit advisory and conference company based in the Czech Republic, awarded a grant to Tiyei. The grant was awarded in partnership with Regen Innovation, a company working with entrepreneurial ventures. Following the Forum, COMACO partnered with the Cooperative Rabobank to implement the Agroforestry CRUs for the Organic Restoration of Nature (ACORN) to create above-ground biomass carbon market opportunities for its farmers who are adopting agroforestry, and to introduce COMACO to new carbon accounting standards with higher carbon market value.

From 2021 to 2025, the TIARA-Zambezi project utilized World Water Week (WWW) as a key platform for advocacy, knowledge sharing, and partnership building. In 2021, the project was presented at a WWW session to highlight approaches to regenerating Africa's rural economies, with the aim of influencing policy-makers at national, basin, and global levels, as well as the international development community. By 2022, the project and its partners convened a session and a talk-show production on food and climate, which successfully raised awareness about the “food crisis” and showcased the “Catching Raindrops” film to a global audience. The 2023 session, “*Investing in Rain – Pathways to a Sustainable Future*”, brought together regional entities such as ZAMCOM and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) to highlight the need for Public-Private Partnerships (PPPs) and agroforestry interventions. In 2024, TIARA-Zambezi focused on presenting the refined “business case” for rainfed agriculture, using empirical data from five hotspot sites to influence government spending and development finance. Lastly, the 2025 session marked an achievement of these efforts, sharing five years of lessons on scaling green water management and establishing long-term investment roadmaps for the Zambezi basin.

TIARA-Zambezi sessions at WWW gathered diverse stakeholders from academia, NGO, governmental and intergovernmental organisations, financial institutions, and the private sector. Green water management through enhanced rainfed agriculture has recently attracted significant interest, as evidenced by the 187 participants at the 2025 WWW session, exceeding the 2025 average attendance of 165. Sessions enabled raising of awareness and understanding of the potential of enhanced rainfed agriculture by presenting field evidence on the costs and benefits of investing in improved practices. Thus, these annual sessions collectively transformed rainfed agriculture from a neglected sector into a recognised priority for climate in Southern Africa and beyond.

While the identification phase of the project started with significant resistance and poor recognition towards the concept of supporting enhanced rainfed agriculture, the project has resulted in a more favourable enabling environment for rainfed agriculture, with, for instance, recognition and promotion of the DBF technique and the Pfumvudza concept by the Governments of Malawi, and Zimbabwe, respectively, as well as recognition by ZAMCOM’s Council of Ministers of the importance of investing in rainfed agriculture. In 2026, although efforts need to continue, the concept of green water management through enhanced rainfed agriculture has gained momentum and is referred to in the recent World Bank report on Rebooting Development (2025)⁶ that is recognizing techniques, such as no-till farming, mulching, pitting, contouring, and terracing to help retain soil moisture by reducing evaporation, increasing infiltration, and preventing runoff (World Bank, 2025).

Lastly, SIWI has continuously conducted a web-based campaign by uploading field visit reports, technical reports, training manuals, and the WWW recorded session on the [TIARA webpage](#). SIWI uploaded two project blog posts on the SIWI website: [one](#) on the 2025 WWW session and [another](#) on the field visit in Zambia. Lastly, SIWI promoted TIARA-

⁶ Damania, Richard, Ebad Ebadi, Kentaro Mayr, Jason Russ, and Esha Zaveri. 2025. Reboot Development: The Economics of a Livable Planet. Washington, DC: World Bank. doi:10.1596/978-1-4648-2271-1.

Zambezi through many LinkedIn posts highlighting progress, activities, and achievements (Annex 9), as well as a short field visit [film](#) uploaded to the SIWI YouTube channel. This active communication has contributed to raising large-scale awareness of the role and impact of enhanced rainfed agriculture in green water management.

3.2.1.2. Capacity development

The second component focused on capacity development at both the local and multi-country levels. The project involved local NGOs from Malawi, Zambia and Zimbabwe, which actively supported gender justice and youth inclusion in the application of DBF, Pfumvudza and other CA practices. Looking at the direct beneficiaries of enhanced rainfed agricultural practices—farmers and local communities—approximately 811 farmers were trained, of which more than 50% were women and 15% were youth. These groups have empowered the larger community (**4,000 people**) through field days with demonstrations. There has also been continued outreach to new communities through knowledge sharing of successful farming practices with farmers and government agricultural extension services. Indirect beneficiaries included the larger farming communities at the selected hotspots. They benefited from improved support from the agricultural extension service on enhanced rainfed agricultural practices. Through field days and collaboration with the agricultural extension service, around **20,000 farmers** were reached in the pilot countries, according to the NGOs' assessments in 2025.

Following the MTE, the project stepped up its support for multi-country capacity building, training and knowledge exchange, and supported three regional learning and knowledge exchanges in the field in Malawi (2024), Zimbabwe (2025), and Zambia (2025). This involved developing a training course on integrated landscape management based on a series of landscape management manuals developed by SIWI and the International Water Management Institute (IWMI, a sister organisation to ICRAF), as well as a slide deck.

The workshops held in Malawi, Zimbabwe, and Zambia enabled participants to learn from and share experiences on enhanced rainfed agriculture with NbS. The workshops aimed at strengthening the technical and institutional capacities of practitioners in enhanced rainfed agriculture. CTDI, Tiyezi, and FACHIG attended the three workshops, while ICRAF and COMACO joined and facilitated Zambia's workshop. In addition, ZAMCOM's M&E officer participated in the first workshop in Malawi. Workshops comprised training sessions on participatory approaches to water governance and landscape restoration, integrating climate adaptation in agricultural and landscape planning, and monitoring tools and indicators for climate-resilient landscapes. In addition, workshops included field visits to selected hotspots (Figure 2), which provided opportunities to interact with and learn from smallholder farmers practising enhanced rainfed agriculture with NbS.



Figure 5: Field visit workshop in Malawi, in 2024, in a DBF plot (photo by Anna Tengberg).

TIARA-Zambezi field visits in Malawi, Zimbabwe, and Zambia focused on training of trainers through knowledge exchange sessions and field visits to scale up sustainable agroecological practices. The training in Malawi highlighted the DBF agroecological practice, improving soil structure by breaking the hard pan and using organic fertilisation (Figure 5).

In the Zimbabwe training, outputs included strengthened skills on the implementation of the Pfumvudza concept, a form of precision and CA involving potholing, intercropping and mulching (Figure 6), and the establishment of Community Seed Banks (CSB) to preserve crop diversity.



Figure 6: Field visit workshop in Zimbabwe, in 2025, in a Pfumvudza plot using intercropping (photo by David Mingasson).

In Zambia, the focus was on capacity building in forest conservation management and agroforestry (Figure 8) for water harvesting and on integrating “It’s Wild!” community markets to link sustainable farming to value chains. “It’s Wild!” is a food brand created by



Figure 7: Peanut processed into peanut butter by COMACO and sold under the "It's Wild!" brand (COMACO website).

COMACO that aims to link local food production by small-scale farmers to the food market. Some of the raw food products, such as peanuts, maize, and soya, are also processed by COMACO to add value (Figure 7). COMACO ensures that all proceeds from the sales are channelled directly back into farmer support services.

These training outputs served as the foundation for the broader goal of scaling green water (soil moisture) management across the Zambezi Basin.



Figure 8: Interactive dialogues between workshop participants and farmers on an agroforestry plot, in Zambia, in 2025 (photo by Charles Menda, photographer).

These visits resulted in the training of local and regional practitioners and the creation of knowledge-sharing platforms that linked technical experts from SIWI and ICRAF with local NGOs, namely Tiyeni, CTDI, FACHIG, and COMACO, as well as government representatives. Participants were provided with specialized manuals on water-smart landscape management, as well as agroforestry, and monitoring toolkits designed to track hydrological impacts and soil health. ICRAF raised participants' awareness through training sessions on climate-resilient water governance and sustainable landscape management. Participants greatly valued the multi-country knowledge-exchange workshops and expressed a strong desire to sustain this exchange.

“Multi-country transfer of knowledge has been key; now, it is time for multi-country implementation to experiment with agroecological practices in different geographic context.” – Isaac Munjo Chavula, Tiyei.

Thus, the primary outcomes of these exchanges were improved technical capacities among regional stakeholders and a deeper understanding of how enhancing rainfed agriculture with NbS can improve rural livelihoods and environmental resilience. The process of change was driven by “farmer-to-farmer” knowledge sharing and the “Training of Trainers” model, which empowered local practitioners to replicate and tailor these techniques to their specific landscapes. By demonstrating that agroecological practices could produce higher yields and ROI than conventional farming (see data below), the visits facilitated a shift toward agroecological mindsets. The change of process also enabled farmers to transition from climate-vulnerable subsistence farming to profitable, climate-smart commercial production, supporting the restoration of degraded watersheds through increased water recharge, soil health, carbon sequestration, and biodiversity conservation.

The NGOs also stressed that field visits encouraged farmers to implement enhanced rainfed agriculture practices: *“Exchange visits by funders and partner organisations motivated our farmers to carry on with practices, and the link with research institutions, local leaders and other like-minded organisations increased the scope of landscape approaches”* – CTDT, NGO questionnaire.

By adopting enhanced rainfed agriculture practices, smallholder farmers have seen tangible outcomes related to:

- Increased soil moisture retention, protecting crops during mid-season droughts,
- Significantly higher yields compared to traditional methods
- Greater ROI, increasing livelihoods.

“Yes, interventions improved soil fertility as we experienced higher yield and a reduced run-off and soil erosion” – Farmer from Eswazini, Malawi (FGD with Tiyei).

“Climate-smart practices, such as the use of mulch, growing drought-tolerant crops, digging infiltration pits and tied ridges, prolonged the time moisture is retained (kept) in the soil. Moisture retention resulted in crops being protected from prolonged mid-season dry spells and severe droughts.” – Farmer from Mutoko, Zimbabwe (FGD with CTDT).

3.2.1.3. Knowledge generation and business case development

Component 3 comprised several activities designed to unlock knowledge, understanding, skills, awareness, and behaviours necessary for enhanced rainfed agriculture practices to happen at scale. Field monitoring activities, enabling the quantification of costs and benefits, experts and stakeholders’ meetings, and research, led to several outputs and outcomes.

A variety of knowledge products, such as technical reports, field visit reports, and scientific papers, to name a few, were produced throughout the program (a full list can be found in Annex 4b), supporting implementation, communication, research, field data collection, dialogues, and advocacy for enhanced rainfed agriculture. The MTE provides an overview of

reports produced between 2020 and 2023, and the SE is therefore focusing on the achievements in 2024 and 2025.

Field monitoring and local knowledge

The project continuously supported field monitoring of enhanced rainfed practices compared to conventional practices at the selected hotspots in Malawi, Zimbabwe, and Zambia. The business case for enhanced rainfed agriculture was finalised based on field monitoring paired with regional-scale modelling of impacts on soil moisture and carbon.

Throughout the project, the local NGOs worked with demonstration farmers who collected field data in selected hotspots in Malawi and Zimbabwe to compare the effectiveness of different practices and produce evidence-based knowledge. The NGOs monitored three parameters: yield (t/ha), ROI (%), and revenue per ha (\$/ha) (Table 4).

Table 4: Field data from FACHIG (Zimbabwe), CTDI (Zimbabwe), and Tiyei (Malawi) to develop the business case for enhanced rainfed agriculture.

		Yield (t/ha)	ROI (%)	Revenue per ha (\$/ha)
FACHIG (2022-2024)	Pfumvudza	0.9	/	/
	Conventional practice	0.5	/	/
CTDI (2021-2023)	CA	1.5	104	570
	Conventional practice	1	80	380
Tiyei (2022-2024)	DBF	4.5	131	2,449
	CR	2.3	25	1,243

TIYENI implemented a 3-year pilot study (2022-2024) with a business case comparing the profitability of DBF and Conventional Ridge (CR) systems, with maize crops, in the Eswazini extension planning area in the Mzimba district of northern Malawi. 10 farmers participated in the pilot, and 4 ha were allocated to DBF and 4 ha to CR. On the DBF plot, TIYENI used an integrated soil fertility management with mechanised tillage and bed making, blended fertilisation, organic manure, and agroforestry integration. TIYENI used three Key Performance Indicators (KPIs): (1) the ROI as the ratio of net benefits to total investment, (2) yield in kg/ha, and (3) gross revenue USD/ha. Results showed DBF delivered a clear economic and productive advantage over CR beds:

- ROI: An average of 131% with DBF versus 25% with CR.
- Yield per ha: An average of 4,488 kg/ha with DBF versus 2,303 kg/ha with CR.
- Revenue per ha: An average of \$2,449 with DBF compared to \$1,243 with CR.

The pilot project combined the establishment of demonstration plots with field days, inviting local communities and government extension officers. Adopting DBF proved highly profitable for farmers and led to behavioural change, with farming shifting from subsistence experimentation to market-oriented production. Despite slightly higher establishment costs of DBF (\$1,095/ha with DBF vs \$1,012/ha with CR), net financial returns far outweighed incremental investment, demonstrating that enhanced rainfed systems strengthen economic resilience and justify scaling across Malawi.

During the FGD in Malawi (Annex 2), farmers mentioned that they are “*very satisfied*” and “*very likely*” to continue practising DBF and stressed that:

“Tiyeni’s DBF has many benefits, from high yield, food security, to improved income”

“Yield has increased from an average of 30 bags (50 kg) to over 60 bags (100 kg) of maize”

“High yield led to improved income, hence starting other small businesses” – Farmer from Eswazini, Malawi (FGD with Tiyeni).

From 2022 to 2024, FACHIG conducted a three-year field study comparing yields for maize crops across four agricultural practices: (1) Pfumvudza organic, (2) Pfumvudza inorganic, (3) conventional practice (using synthetic fertilizer and mechanization like rippers and ploughs), and (4) farmer practice (manual tools with minimal to no fertilizer). Results consistently showed that the Pfumvudza organic plot achieved the highest yield per hectare, followed by Pfumvudza inorganic, conventional, and farmer practice plots. Notably, the benefits of Pfumvudza were evident from the very first year of implementation. Pfumvudza also demonstrated greater resilience to climate extremes. During the El Niño-induced drought of 2023/24—which severely affected national yields—the conventional practice plot saw a fivefold reduction, from 500 kg to 100 kg. In contrast, the Pfumvudza organic plot decreased only marginally, from 900 kg to 600 kg, a 1.5-fold reduction. These results were shared with nearby communities and government extension officers.

During the FGD in Zimbabwe with FACHIG (Annex 2), farmers expressed that they are “*very likely*” to continue using agroecological practices as “*it improved food security and household income*”.

CTDT led a 2-year pilot study in the Mutoko district in Zimbabwe, spanning seasons 2021/2022 and 2022/2023, assessing yields and ROI for conventional farming and CA. The main crops used in this study were maize, cotton, groundnuts, sunflower, and sorghum. The study demonstrated that farmers are financially rewarded with CA as it minimises the costs associated with agronomic practices, fertilisers/ chemicals, land preparation, and husbandry practices. Within two years, CA outperformed conventional farming decisively:

- ROI: An average of 104% with CA versus 80% with conventional farming.
- Yield per ha: An average of 1.5 tonnes/ha with CA versus 1 tonnes/ha with conventional farming.
- Revenue per ha: An average of 570\$/ha with CA compared to 380\$/ha with conventional farming.

During the field day held in Mutoko during the workshop in April 2025 (Figure 9), the farmer outlined that thanks to agroecological methods, he was able to produce adequate, diverse, and nutritious food for his family and cope with climate variability and change. The family was able to obtain sufficient yield to be food self-sufficient even in drought years. By adopting sustainable farming practices, he was able to demonstrate nature’s ability to facilitate biodiversity conservation and environmental protection on the farm. The farmer practised SWC techniques, including, but not limited to, mulching, crop rotation, minimum tillage, the use of infiltration pits, the growing of drought-resistant crops, and crop diversification. The Nyawasha family grew sorghum, pearl millet, finger millet, groundnuts,

pumpkin, sunhemp, roundnuts, and cowpeas. They used drought-resistant varieties to cope with climate variability.



Figure 9: Field visit in the Mutoko district in April 2025 (photo by David Mingasson).

During the FGD in Mutoko district in Zimbabwe with CTDI, farmers highlighted that they are “very likely” to continue using agroecological practices as they strongly benefited from these techniques:

“The project was very important to our livelihoods because it gave us sustainable options for countering the effects of erratic rainfall and protecting our soil against massive land degradation. The adoption of agroecological farming practices minimised production-related costs for our crops, thus enabling us to make more profits (Netsai Musekiwa).” – Farmer from Mutoko, Zimbabwe (FGD with CTDI).

“We engaged in enhanced rainfed agriculture because it is cheaper due to the minimisation of the use of external inputs (ROI are therefore high).” Farmer from Mutoko, Zimbabwe (FGD with CTDI).

In FGDs, farmers reported that higher yields, which led to higher income, enabled them to open small businesses, creating employment opportunities.

“The project facilitated the unlocking of business opportunities for smallholder farmers in value addition and beneficiation of traditional grains and legumes through seed and food fairs, cook-out competitions and seed production. Exchange and learning visits have empowered farmers to manage their own enterprises and participate in local and national competitions such as the National Good Food and Seed Festival.” Farmer from Mudzi, Zimbabwe (FGD with CTDI).

“High yield led to improved income, hence starting other small businesses” Farmer from Eswazini, Malawi (FGD with Tiyeni).

“Drivers, cashiers, security guards, seed processors, and part-time work were created/ supported as part of TIARA-Zambezi”. Farmer from Petauke, Zambia (FGD with COMACO).

COMACO addressed the transformation of rainfed agriculture across Zambia with a different angle, focusing on digitalisation and farmer data management. The organisation updated its farmer database with critical information, including phone numbers, national IDs, and next of kin details. To support this effort, TIARA-Zambezi supported **the procurement of fifty smart tablets for cooperative leaders**, enabling more efficient data sharing and reporting on farmer adoption and compliance.

Thanks to the Rainfed Agriculture Investment Forum that TIARA-Zambezi helped organise in Gaborone (see (3.2.1), COMACO has strengthened its partnership with Rabobank through the ACORN project for agroforestry carbon markets. Enumerators and senior lead farmers continued GPS field mapping to onboard farmers onto this carbon accounting initiative, which focuses on *Gliricidia sepium* trees. As of 2023, more than **198 million** have been planted on farms to improve soil and boost yields.

Additionally, cooperative leaders received training in crop marketing procedures, data management, stock control, and record keeping. Mobile applications were developed to monitor farmer adoption, while orientation sessions introduced cooperative leaders to electronic farmer registers using their new tablets.

Based on FGDs conducted in Zimbabwe, Malawi, and Zambia, farmers identified both challenges and benefits of using agroecological practices. In the Mutoko district in Zimbabwe, served by CTD, a significant challenge emerged regarding the project's physical and temporal demands. Farmers noted that labour-intensive activities, such as digging infiltration pits and storm drains, placed a heavy burden on farmers. This was particularly acute for women, who managed the bulk of planting and weeding alongside these new tasks. Farmers also raised concerns about the proliferation of pests and diseases, including the bird scourge on pearl millet. In the Mudzi district, farmers, also supervised by CTD, identified the primary barriers to wider adoption as a lack of adequate tools and high labour requirements. Farmers highlighted their high illiteracy rate, which hampers the calculation of ROI and thus their credibility regarding agroecological practices. Farmers also stressed that, although applying the agroecological practices, the increased intensity and frequency of droughts are difficult to cope with.

“The water we harvest through infiltration pits, mulching and weir dams does not last the season for crops to reach physiological maturity. We have observed drying up of river (weir dams), boreholes, deep wells and wetland areas.” – Farmer from Mudzi, Zimbabwe, (FGD with CTD).

Farmers, served by FACHIG, from Mt. Darwin, Zimbabwe, observed that while the techniques were effective, the main barriers to expansion were *“laziness”* due to the labour-intensive nature of the techniques at first, a decline in armyworm infestations, and general

resistance to changing long-standing traditional farming habits. Similarly, farmers supported by Tiyezi in Mzimba, Malawi, reported that the initial phases were difficult due to inadequate resources and insufficient organic manure, which slowed the adoption of DBF. Farmers supervised by COMACO reported similar challenges, including a lack of tools, limited awareness and education, labour constraints, limited market access, high initial costs, and uncertain ROI.

To ensure long-term success and wider adoption of these interventions, the farmers identified several critical elements for the future. Farmers from Mutoko (CTDT) emphasised that overcoming barriers would require the introduction of small-scale mechanisation and the continuous use of multi-sectoral approaches involving the government and private sector, with a focus on infrastructure development, such as rural marketplaces, road networks, and mobile connectivity to link farmers to the digital economy. In the Mudzi district, farmers suggested that future efforts must focus on developing a business case for specific crop value chains, such as sorghum, and on using indigenous seed conservation practices, such as ash and herbs.

Farmers mentioned that it would be relevant to *“establish community demonstration plots to cascade the best practices, involve the private sector in fundraising initiatives, co-contributions, proposal development, inception and project roll-out, and develop simple manuals on ROI calculation”*. The collaboration between the farmers, the NGOs, and the extension staff/Ministry of Agriculture has also been particularly effective and is likely to yield positive results in future projects.

Generation of new scientific knowledge

TIARA-Zambezi identified several knowledge gaps that need to be addressed to scale up enhanced rainfed agriculture with NbS. First, there is a lack of agreed-upon indicators and metrics for measuring watershed impacts of larger investments, which works as a disincentive for investors. This is well illustrated by the efforts to mobilise investments to scale up DBF in the Lunyangwa sub-basin in Malawi, where the GIF committed USD750,000 to establish a baseline and monitoring framework before investing further.

The project, therefore, with support of a PostDoc from Malawi, based at Stockholm University, supported an analysis of nature-based investments in enhanced rainfed agriculture through soil-water metrics, using a comprehensive framework. The analysis addressed the critical challenge of underfunding in NbS by developing standardised, transparent verification metrics that can build investor confidence and mobilise capital. The framework, namely the Investment Framework for Verifying Soil-Water Nature-based Solution (IFVSW-NbS), integrated process-based modelling, such as the Lund Potsdam Jena managed Land (LPJmL), with remote sensing data to assess pre- and post-intervention performance across spatial scales. By focusing on soil-water processes, including Soil Organic Carbon (SOC), erosion rates, soil moisture, green water stress, streamflow, and moisture recycling, the authors established quantifiable links between agricultural practices and broader socioecological and economic outcomes. The research focused on the Lunyangwa watershed in Malawi, where DBF has been implemented and where additional investments are sought to scale up (Figure 10).

The research provided empirical evidence from global LPjImL modelling and local-scale analysis in Malawi's Lunyangwa watershed, demonstrating how NbS interventions can mitigate green water stress, improve soil moisture retention, SOC, and streamflow regulation.

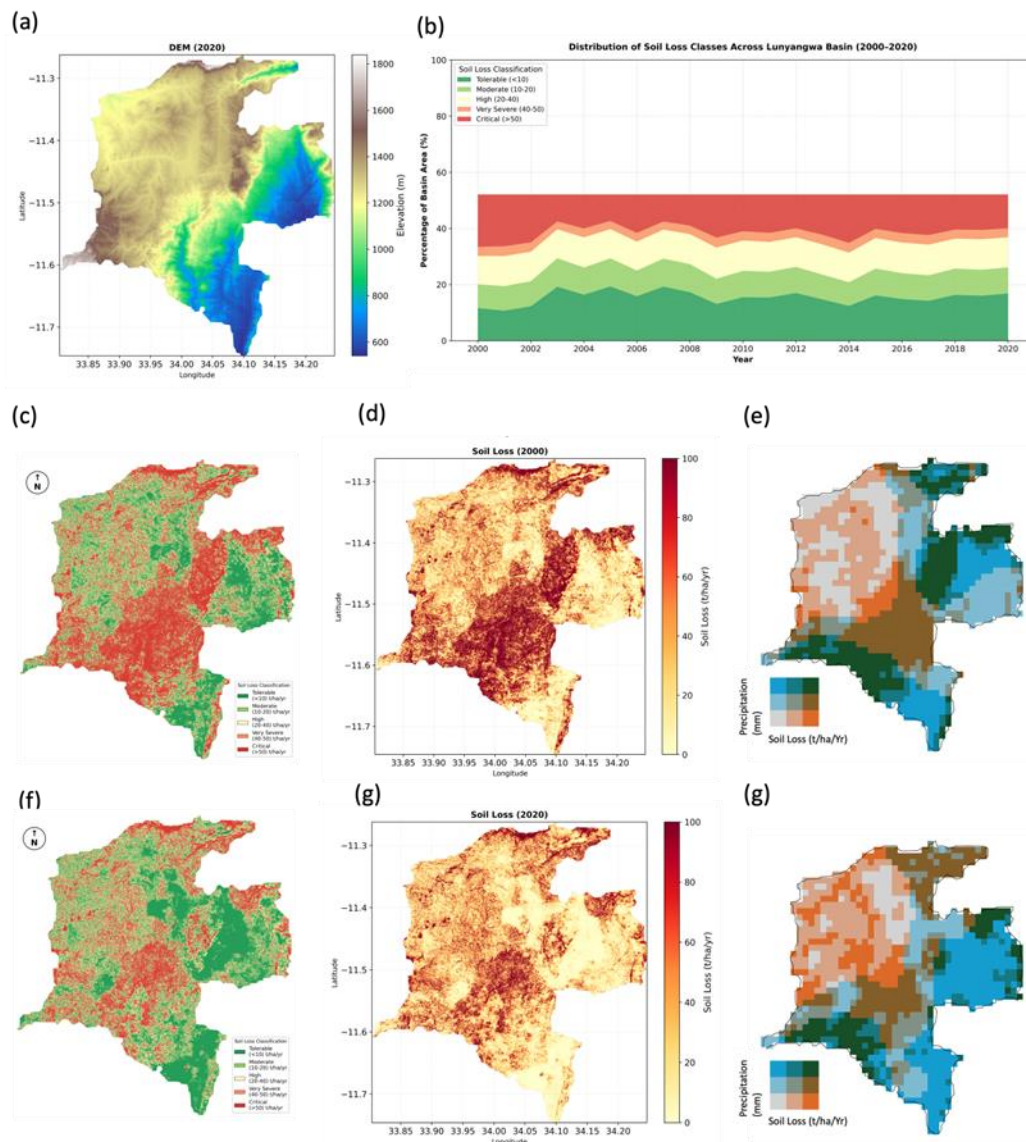


Figure 10: Spatial Soil Erosion Assessment for Lunyangwa Basin. The DEM (a), distribution of soil loss classes across the basin (b). Comparison of soil loss between year 2000 (c - e) and year 2020 (f - g), using the RUSLE model; Soil loss severity (c & f) Soil loss as proxy of soil degradation (d & g); and event-based bivariate plot of soil loss to precipitation (e & g) (Source: Maganizo et al., 2026. Verifying Nature-Based Investments: Application of Soil–Water Metrics for Sustainable Finance in enhanced Rainwater Agriculture, submitted manuscript).

The project has also developed a conceptual framework for applying the Triple Bottom Line (TBL) approach to rainfed agriculture (Figure 11), which will be published in a forthcoming SIWI report entitled: Triple Bottom Line Approach in Action: Lessons from rainfed agriculture in the Zambezi Basin (Maganizo et al., 2026).

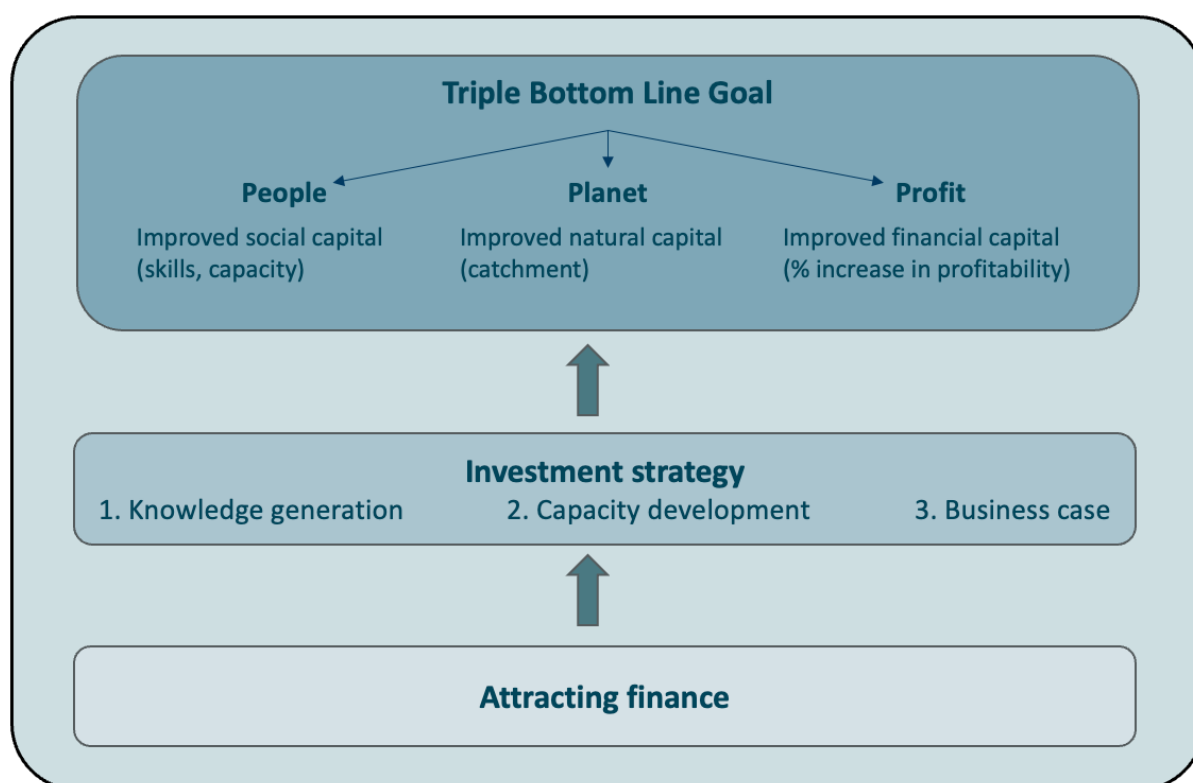


Figure 11: TIARA-Zambezi Investment Framework (adapted from Price and Hacker, 2009).

Although TBL assessments have become increasingly popular for measuring the sustainability of business models, no single standard approach has been developed to date. What they have in common is that they provide a composite measure of multiple objectives of importance, which need to be tracked and measured. There are three categories that ground the TBL approach (people, planet, profit):

- **People** – improved social capital, including skills and capacity to engage in agricultural value chains and markets with consideration to equity and inclusion of women, youth and indigenous groups.
- **Planet** – environmental benefits from improved soil and water management, building natural capital, such as enhanced water retention in soils, carbon storage in soils, reduced soil erosion and siltation of water bodies and biodiversity, and land productivity increases over time.
- **Profit** – increase in crop yields producing an ROI for the farmer and his family while providing greater resilience to climate change and a reduction in the risk of crop failure, resulting in improved financial capital.

The project also analysed the net value of major crops using the IIASA and FAO (2022) Global Agro-Ecological Zoning version 4 (GAEZ v4). From the remote-sensing analysis for the period 2015 – 2050, it was found that from the allotted cropland, the Zambezi Basin has approximately 400-600 \$/ha potential net value of production in rainfed agriculture from Major Cereal (wheat, maize, sorghum) (Figure 12.a). When compounded with supply chain, i.e., transport cost to the port, the net value of production of major crops, both food and commercial (i.e. Maize, sorghum, wheat, soybean, groundnut, oil palm, sugar cane, cassava, cotton (Figure 12.b)), the potential value can be as much as 100 \$/ha. Here, the net value of production is equally expressed as ROI.

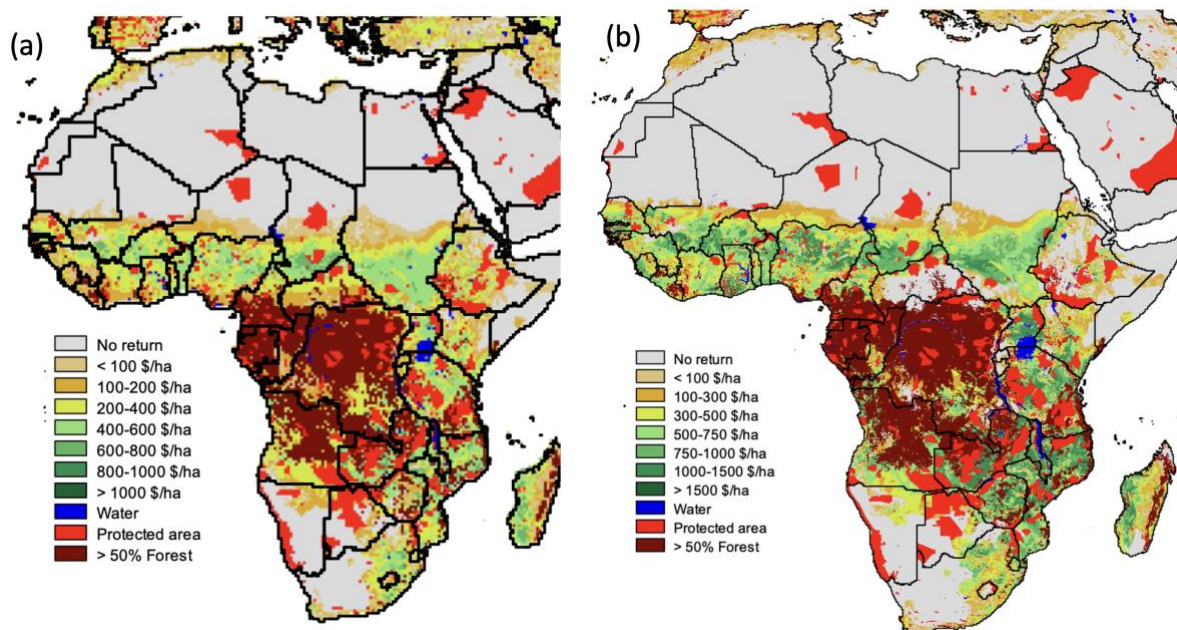


Figure 12: (a) Net value of production for major cereals, wheat, maize, and sorghum; (b) Net value of production including the cost to the seaport for major food and commercial crops, Maize, sorghum, wheat, soybean, groundnut, oil palm, sugar cane, cassava, cotton (Source: IIASA and FAO, 2022).

Overall, the transition to wider adoption of enhanced rainfed agriculture with NbS across all countries depends on balancing hard physical labour with mechanisation, improving market linkages, and ensuring constant technical support from extension services.

“We have gained experience, knowledge and investments that are in our community, and so we have a sustainability plan which is premised on a business model. Enhanced agriculture is diversified here with some ISAL Groups now engaged in Dairy Farming; hence, we are resilient and united.” – Farmer from Mudzi, Zimbabwe (FGD with CTDT).

It can thus be concluded that the project has made significant progress in developing a business case for enhanced rainfed agriculture that combines field monitoring by farmers with the development of conceptual frameworks and the use of remote sensing. However, these results are yet to be published and made publicly available.

3.2.2 Gender and youth representation, and human rights sensitivity of the results

The NGOs noted that women and youth have been central in TIARA-Zambezi, with FACHIG and Tiyeeni reporting a “strong impact” on women’s empowerment. CTDT highlighted that women have increasingly taken leadership positions with Farmer Field Schools (FFS) and CSB Management Committees. In the three countries, youth were actively engaged as trainees, interns, and even project officers, with some leveraging their involvement to invest in small businesses funded by their farming income. For FACHIG’s farmers, the project created *“casual employment for youth and women through potholing in Pfumvudza plots”*.

Women's participation in the project had a direct impact on their skills, while improved access to food directly addressed their needs and priorities. The gender-sensitive

approaches applied at the pilot sites have influenced other dimensions of women's development. These include enhanced capabilities in participation and leadership, thereby strengthening their empowerment in decision-making and the management of productive resources. As stressed in section 2.2, gender equity and youth inclusion were also reflected in the FGDs led by the NGOs:

- Zimbabwe (FACHIG): 9 women, 4 men
- Zimbabwe in Mudzi district (CTDT): 8 women, 16 men, 4 youth
- Zimbabwe in Mutoko district (CTDT): 13 women, 7 men, 4 youth
- Malawi (Tiyeni): 7 women, 3 men, 1 youth
- Zambia (COMACO): 19 women, 7 men.

Table 1, in section 2.2, highlights attendance of 56 women, 9 youth, and 37 men, totalling 102 participants, with a majority of women.

Through the pilot experiences, TIARA-Zambezi ensured equitable accessibility and distribution of project resources among women, men, and youth. In terms of direct adoption, beneficiaries of enhanced rainfed agricultural practices, NGOs reached more than 50% of women among the approximately 400 farmers trained. During field visits to the learning and knowledge-sharing workshops in Malawi, Zimbabwe, and Zambia, the project team predominantly interacted with women, as observed in Figure 13.



Figure 13: Field visit in an agroforestry plot in Zambia (photo by Charles Menda, photographer).

“Training on equipment operation, Farmer Field Schools practicals, replicated best practices on agroecology, women took leadership positions in FFS and Community Seed Bank Management Committees” – CTDT.

“Women and youth have been able to invest in small businesses in farming.” – Tiyeni.

“Poverty has been reduced, and young couples have benefited from better income.” – Farmer from Petauke, Zambia, (FGD with COMACO).

“The project improved access to finance for women’s groups through support for IGAs and ISAL activities. Farmers in the project areas can sell their seed to Champion Seeds. More than 60% of women are in leadership positions within farmer groups and can therefore make decisions on community affairs. At least 30% of women are lead farmers.” – Farmer from Mutoko, Zimbabwe, (FGD with CTD).

“The project has improved income for women and youth, giving the participants capital for opening businesses.” – Farmer from Eswazini, Malawi (FGD with Tiye).

“Women are now taking key leadership and decision-making roles at Farmer Field Schools (FFS), Community Seed Management, and other community positions such as secretary of Village Head, Chairperson of FFS/CSB/ISAL, and actively contesting in local political positions. The project has created new opportunities for women farmers in horticulture production, especially by diversifying their vegetable crops through in-situ water conservation works. However, the project has not created new opportunities for youth.” – Farmer from Mutoko, Zimbabwe (FGD with CTD).

“Both women and men are involved in activities related to enhanced rainfed agriculture, but men tend to be more involved in staple crop cultivation (e.g. maize, other cash crops such as beans and cotton) while women concentrate on small grains and legumes (e.g. finger millet and groundnuts). Labour-intensive activities (e.g., digging contours, storm drains, infiltration pits, transporting produce, operating machinery, etc.) are usually done by men, whilst women spend more time planting, weeding, and storing, among other activities. Whilst women spend most of their time doing agricultural activities, men are more involved in land preparation and marketing. On the other hand, youths are highly involved in market gardening activities, which they consider more profitable than dry land agriculture.” – Farmer from Mutoko, Zimbabwe, (FGD with CTD).

“However, the project has not created new opportunities for youth.” – Farmer from Mudzi, Zimbabwe, (FGD with CTD).

Farmers from the Mudzi district, Zimbabwe, supervised by CTD, highlighted adequate task distribution across groups as well as the stronger involvement of women compared to men and youth:

“Women are more involved in rain-fed activities than men and youths. Women typically handle land preparation, planting, weeding, harvesting and processing groundnuts into peanut butter. Men contribute to land preparation, weeding and cattle herding. Youths are mainly involved in cattle herding and weeding.” – Farmer from Mudzi, Zimbabwe (FGD with CTD).

Lastly, TIARA-Zambezi reduced resource-based conflicts related to food insecurity and land degradation through improved agricultural productivity.

“The project enabled better yield, income diversification, and enhanced household food and nutrition security” – Farmer from Mutoko, Zimbabwe (FGD with CTD).

Based on the above, we can conclude that the project led to significant progress in empowering vulnerable groups, in particular women, youth, and the poor, in enhanced rainfed agriculture, with women accessing leading positions. The advantages of enhanced rainfed agriculture have directly extended to women and youth: greater productivity, more resilient agricultural systems, and the promise of driving economic growth and transforming rural communities. It is, nevertheless, essential to uphold efforts towards gender equality and youth representation as they remain marginalised.

3.3 Project Efficiency

This section analyses the adequacy of the resources, management, organisational structure, implementation, and monitoring mechanisms, as per their category, to follow the ToC key processes and achieve the objectives of the intervention. The analysis corresponds to and complements the OECD DAC Efficiency criteria.

3.3.1 Financial efficiency and funding strategy

During the first year, the TIARA-Zambezi project experienced slow implementation due to delays in signing the MoU with ZAMCOM and COVID-related travel restrictions. In 2022 and 2023, the project focused on policy leadership and advocacy (section 3.2.1.1).

By the end of 2022, TIARA-Zambezi had formed partnerships with local NGOs in Zimbabwe (CTDT and FACHIG), Malawi (Tiyeni), and Zambia (COMACO), and pilot projects had already started in the field. In 2023, NGOs had already begun collecting empirical data on the ROI of enhanced rainfed agriculture. In 2024 and 2025, TIARA-Zambezi concentrated on capacity development (section 3.2.1.2) and knowledge generation and business case development (section 3.2.1.3). All financial reports were audited, and expenditures are coherent with the level of activity (Table 5):

Table 5: Expenditure vs budget per year of the evaluated period.

	2020-2021	2022	2023	2024	2025	Total
Budgeted (SEK)	3,579,860	2,570,058	1,955,000	1,955,000	2,180,100	12,240,018
Expended (SEK)	2,429,158	3,579,796	3,274,575	1,613,523	2,025,169	12,922,221
% of expenditure vs budget	68%	139%	167%	83%	93%	106%

The differences between the budget and expenditure are justified in the Annual Reports for each different budget line.

At the end of 2025 (Table 5), there was a 6% over-expenditure, which was offset by co-funding. Annex 7 shows that the objectives of the Sida programmatic support align with the TIARA-Zambezi project. This funding constituted a flexible mechanism to complement the LBF grant. ZAMCOM and the NGOs have also contributed to the project in-kind. SIWI also secured co-financing from the International Centre for Water Cooperation (ICWC), a UNESCO Category II Centre hosted by SIWI.

Most notably, the completion of the design of a Payment for Ecosystem Services (PES) scheme in the Lunyangwa sub-basin in Malawi led to a successful grant proposal funded by the GIF with USD750,000 to Tiyeni to scale up DBF. SIWI, through the TIARA-Zambezi project, has continued to work with Tiyeni to develop a monitoring scheme for the watershed benefits of the Lunyangwa PES scheme, using both field sampling and remote sensing.

3.3.2 Adequacy and efficiency of the institutional set-up and organisational arrangements

The project was initially hosted by SIWI's Africa Regional Centre (ARC) based in Pretoria, South Africa. The SIWI team in charge of managing the project and project communication was supported by a SIWI Senior Advisor based in Stockholm, strengthening scientific and technical support to the project; a consultant from ICRAF, contributing with technical and field expertise on rainfed agriculture in the Zambezi region; and four local NGOs working at pilot sites in Malawi, Zambia and Zimbabwe. The MoU with ZAMCOM enabled the project's institutional link with the countries of intervention and, globally, with the 8 riparian countries of the Zambezi watercourse.

However, the SIWI Board decided in February 2024 to close the ARC and to provide backstopping and support for its Africa portfolio directly from Stockholm, starting in July 2024. This initially created coordination challenges for the NGOs participating in TIARA-Zambezi and for ZAMCOM. Nevertheless, the move of the project support to Stockholm provided the opportunity to step up the technical and capacity development support and delegate more responsibility for exchange of knowledge in the field to the NGOs in Malawi, Zambia and Zimbabwe, where three knowledge exchange events and trainings were organised in the field between November 2024 and November 2025, one in each country.

In general, there has been positive feedback from stakeholders on the quality of project support and the adequacy of the approach to mobilising engagement and funding for enhanced rainfed agriculture. During FGDs, farmers expressed moderate to high satisfaction with the technical support provided by the NGOs.

It is important to note that the field demonstrations were cost-effective to develop because they leveraged the expertise of local NGOs leading ongoing projects that already had the backing of communities, local authorities, and extension services. TIARA-Zambezi supported these efforts by providing a standardised protocol for measurement and monitoring, ensuring full documentation of the production process, reliable data, and consistent, evidence-based conclusions. At the same time, the pilot projects built the capacities of smallholder farmers, extension services, and the NGOs themselves—all key actors in spreading good practices.

The financial resources for implementation are also considered limited since all related operational expenses cannot be covered. Farmers from each country highlighted the labour intensiveness of the operations, raising mechanization as a strong opportunity to scale up agroecological practices. Resources were not enabled to connect all farm production to commercialisation in markets, restricting financial benefits. FACHIG pilot cases appeared to have limited resources, hampering their data collection. Mainstreaming enhanced rainfed agriculture would also require more national and regional case studies, with enhanced rainfed practices implemented across different countries. Thus, additional resources would certainly improve the project's capacity for dialogue and engagement, as well as the quality and scope of implementation, leading to greater effectiveness. Lastly, the project team made a concerted effort to be strategic and cost-conscious in its resource use. This meant constantly evaluating how to achieve the project's objectives with maximum efficiency, avoiding unnecessary costs while ensuring that critical activities were well-supported to deliver meaningful results.

It can be concluded that, despite unexpected changes to project organisational arrangements and limited funding, the project was cost-effective and efficiently managed.

3.3.3 Efficiency of the project monitoring system

The NGOs submitted annual reports on the activities they conducted and the data they collected, including implementation challenges and key lessons learned. The reporting template was considered adequate and practical: simple, adaptable to NGOs' customary monitoring procedures, and comprehensive across the organisation's various levels. The reports were regularly discussed in meetings with SIWI, which constituted the main mechanism for communication.

Although the SIWI project support shifted from South Africa to Sweden, project monitoring continued, with frequent calls and exchanges to follow up on field implementation and knowledge generation and exchange.

Building on the MTE's findings, which noted an unclear distinction between outputs and outcomes, the project team improved and reorganised these components accordingly in the ToR (Annex 8). Outcomes were disaggregated into three categories: (1) Policy leadership and advocacy, (2) Capacity development, and (3) Knowledge generation and business case development. Strategic activities, outputs, and KPIs were developed to track and measure progress of the project with credible, understandable, and reliable indicators, such as the ROI, number of farming communities at hotspots in the Zambezi basin benefiting from more investments, and training material available on the landscape approach, adapted to the Zambezi basin, to enhance rainfed agriculture practices.

In conclusion, the lack of clarity in TIARA-Zambezi outcomes identified in the MTE was addressed by the project team, which provided a clearer trajectory for monitoring objectives with strategic KPIs.

Additional measurements could include gender indicators, such as the number and type of leading positions occupied by women, the size of land accessed by women and youth, the

financial capital acquired disaggregated by gender, and the use and control of household resources.

4. Project Impact

This section focuses on the “*Impact*” criteria of the OECD DAC to examine the significant positive and negative, intended and unintended changes that resulted from the project’s implementation. It is structured into (1) Policy leadership and advocacy, (2) Risks and benefits/ ROI of enhanced rainfed agriculture, (3) A cadre of multi-disciplinary champions with the attitude, skills and knowledge to implement enhanced rainfed agriculture.

4.1.1 Policy leadership and advocacy

The ZAMCOM Statement of Intent on Rainfed Agriculture (Figure 4), approved by the ZAMCOM Council of Ministers, confirms the high-level commitment to enhanced rainfed agriculture. ZAMCOM has successfully leveraged TIARA-Zambezi to transform rainfed agriculture into a bankable investment priority. By utilising SIWI’s “business case” and technical metrics, ZAMCOM secured a \$10.57 million GEF grant for community resilience and integrated rainfed strategies into a massive \$703 million transboundary investment plan funded by the African Development Bank and World Bank. Additionally, the project facilitated a Global Innovation Fund grant for scaling Deep Bed Farming in Malawi. This transition from pilot to large-scale climate finance demonstrates how TIARA-Zambezi’s advocacy and data effectively de-risked nature-based solutions for major international donors.

In addition, Government representatives who attended workshops in Malawi, Zimbabwe, and Zambia demonstrated a strong interest in enhanced rainfed agriculture based on the benefits of agroecological practices and NbS presented by the local NGOs and demonstration farmers. This is a positive impact, as Governments can help scale up enhanced rainfed agriculture at local, national, and regional levels.

The advocacy conducted at ZAMCOM regional level, as well as at the global level, through the WWW to strengthen investments in rainfed agriculture, contributed to policy development at national level, as evidenced by the participation and statements of the Government of Malawi (Francis, Munthali, Northern Region Water Board of Malawi; MacPherson, Nthara, Deputy Director of Land Resources Conservation) in the [2025 WWW session](#).

As mentioned above, a concept note submitted by SIWI to the GIF in 2024 for a Payments for Ecosystem Services (PES) scheme in Malawi’s Lunyangwa basin, a sub-basin of the Zambezi River, led to a significant investment in DBF (see sections 3.2.1.3 and 3.3.1). To secure additional funding, GIF required stronger evidence of socio-economic and watershed benefits of DBF. In response, SIWI, Tiyeni, and BaseFlow identified key indicators and metrics to measure benefits for local communities and the environment. This has supported the project’s long-term aim of scaling agroecological practices and NbS across the Zambezi basin by generating credible scientific evidence for enhanced rainfed agriculture.

4.1.2 Risks and benefits

Field data collection, presented in section 3.2.1, enabled the quantification of the risks and benefits, and the ROI of enhanced rainfed agriculture with NbS, and understanding key bottlenecks, and gaps. The three NGOs reported that climate factors and uncertain ROI were the two most common barriers for farmers when implementing new agricultural practices. Lack of tools, limited awareness and education, poor access to inputs, labour constraints, and high initial costs are also important challenges faced by farmers.

The challenges and barriers, as well as the recommendations from the farmers are aligned with the insights provided by the local NGOs, demonstrating the deep understanding, and the increased awareness of farmers. Results also provided farmers with field-based evidence of the effectiveness of enhanced rainfed agriculture and that it enhances climate resilience, with significant benefits for people, profit, and the planet (using the TBL framework).

4.1.3 A cadre of multi-disciplinary champions

TIARA-Zambezi created a cadre of multi-disciplinary champions with the attitude, skills and knowledge to implement enhanced rainfed agriculture. Knowledge products have strengthened and taught NGOs skills and knowledge on green water management, and on how to implement and collect data on enhanced rainfed agriculture and NbS techniques. In turn, NGOs equipped farmers with adequate skills and knowledge to use the enhanced practices, and trained them in how to transfer the knowledge to neighbouring farmers and communities.

Stakeholder dialogues at local and regional levels in the participating countries led to increased commitments for enhanced rainfed agriculture at the basin/ country level, with 4,000 direct beneficiaries, and 20,000 indirect beneficiaries at hotspots adopting enhanced rainfed agriculture and NbS practices. The diversity and complementarity of the agroecological practices developed by the NGOs, and the empowerment of vulnerable groups, in particular women, youth, and the poor, are also significant achievements.

All NGOs asserted that the project has improved collaboration between farmers, government, and the private sector, through field days, seed companies' partnerships, and selection of project sites. The NGOs expressed that the most effective collaborations/ partnerships were with ZAMCOM, donors, local leadership, farmers, government and the private sector, exhibiting the strong need for continued support to multi-stakeholder approaches (Annex 3 – data available upon request).

5. Project Sustainability

The section addresses the environmental, social, and economic sustainability of the project.

“Long-term sustainability is guaranteed because enhanced rainfed agriculture practices have so many benefits on the economic, ecological and social fronts. The promoted practices are easy to use, practical, less costly and sustainable.” – Farmer from Mutoko, Zimbabwe (FGD with CTD).

5.1.1 Environmental Sustainability

Field data monitoring, presented in section 3.2.1, provided evidence on the resilience of enhanced rainfed agriculture to climate stresses compared to conventional practices, which convinced farmers to scale up agroecological practices as they regularly face extreme climate events such as drought, heavy rainfalls, and floods. Based on the project experiences with field monitoring and the development of the project proposal for GIF, it became clear that an agreed monitoring framework is needed on soil-water metrics for watershed monitoring of impacts of enhanced rainfed agriculture. Applying the TBL framework developed by the project (Figure 11) should also enhance environmental sustainability. It captures environmental benefits from improved soil and water management, building natural capital related to enhanced water retention in soils, carbon storage in soils, reduced soil erosion and siltation of water bodies, and land productivity increases over time. Overall, environmental sustainability is rated as moderately high, contingent on continued local ownership and adaptive management.

5.1.2 Social Sustainability

FFS, CSB and peer-to-peer learning networks established under the project have created durable platforms for knowledge exchange. During the learning and knowledge exchange in Malawi, Zimbabwe, and Zambia, women outnumbered men as leaders of field visits, indicating emerging local leadership capacity. Local NGOs have demonstrated the ability to mobilise members, coordinate activities, and manage internal resources without direct project supervision. Materials and knowledge products developed throughout the project will remain accessible to the NGOs, offering long-term technical support and guidance after the project phases out. The project's exit strategy provided handover of responsibilities to local NGOs. During FGDs, all farmers expressed their interest in continuing to use enhanced rainfed agricultural practices beyond the project (Annex 2 – data available upon request). This is a success of the project, as the associated environmental benefits, such as improvements to soil health, water availability, groundwater recharge, and carbon sequestration, will continue in the long-term.

Gender-sensitive approaches were integrated into community-level structures. Women's participation in decision-making bodies increased, and workload distribution has been explicitly addressed through project design. However, the sustainability of these achievements depends on whether local laws, and institutions protect women, for instance, in accessing land. The project has documented that addressing gender issues, including land access, capacity development, and involvement, is instrumental for a lasting change.

Social cohesion and trust have been improved through collaborative activities such as joint field visits, group training, and cross-border learning exchanges. The involvement of ZAMCOM at the regional level has fostered cooperation across national borders, reducing the potential for transboundary resource conflicts. Community interest and ownership were expressed through farmers' willingness to contribute labour and local materials to project activities.

Social sustainability is rated as high, with a substantial increase in the capacity of local NGOs, and farmer communities, as well as improved inclusion of women and youth.

5.1.3 Economic Sustainability

Household income gained from enhanced rainfed agriculture has been documented in project intervention areas (see section 3.2.1). Reduced input costs resulting from SOC enrichment and improved soil moisture have increased the profit margins of farmers. Farmers and NGOs mentioned that the project contributed to employment opportunities, and the rural economy (Annex 2 and 3 – data available upon request). However, these gains depend on the continuous use of enhanced practices and NbS, and support from the NGOs. Although the project has piloted linkages with savings groups and supported safe and reliable investments, for instance, with seeds placed in CSB, credit remains a constraint for farmers. ROI indicators developed by the project demonstrated the economic viability of enhanced rainfed agriculture with NbS. The IFVSW-NbS, which translates biophysical metrics into financial terms, supports sustainable investment decisions by delivering positive returns. PES mechanisms could extend beyond the Lunyangwa basin and provide ongoing revenue streams for maintaining agroecological practices. However, these types of projects are rare in the Zambezi region and require further development.

The LBF and other funding partners have supported demonstrations or early-stage investments in NbS. However, scaling requires additional financial capital. The NGOs have expressed their interest in scaling up enhanced rainfed agriculture and have therefore been very active in seeking new opportunities. They created a positive dynamic by frequently sharing grant applications to join forces and develop a new TIARA-Zambezi phase. For instance, the NGOs have investigated IKI grants, TripleFunds, and ICRAF is currently initiating contact with the Global Environment Facility (GEF) to apply for a medium-sized project to scale up some of the TIARA-Zambezi work. Economic sustainability is rated as moderate to high, with greater emphasis on places where market linkages are well established.

6. Lessons learned

This chapter starts with synthesising lessons from the field gathered through the FGDs and the questionnaire disseminated to the NGOs, followed by an analysis of lessons learned by SIWI and the self-evaluation team. Lessons from the local NGOs and FGDs included:

1. **Market linkages and agribusiness development:** Developing market linkages and agribusiness proved key to enhancing farmers' livelihoods and the rural economy. Multi-stakeholder approaches enabled the co-creation of solutions rooted in local reality and ready for scaling.
2. **Addressing labour constraints:** Mechanisation was found necessary to supplement agroecological practices as NbS were labour-intensive for smallholder farmers.
3. **Policy changes as a long-term process:** The project's engagement with policy institutions, including ZAMCOM at the regional level, demonstrated that policy change requires continuous collaboration with a case-by-case approach to tailor activities to each country's specific political and institutional context.

4. **Harmonised indicators for monitoring:** Field implementation across the project's three countries should be monitored with adequate, understandable, and harmonised indicators and metrics. A data-driven approach proved essential to attract sustainable financing.
5. **Unified multi-country collaboration:** Malawi, Zimbabwe, and Zambia should continue to unify their forces to learn from one another and tackle complex challenges that require synergistic solutions, as achieved through regional platforms such as ZAMCOM.

“Collective action, therefore, entails addressing issues around motivation, incentives, rewards, leadership, communication, connections and enabling policy.” – Nobleman Zvirevo, CTDI.

SIWI's lessons from the project come from experiences with the implementation of the main project components and project management:

1. **Lessons learned for strengthening the enabling environment** for enhanced rainfed agriculture and NbS:
 - At the local level, enabling conditions can be strengthened through outreach to and engagement of government agricultural extension officers in field days and demonstration activities.
 - Cross-sectoral coordination mechanisms, particularly between agriculture and water governance institutions, are necessary to develop an integrated policy framework to avoid a siloed approach
 - Linking regional policy dialogue platforms and fora, such as ZAMCOM, with local partners, such as the NGOs engaged in the project, to create awareness of the potential of enhanced rainfed agriculture and the need to enhance investments in sustainable practices and NbS was highly successful.
 - Outreach at the global level (through the WWW) to international partners and financial institutions created awareness and the conditions for replicating the approach in other river basins.
2. **Lessons learned for capacity development** of different types of stakeholders
 - Working with and empowering demonstration farmers, especially women and youth, can strengthen the capacity of the whole farming community through field days.
 - Training-of-trainers (champions) based on well-designed training manuals and case studies, who, in turn, train local communities and the agricultural extension service, is an efficient way of strengthening capacity on enhanced rainfed agriculture.
 - Enhanced rainfed agriculture with NbS also ensures stronger resilience to climate-induced events:

“The largest amount of water resources are found in green water, thus, efforts should concentrate on climate-resilient water governance and sustainable landscape management” – Malesu Maimbo, ICRAF.

- South-south exchanges of field experiences and technical knowledge are very effective in strengthening the capacity and motivation of local partners in the field to test enhanced practices for rainfed agriculture (i.e. the NGOs the project worked with in Malawi, Zambia and Zimbabwe). These visits have laid the ground for a regional “*business case*” for rainfed agriculture, aiming to attract future investment into enhanced rainfed agriculture in the Zambezi basin.
- Capacity development must extend beyond technical agriculture training to include financial literacy and business management skills. Integrating basic financial training into FFS can increase farmers’ skills in record-keeping, savings, or credit management skills, translating agricultural productivity gains into sustained livelihood improvements.
- Digital tools, including mobile-based messaging platforms and simple data collection applications, can significantly enhance the reach and cost-effectiveness of capacity development efforts.

3. Lessons learned for the business case and scaling up of enhanced rainfed agriculture:

- Enhanced rainfed agriculture through NbS is an effective solution offering financial, social, and environmental benefits, including, but not limited to, higher ROI than conventional farming practices, increased yield, increased livelihoods, food security, and improved soil moisture.
- Field monitoring by local demonstration farmers using standard protocols (i.e. citizen science) are very useful in demonstrating benefits to local stakeholders and strengthening ownership by motivating them to invest labour and efforts in enhanced rainfed agriculture.
- However, to attract larger investments from finance institutions (e.g. GIF in Malawi), there is a need for agreed metrics and indicators for monitoring of watershed impacts of investments and to combine citizen science with other types of measurements using more advanced equipment and remote sensing (satellite data).

4. Lessons learned for efficient project management

- Due diligence and careful selection of partners were crucial. The project carried out a thorough stakeholder analysis of different actors in the selected hotspots.
- Adaptive management is crucial in times of change, such as the restructuring of SIWI, and showed that more delegation of responsibility to partners in the field, the local NGOs in Malawi, Zambia and Zimbabwe, created a new momentum for the project and enhanced south-south collaboration and exchange of knowledge.
- Regular coordination meetings (physically or virtually) improve project performance by early identification of challenges, sharing solutions, and adjusting work plans.

- Distributed leadership models that rotate coordination responsibilities among partners build shared ownership and reduce dependency on any single organization. Rotating facilitation of regional exchanges across countries strengthens peer accountability.

7. Conclusion

The project resulted in a more favourable enabling environment for rainfed agriculture, despite significant resistance and poor recognition towards the concept of supporting enhanced rainfed agriculture at the start. The project also resulted in capacity development at both local and multi-country levels in enhanced rainfed agriculture and application of NbS practices. The project has made significant progress in developing a business case for enhanced rainfed agriculture that combines field monitoring by farmers with the development of conceptual frameworks and remote sensing. Project results show a significant increase in yields and return on investment, thanks to improved practices and NbS that increase the resilience and food security of local communities. The project was cost-effective and efficiently managed despite SIWI's restructuring, which posed some challenges. A limited amount of funding was used to leverage additional resources to support enhanced rainfed agriculture with NbS in the Zambezi basin and beyond.

The overall evaluation results are assessed using a rating scale from Highly Unsatisfactory (HU), Unsatisfactory (U), Moderately Satisfactory (MS), Satisfactory (S) to Highly Satisfactory (HS) (Table 6). The evaluation was conducted by three different groups:

- The Self-assessment team: David Mingasson (SIWI), and Anna Tengberg (SIWI)
- An independent reviewer partner of the project: Malesu Maimbo (ICRAF)
- An independent reviewer uninvolved in the project: Alice Jaraiseh (SIWI).

Table 6: Evaluation using a rating scale from Highly Unsatisfactory (HU), Unsatisfactory (U), Moderately Satisfactory (MS), Satisfactory (S) to Highly Satisfactory (HS).

Evaluation criteria	Self-assessment	Assessment ICRAF	Assessment SIWI M&E
Relevance	HS	HS	HS
Effectiveness:			
Political Leadership and Advocacy	S <u>Comment:</u> Regional and local leadership has been strong through ZAMCOM and local NGOs and communities. National leadership was not so strong.	HS <u>Comment:</u> ZAMCOM has successfully leveraged the TIARA initiative to transform rainfed agriculture into a bankable investment priority, illustrated by the access to GEF and GIF grant.	S
Capacity Development	HS	HS <u>Comment:</u> The project achieved remarkable success in capacity building by transitioning from traditional training to a multidisciplinary "Champion" model. By empowering 811 lead farmers—over 50% of whom are women—the initiative successfully cascaded knowledge to 20,000 households. This peer-to-peer approach, supported by regional knowledge-sharing platforms, ensures technical expertise remains embedded within local institutions.	HS
Knowledge Generation and Business Case Development	S	S <u>Comment:</u> The project achieved satisfactory results by turning complex agro-ecological data into a "bankable" narrative. Using high-res modelling and field ROI data, TIARA de-risked NbS and secured millions in funding from the GEF and the GIF.	S
Efficiency:			
Management Arrangements	MS <u>Comment:</u>	S	S <u>Comment:</u> This is also Satisfactory since the ownership among partners within the

	The closure of SIWI's Africa Regional Centre led to a reset of relationships with partners in the region.		countries got stronger by the competent management arrangements under the leadership of the SIWI Stockholm office.
Financial Management	S	HS <u>Comment:</u> SIWI showed strong financial management by staying within budget and leveraging project data to secure millions in external climate finance. Their skill in managing complex sub-grants across countries, while adhering to procurement standards, maximizes value and promotes long-term sustainability.	HS <u>Comment:</u> This is Highly Satisfactory with clean project audits and the fact that the project managed to raise additional support from other funding sources.
Progress towards impact	S	HS <u>Comment:</u> Progress is rated Highly Satisfactory. TIARA-Zambezi moved from local pilots to basin-wide impact, evident in ZAMCOM's policy changes and multi-million-dollar grants. The project redefined rainfed agriculture as a high-return, nature-based investment across the Zambezi region	HS
Sustainability	S	S <u>Comment:</u> The project successfully transitioned from external funding to long-term regional ownership via ZAMCOM. By leveraging major climate grants and empowering a cadre of local "champions," TIARA-Zambezi has ensured that its nature-based solutions are financially and institutionally anchored beyond 2026	S
Gender and Human Rights	S	HS <u>Comment:</u> The project mainstreamed gender and human rights, with over 50% women participants in leadership roles. TIARA-Zambezi turned marginalized farmers into "front-line water	S

		managers," operationalising a rights-based approach to food security and economic empowerment.	
Overall rating	S	HS TIARA-Zambezi bridged the "science-policy-finance" gap, creating a de-risked, bankable rainfed agriculture framework that secured multi-million-dollar investments, ensuring resilience for Zambezi Basin smallholders. It offers an outstanding donor return.	S/HS

The overall rating of the project is Satisfactory to Highly Satisfactory based on the ratings in Table 6. There were some challenges related to project management caused by the restructuring of SIWI, but the project was strong on capacity development, financial management and progress towards impact. The project successfully transitioned from external funding to long-term regional ownership and empowerment, and moved from local pilots to basin-wide impact. The project redefined rainfed agriculture as a high-return, nature-based investment across the Zambezi region, benefiting both people and nature.

8. Annexes

Annex 01. Evaluation matrix

Evaluation criteria	Evaluation questions	Judgement criteria/indicators	Sources of information and tools	Report section for quality checks
DESIGN: Examination of the validity of the theoretical model of the intervention (and its adaptations) in relation to the context and issues addressed and correspondence of the formulation and planning.				3.1 Project Relevance
Relevance Extent to which the intervention objectives and design respond to right holders, partners and institutions needs and priorities	1. Is the overall project design (including selection of objectives, outcomes and activities) appropriate and tailored to the needs of the population, stakeholders and context (including gender and human rights analysis)?	Project design is based on the identification of the needs and priorities of the different stakeholders oriented to satisfy food security, market access, income-generating activities, and livelihoods, related fundamental rights of the targeted population. Differentiated recognition of needs and priorities of women and men, and those of other vulnerable groups and proposes appropriate responses. Positive perception of the different stakeholders regarding the appropriateness of the project to respond to their needs and context challenges.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Responsiveness to population, stakeholder, and context needs

2. How well articulated are the outcomes of the intervention and the strategies proposed to influence policy and investments for rainfed agriculture at policy and basin levels? What are the strengths and weaknesses, how planning could be improved?	The structure of the project (objectives, results, indicators and strategies proposed) is well defined and supported by a solid theory of change oriented to influence policy, investments, align with national and international development priorities such as, the 2030 Agenda and Sustainable Development Goals. Positive perception of the different stakeholders regarding the appropriateness of the project to influence policy and investments	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Articulation to influence policy and investments at country and basin levels.
3. Did the project design take into consideration and clearly address the cross-cutting issues? What were the strengths and weaknesses, how planning could be improved?	Specific identification of vulnerabilities related to crosscutting issues, and development of appropriate mitigation strategies	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Integration of cross-cutting issues

RESULTS: Examination of the outcomes induced by the interventions.

3.2 Project Results and Effectiveness

Effectiveness Extent to which the intervention achieved, or is expected to achieve, its objectives and its results, including any differential results across groups	1. To what extent is the project achieving (or has achieved) planned outputs and outcomes? How are the change processes occurring? which lessons learnt can be drawn?	Positive perception of stakeholders in relation to the effectiveness of the intervention methodologies. Development of an enabling environment. Degree of implementation of activities and identification of induced changes as per the expected outputs, outcomes, and components (compliance with indicators). Perception of stakeholders involved regarding the processes of change.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Outputs, outcomes, and processes of change
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	2. What are the main constraints encountered in making progress towards planned outputs and outcomes? What are the underlying causes and possible corrective actions?	Perception of stakeholders involved regarding the processes of change.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Outputs, outcomes, and processes of change
	3. Are achieved outputs and outcomes gender and human rights responsive? Is there general acceptance of the achieved outputs and outcomes by the right holders, partners and institutions involved?	Recognition and positive perception of the achieved outputs and outcomes by the stakeholders involved. Recognition of project contribution to influence gender and youth representation, and human rights. Allocation of resources corresponding to an equitable orientation of benefits.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Gender and human rights responsiveness of the results. Cross-cutting issues incorporation.
STRUCTURE AND PROCESSES: Adequacy of the resources, management, organizational structure and implementation and monitoring mechanisms to trigger ToC key processes and achieve the objectives of the intervention.				3.3 Project Efficiency
Efficiency Extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way	1. How well has the project used its resources to trigger key processes to influence policy and investments, capacity development, and the business case for rainfed agriculture? Could the project have been conducted more efficiently?	Orientation of resources to the key change processes presented in the ToC. Positive perception of the different stakeholders regarding the use of project resources	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Use of resources to ToC key processes
	2. Are the project institutional set-up and organizational arrangements (including the project team) appropriate and efficient? What are the strengths and weaknesses and how could they be improved?	Clear structuring of the organization chart and in accordance with the needs of the project. Organizational arrangements enable a fluid and concerted decision-making and implementation.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Organizational arrangements adequacy

		Positive perception of stakeholders regarding quality and efficiency of implementation and decision-making mechanisms		
	3. Does the monitoring system (including dedicated tools) appropriately inform the processes of change and allow feedback into project implementation? What are the strengths and weaknesses and how could they be improved?	Appropriateness of the monitoring system to inform the processes of change, feeding back into project implementation.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Monitoring system performance
	4. Are the environmental compliance and cross-cutting aspects being adequately incorporated and contributing to the foreseen transformations? What elements are key for the transformations or, on the contrary, constitute a limitation?	Management decisions are taking into consideration environmental and cross-cutting aspect. Stakeholders' recognition of the positive contribution of environmental and cross-cutting aspects to project results	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Cross-cutting issues incorporation and equitable distribution of benefits
IMPACTS: Examination of the impacts induced by the interventions.				3.4 Project Impact
Impact Extent to which the intervention is expected to generate, or has generated, significant positive or negative, intended or unintended, higher-level effects.	1. What are the ultimate effects—both positive and negative—of the intervention?	A real and significant improvement on the three project components ((1) Policy advocacy and leadership, (2) Capacity development, and (3) Knowledge generation and the business case) compared to the baseline situation.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Impact assessment

	2. To what extent has the initiative generated transformative effects on a large scale?	A structural, institutional, or regulatory change that is long-lasting.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Impact assessment
	3. What were the side effects or unintended consequences (positive or negative) of the action?	Unanticipated negative effects have been identified and addressed; unanticipated positive effects are documented and leveraged.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Impact assessment
	4. To what extent can the observed change be attributed to the intervention?	The change observed is directly linked to the project's activities and would not have occurred (or would have occurred more slowly) without it.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Impact assessment
SUSTAINABILITY: Examination of the sustainability of the intervention.				3.5 Project Sustainability
Sustainability Extent to which the positive outcomes of an intervention will endure over the long term.	1. To what extent will the benefits (environmental, social, economic) of the intervention continue once external funding ends?	These positive results (environmental, social, economic) continue to generate value for beneficiaries without the need for additional external funding. Changes on stakeholders' perceptions, attitudes and capacities on enhanced rainfed agriculture and its long-term effects.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Trends for a sustainable impact

2. Do local stakeholders (communities, the NGOs, the government, partners) have the capacity and willingness to take ownership of the results?	Changes on stakeholders' perceptions, attitudes and capacities on enhanced rainfed agriculture and its long-term effects. Perception of stakeholders involved regarding the processes of change. Trends of positive incidence of the project on power dynamics, other determinants of discrimination and risks over crosscutting aspects.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Trends for a sustainable impact
3. Is the initiative sufficiently integrated into local policies, laws, and institutions?	The project is embedded in national systems, laws, or government budgets.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Trends for a sustainable impact
4. What are the main risks (financial, environmental, political) that could jeopardize the sustainability of the results?	Benefits remain steady despite changes in the economic, climatic, or political landscape.	Desk review; Group discussion with Project team during workshops; Questionnaire to local partners; Focus Group Discussions with farmers.	Trends for a sustainable impact

Annex 02. Focus Group Discussion (FGD) template

TIARA Project Focus Group Discussion

Purpose

To collect perceptions and collective insights from farmers, women's groups, youth associations, cooperatives and community leaders on the relevance, effectiveness and impact of TIARA interventions on enhanced rainfed agriculture in the Zambezi Watercourse as part of the self-assessment and the Triple Bottom Line whitepaper. The discussion will take 2 - 3 hrs.

SECTION A: General Information

Variable	Description
Interview start time	
FGD Date	
Location/District/Village	
Enumerators	
Group Type	☐ Farmers ☐ Mixed ☐ Local Leaders
FGD participants (attach register disaggregated by gender)	Number of males= Number of females= Youth =
Agroecological zone	

SECTION B: Awareness and understanding of enhanced rainfed agriculture

- Please introduce yourself and tell us how long you have been involved in activities under the TIARA Project (name of organisation)? How many participants have heard about enhanced rainfed agriculture promoted by the NGOs?
- What were the main challenges your community was facing before the project started?

Context and time	Past situations	Current situation	Impact on production systems	Impact on crop diversity
Climate				
Infrastructure				
Market access				
Socio-economic changes				
Public and private support				
NGO Interventions				

3. How important do you think the project is to your current livelihood needs?
4. How would participants rate their understanding of enhanced rainfed agriculture?
☐ 1 (Very low) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Excellent)
5. Through which channels did participants first learn about enhanced rainfed agriculture?

Channels	Score
Extension Officers	
Village meetings	
Radio	
Local leaders	
Project Staff	
Farmer networks	
Others	

6. How have women, men and youth been involved in activities related to enhanced rainfed agriculture? What is new? Are there some still left out? Why?
7. How often do you attend trainings or meetings on enhanced rainfed agricultural practices?
☐ Weekly ☐ Every second week ☐ Monthly ☐ Quarterly ☐ Yearly ☐ Once ☐ Never

SECTION C: Project Implementation and Community Participation

8. Why did you decide to focus on enhanced rainfed agriculture? Were the reasons economic, environmental, or social?
9. What significant changes have occurred in your household or community because of the project?
10. Which specific activities have been implemented in your area? (*select all that apply*)

Activity selected	Score
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Water harvesting structures	
Conservation agriculture	
Agroforestry practices	
Farmer field schools	
Livelihood diversification (SME, Value Chains)	
Climate-smart training	
Others (specify):	

11. What specific practices have improved your yields, nutrition and soil health? Rank score as % of Households.

Agricultural practice							
Agronomic measures [Score]		Vegetative measures [Score]		Structural measures [Score]		Management Measure [Score]	
Mulching		Agroforestry		Terraces and bunds		Mixed cropping	
Organic manuring		Live fences and tree crows		Dams and pans		Diversity wheel	
Conservation tillage		Grass strips		Wall/barriers and palisades		Community seed bank	
Deep ripping				Rainwater harvesting		Change of landuse type(from forest to agroforestry or grazing to cut and carry	
Pfumvudza				Water efficient irrigation systems		Change of management/intensity level (from mono-cropping to rotational cropping)	
Deep bed farming						Change in timing of activities (vegetable farming in a green house or along the water streams)	
Infiltration pits						Control or change of plant species variety composition	

12. When did you start implementing these techniques?

13. How satisfied are you with the technical support received (from extension workers, NGOs)?

Institution identified	Type of service	Strengths	Weaknesses	Level of satisfaction (1 very dissatisfied -- --5 very satisfied)

14. How likely are you to continue with the promoted practices after the project ends?

☐ 1 (Very unlikely) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (very likely)

15. Please briefly explain the main reason for your answer.

16. What was helpful in the process of implementing these practices?

17. What were the most common challenges encountered in implementing new agricultural practices?

18. How to overcome these barriers?

19. How would you rate the collaboration among different actors (community, extension, NGOs, private sector)?

Response: (1=weak collaboration, 5=very strong collaboration)

Actor	Rating
Community	
Extension	
NGOs	
Private Sector	

SECTION D: Economic and Livelihood Outcomes

20. Since the project started, how have crop yields changed?

21. How have your livelihood/ financial capital benefited from these crop yield changes?

22. Has the project created or supported any local businesses or employment opportunities?

If yes, please estimate how many? Which ones?

23. Rate the extent to which the project has improved access to markets or income-generating activities?

☐ 1 (Not improved) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Highly improved)

24. What are the top three crops or value chains most positively affected?

Crops	Uses of the crops	% of HH cultivating the crop	% of land allocation	% of HH labour allocation	Ranking by preferences	
					Male	Female
1						
2						
3						

25. What form of ownership do you have of the land you farm on?

- A) Customary tenure
- B) Freehold tenure
- C) Leasehold tenure
- D) State ownership
- E) Private land (title deed)
- F) Community land
- G) Concession

SECTION E: Gender, Youth and Inclusion

26. Who is taking the lead in rainfed agriculture activities?

27. What proportion of women are actively participating in project activities?

☐ <25% ☐ 25–50% ☐ 51–75% ☐ >75%

28. Rate the project's impact on women's empowerment (decision making, income control, leadership)

Impact on	Rating
Decision making	
Income control	
leadership	

29. What proportion of youth are actively participating in project activities?

☐ <25% ☐ 25–50% ☐ 51–75% ☐ >75%

30. Have the project activities created any new opportunities for women and youth (jobs, leadership, training)? Why?

SECTION F: Environmental and Technical Impact

31. Have project interventions improved soil fertility? How have you observed that?

32. Have project interventions improved water management?

33. Rate your community awareness of sustainable land and water management practices promoted by the project.

☐ 1 (Low) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (High)

34. Have climate-smart practices reduced the impact of droughts or erratic rainfall?

35. How have you observed that?

36. What are the main barriers to wider adoption?

SECTION G: Institutional Support and Collaboration

To show the role and contribution of stakeholders, diagrammatic presentation of relationship strength or weakness (using the GALS methodology or other tools preferred), draw a venn diagram, put farmers at the centre, farmers describe the type of relationship with each institute depicted by lines – bold lines show string relationships, thin lines- moderate and dotted lines – show weak relationship. Arrows can be used to depict whether the relationship is 1 or 2 ways (mutually beneficial/exploitive in nature)

37. How visible and supportive have local institutions (wards, traditional leaders, district offices) been in project implementation?

Response: (1=not involved, 5=highly supportive)

Institution	Rate of support
Wards	
Traditional leaders	
District offices	

38. How often do extension officers visit or engage with farmers?

39. Has the project improved collaboration between farmers, government and private sector?

40. Which partnerships or collaborations have been most effective?

41. Which partnership would you like to implement in future?

SECTION H: Sustainability and Future Priorities

42. What community structures /mechanisms are supporting sustainability and project gains?

43. Who should lead in maintaining or scaling the interventions?

44. What additional support is needed to make project results sustainable?

45. What innovations of local knowledge can be integrated further?

46. What should be the next focus for similar future projects?

SECTION I: Additional Reflections

47. What key lessons or success stories have emerged from the enhanced rainfed agriculture interventions in your area?

48. What did not go well in your activities?

49. If you could recommend three things to focus on in the future, what would they be?

Interview End Time: _____

Annex 03. NGO questionnaire



TIARA Project – Self-evaluation questionnaire for the NGOs

Purpose

To collect perceptions and collective insights from NGOs on the relevance, effectiveness, and impact of **TIARA interventions on enhanced rainfed agriculture** in the Zambezi Watercourse as part of the Triple Bottom Line whitepaper and self-evaluation of TIARA.

SECTION A: General Information

Variable	Description
Name of the Organization	_____
Location (District you have worked in)	_____
Facilitator Name	_____

SECTION B: Awareness and Understanding of TIARA Project

1. How many active current farmers are you serving under the TIARA project?

Total : _____ (Male _____ / Female _____ / Youth _____)

2. How many farmers have you served with training and technical support since you started?

Total : _____ (Male _____ / Female _____ / Youth _____)

3. How would you rate your understanding of the TIARA project's goals?

☐ 1 (Very low) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Excellent)

4. Through which channels did participants first learn about the project?
☐ Extension officers ☐ Village meetings ☐ Radio ☐ Local leaders ☐ Project staff ☐
Farmer networks ☐ Others: _____

SECTION C: Project Implementation and Community Participation

5. Which specific activities have been implemented in the area you have worked in?
(before or during your interventions)
☐ Water harvesting structures
☐ Conservation agriculture
☐ Agroforestry practices
☐ Farmer field schools
☐ Livelihood diversification (SME, value chains)
☐ Climate-smart training
☐ Others (specify): _____
6. How often were you organizing TIARA-supported trainings or meetings?
☐ Weekly ☐ Every second week ☐ Monthly ☐ Quarterly ☐ Yearly
7. How would you rate participants' satisfaction with the technical support you provided?
☐ 1 (Very dissatisfied) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Very satisfied)
8. If dissatisfied, please explain:

9. What are the most common challenges encountered by farmers when implementing new agricultural practices?
☐ Lack of tools ☐ Limited awareness and education ☐ Poor access to inputs
☐ Labour constraints ☐ Market access ☐ Climate factors ☐ High initial costs
☐ Uncertain returns on investment ☐ Policy & regulatory barriers ☐ Other: _____
10. How to overcome these barriers?

-
11. How would you rate collaboration among different actors (community, extension, NGOs, private sector)?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

12. Please explain why:

SECTION D: Economic and Livelihood Outcomes

13. Rate the extent to which the project has improved access to markets or income-generating activities.

☐ 1 (Not improved) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Highly improved)

14. Since the project started, how have crop yields changed?

☐ Decreased ☐ No change ☐ Slight increase (<10%) ☐ Moderate increase (10–30%) ☐ Strong increase (30–60%) ☐ Specify if more: _____

15. What percentage of households, in the regions you are working in, are currently benefiting from project interventions?

☐ <25% ☐ 25–50% ☐ 51–75% ☐ >75%

16. Has the project created or supported any local businesses or employment opportunities?

☐ Yes ☐ No

If yes, please estimate how many: _____

Which ones:

17. How has TIARA contributed to household food security and resilience?

☐ No change ☐ Slight improvement ☐ Moderate improvement ☐ Significant improvement

18. What are the top three crops or value chains most positively affected?

1. _____

2. _____

3. _____

SECTION E: Gender, Youth, and Inclusion

19. Rate the project's impact on women's empowerment (decision-making, income control, leadership).

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

20. Are youth actively involved in the project (e.g., as trainees, entrepreneurs, extension aides)?

☐ Yes ☐ No

If not why ?/If yes how?

21. Have project activities created any new opportunities for women and youth (e.g., jobs, leadership, training)?

☐ Yes ☐ No

If not why ?/If yes how?

SECTION F: Environmental and Technical Impact

22. How have project interventions improved soil fertility?

☐ No change ☐ Slight improvement ☐ Moderate improvement ☐ Significant improvement

How have you measured that? (which metrics)

23. How have project interventions improved water management?

☐ No change ☐ Slight improvement ☐ Moderate improvement ☐ Significant improvement

How have you measured that? (which metrics)

24. How have climate-smart practices reduced the impact of droughts or erratic rainfall?

☐ No change ☐ Slight improvement ☐ Moderate improvement ☐ Significant improvement

How have you measured that? (which metrics)

25. Rate community awareness of sustainable land and water management practices promoted by TIARA.

☐ 1 (Low) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (High)

26. From all farmers you have reached, what percentage of farmers are currently adopting TIARA-promoted practices?

☐ <25% ☐ 25–50% ☐ 51–75% ☐ >75%

27. What are the main barriers to wider adoption?

☐ Cost ☐ Limited knowledge ☐ Labour ☐ Land tenure ☐ Access to credit ☐ Others:

SECTION G: Institutional Support and Coordination

28. How visible and supportive have local institutions (wards, traditional leaders, district offices) been in project implementation?

☐ 1 (Not involved) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Highly supportive)

29. How often have extension officers visited or engaged with farmers?

☐ Weekly ☐ Monthly ☐ Quarterly ☐ Rarely

30. Has the project improved collaboration between farmers, government, and private sector?

☐ Yes ☐ No ☐ Partially

Please elaborate on your partners within TIARA (Funders, scientists, politicians etc):

31. Which partnerships or collaborations have been most effective?

32. Which stakeholders are you considering for future partnerships? (NGOs, funding agencies, scientists, investors, farmers, politicians, banks etc)

SECTION H: Sustainability and Future Priorities

33. What mechanisms exist in your community to sustain project gains?

☐ Cooperatives ☐ Farmer groups ☐ Savings clubs ☐ By-laws ☐ District support ☐ None

34. How confident are participants that benefits will continue after project completion?

☐ 1 (Not confident) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (Very confident)

35. Who should lead in maintaining or scaling the interventions? (multiple answers possible)

☐ Local government ☐ Farmer groups ☐ Private sector ☐ NGOs ☐ Chiefs/Traditional leaders ☐ Others: _____

36. What additional support is needed to make project results sustainable?

☐ Access to finance ☐ Market linkages ☐ Continued training ☐ Input supply ☐ Infrastructure ☐ Other: _____

37. What should be the next focus for similar future projects?

☐ Irrigation ☐ post-harvest management ☐ Agribusiness ☐ Climate adaptation ☐ Youth inclusion ☐ Water governance ☐ Other: _____

SECTION I: Additional Reflections

38. What key lessons or success stories have emerged from TIARA interventions in your area?

Annex 04a. List of documents consulted

Project concept & identification

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Annex 04b. List of documents produced

Agreements and Memorandums of Understanding

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Signed agreement SIWI – LBF 2020
Signed Consulting Services Agreement with Maganizo Kruger Nyasulu - signerat
Signed Amendment to the Consulting Services Agreement - signerat
Signed Amendment to the SIWI-ICRAF Agreement - signerat
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Manual 1 – Introduction to Landscape Restoration and Water Resources Management

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Manual 4 – Hydrological Impacts of Watershed Management

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Stockholm.

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AIM4C information additional KM

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GO NO GO PRESENTATION – ARC. Business models.

GO NO GO PRESENTATION - CAPACITY BUILDING 2024-2025

2023 TIARA FINANCIAL REPORT @ 21th February 2024.

WWW 2021_08_25 PPT_ Building climate resilience through rainfed agriculture in the African context.

Notes of WWW 2021 Rainfed Agriculture Session.

Participant List 2021 WWW Rainfed Agriculture session

Presentations 2022 TIARA WWW session ZAMCOM_SIWI_CIFOR_ICRAF_31 Aug.

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 SIWI WWW 2023 ProposalDetail_TIARA_11080_2023_04_21_10_30.
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 PPT WWW 2023 session “Investing in Rain – pathways to a sustainable future”.
 20230703 Source Water Protection for Africa Concept Note SIWI- TNC 2023
 AGRA Consortia Model Presentation Aug 2023
 SIWI_Danone initial Collaboration proposal
 Danone proposal 20 December 2023
 2023 Danone water stewardship journey
 GEF funding application 29 may final
 Different documents of Lunyangwa Malawi Project proposal
 ZAMCOM CONCEPT NOTE Project Compendium 10Oct2023 copy
 Stakeholder analysis Inception report
 Stakeholders engagement
 TIARA stakeholder profiling workshop outcomes
 Call off contract_Partnership development and resource mobilization_TIARA 2023
 SIGNED Call-off contract Partnership Development 26012021 - signerat
 ToR Partnership Development Strategic Advisor TIARA
 SIGNED Framework Service Agreement Partnership Development TIARA - signerat
 Amendment to Framework Agreement Maryll Consulting_TIARA ZAMBEZI 2023
 16 March Amendment to Framework Agreement Maryll Consulting_TIARA ZAMBEZI 2023 – signed
 Call-off contract World Agroforestry Rainfed Technical Expert TIARA – signerat
 Framework Service Agreement World Agroforestry_ICRAF 20210203 – signeratTIARA Zambezi. Final report 50
 Consulting Services Agreement GIS Specialist 20210928_signed_
 Call-off contract World Agroforestry Rainfed Technical Expert TIARA - signerat (1)
 New Ventures Podcast. # 68 Pledging to protect the land.
 How can food security be improved in Africa?
 Why invest in rain?
 Felix Ngamlagosi: A pressing need for governments to invest in greenwater
 New Ventures Podcast. # 53 Breaking the cycle of subsistence farming.
 Rainfed systems intensification and scaling of water and soil management: Four case studies of development in

family farming

Country/regional policy & development documents

Mainstreaming Gender in River Basins Organisations in SADC. SADC, 2015.

Zimbabwe National Development Strategy 1, 2021 to 2025

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ICRAF: WAMPA Slides for Training

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CIFOR-ICRAF contributions towards forest conservation, biodiversity, and sustainable development in Zambia-31 July 2025

CTDO TIARA Presentation_2025_Zambia (002)

FACHIG -TIARA Presentation November

TIARA Tiyeni Project 01/11/2025

Flyer WWW session

WWW Presentation 1 SIWI

WWW Presentation 2 Tiyeni

WWW Presentation 3 Maganizo

WWW Presentation 4 MetaMeta

WWW Presentation 5 IRHA

WWW session Programme_“Restoring landscapes and green water flow through innovative finance” 12083

Draft project concept building on TIARA-Zambezi

Annex 05. SE participants

Participants considered for the evaluation were selected taking into consideration their role in the project, the level of effective and potential involvement on the project and their sphere of influence over intended outcomes and impact. Even that the selection was oriented by the representation of the different typology of stakeholders (public, private & main partners), gender information was also considered, looking for equality when there was the possibility to choose within each typology.

Project Team	Local NGOs	CIFOR-ICRAF	Government officials	TOTAL
3	8	2	2	15

PARTICIPANTS IN THE SE	FINAL PARTICIPANTS			
	Group discussion during Zambia workshop	Focus Group Discussion	NGO questionnaire	Reporting

GOVERNMENT OFFICIALS

Zambia						
Group discussion						
William	Phiri	Ministry of Water Development and Sanitation, Ministry of Agriculture, Green Economy and Environment	x			
Dankwa	Hamunjo	Ministry of Lands and Natural Resources	x			

PROJECT TEAM

Group discussion and Reporting						
Anna	Tenberg	SIWI. Senior Advisor	x			x
David	Mingasson	SIWI. Project Officer	x			x
Alice	Jaraiseh	SIWI. Project Manager				x
Malesu	Maimbo	CIFOR-ICRAF	x			x

PROJECT MAIN PARTNERS

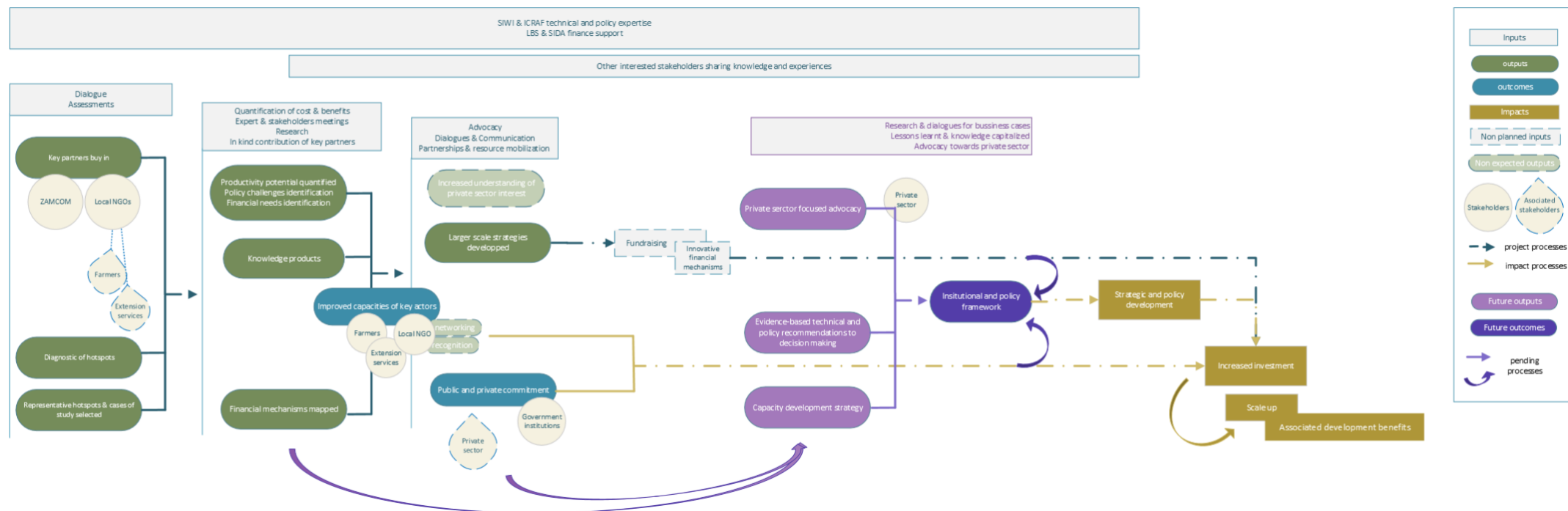
Groups discussion & reporting						
Malesu	Maimbo	CIFOR-ICRAF	x	x		x
Hockings	Mambwe	CIFOR-ICRAF	x	x		

RIGHT HOLDERS. Organization implementing pilot projects

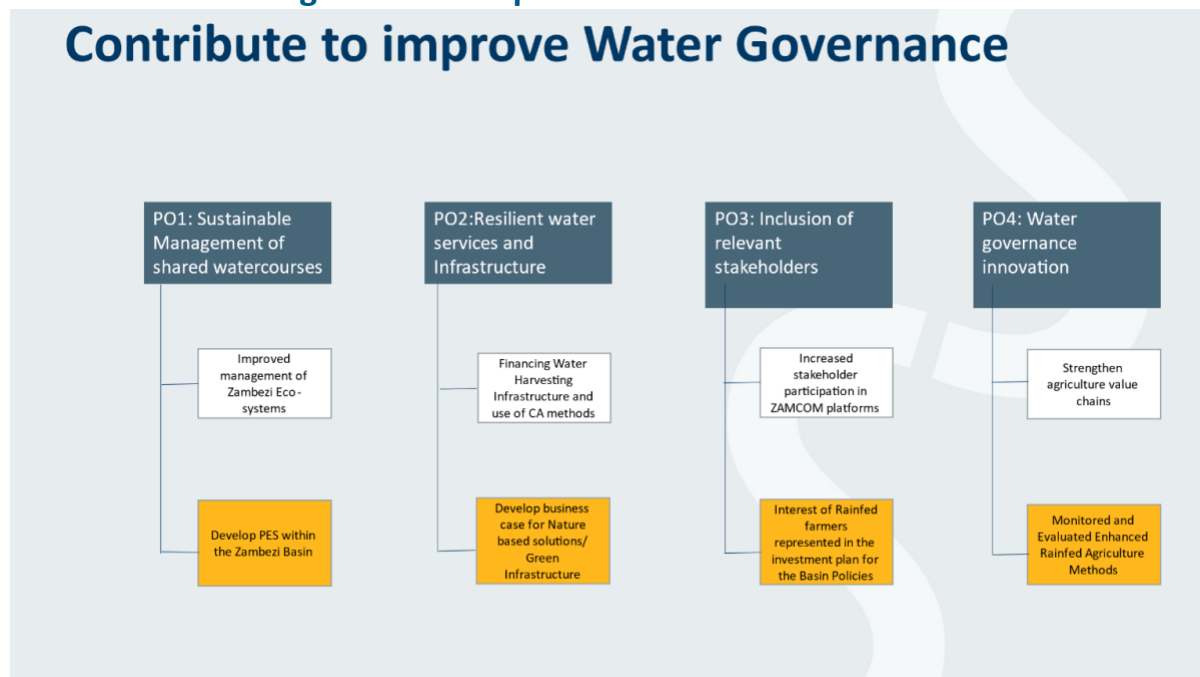
COMACO						
Group discussions & reviewer						
Isaac	Soko	Community Markets for Conservation (COMACO)	x	x		
Mwemda	Moses	COMACO	x	x		
CTDO						
Group discussions & reviewer						
Nobleman	Mafuratidze	Community Technology Development Organisation. Project manager	x	x	x	x

Edson	Dhlakama	Community Technology Development Organisation. Project manager	x	x	x	x
FACHIG						
Group discussions & reviewer						
Runyararo Evelyne	Motsi	FACHIG. Coordinator.	x	x	x	x
Thomas	Mupetesi	FACHIG Trust. Director.	x	x		
TIYENI						
Group discussions & reviewer						
Wesley	Kondowe	Tiyeni. Finance officer	x	x	x	
ISAAC MONJO	CHAVULA	TIYENI. Director	x	x	x	x

Annex 06. Processes of change according to the Mid-Term Evaluation (García, 2024).



Annex 07. Sida Programmatic Report



Annex 08. Terms of Reference

Terms of Reference for the final evaluation of the SIWI project Enhancing Rainfed Agricultural Systems in the Zambezi Watercourse (TIARA-Zambezi) funded by the Leopold Bachmann Foundation (LBF)

Project Evaluation Overview

The document outlines the terms of reference for evaluating the TIARA-Zambezi project aimed at transforming investments in African rainfed agriculture with a focus on the Zambezi basin.

- The project, funded by LBF with co-financing from Sida and in-kind support from local NGOs, started in July 2020 and will end in December 2025 with a budget of 1 200 000 Euro from LBF.
- The evaluation managed by SIWI, is designed as a self-evaluation and aims to draw lessons for similar future initiatives.

Background and context on rainfed agriculture in the Zambezi basin

The Zambezi River Basin is the fourth-largest river in Africa and its waters are critical to sustainable economic growth, providing environmental goods and services to the region and are essential to food security and hydropower production. An estimated 65-70% of the population is engaged in small-scale, rainfed agriculture, many living in extreme poverty, which is often caused by poor agricultural productivity. Smallholder rainfed farmers are the frontline managers of water resources, directly impacting rainfall runoff, infiltration, and erosion through their actions. Typically, these farmers have little or no support or training in

the management of these scarce rainfed water resources and the land on which they depend. Increasing crop yields at a farm-by-farm level at a sufficient scale would bring positive knock-on effects throughout the rural economy, such as employment and health, enabling a wide range of related off-farm economic activity to develop alongside decreasing catchment degradation.

Project Goals and Objectives

The long-term goal of the project is to support rural communities along the Zambezi watercourse by increasing food security, improving climate resilience /water/ land management, and creating jobs and sustainable livelihoods whilst contributing to growth and development.

The immediate outcomes include:

- Public and private investments to enhance rainfed agriculture increased along the Zambezi watercourse
- Risks and benefits/Return on investment (ROI) of enhanced rainfed agriculture quantified
- A cadre of multi-disciplinary champions with the attitude, skills and knowledge to implement enhanced rainfed agriculture

Project Outputs and Target Beneficiaries

The project has specific outputs and aims to reach direct and indirect beneficiaries, as well as regional and international partners:

- Significant increase in yield and income compared to conventional farming
 - Direct beneficiaries: Farmers and local communities supported by the NGOs to adopt enhanced rainfed agricultural practices
- Improved support from the agricultural extension service on enhanced rainfed practices, such as Deep-Bed Farming (DBF), Pfumvudza and other agroecological and conservation agriculture practices
 - Indirect beneficiaries: Farmers at hotspots adopting enhanced rainfed agricultural practices; local NGOs
- Increased funding to scale up enhanced rainfed agriculture
 - Regional/International partners in the Zambezi basin

Achievements and Results to Date

The project has made notable progress in enhancing skills, commitment and financial support for rainfed agriculture and smallholder farmers in the Zambezi in Malawi, Zambia and Zimbabwe:

- Regional partners demonstrate increased awareness and commitment to mobilising resources to enhanced rainfed agriculture, demonstrated by the

Statement of Intent signed in April 2024 by ZAMCOM Council of Ministers on Enhanced Rainfed Agriculture

- Community groups with a total of approx. 400 farmers (more than 50% women) have reached out to the larger community (4 000 people) through field days with demonstrations. Through collaboration with the agricultural extension service, around 20 000 farmers have been reached in the pilot countries
- A grant of USD750 000 mobilised for Tiyezi-Malawi to scale up DBF in the Lunyangwa basin (sub-basin to the Zambezi basin)

Evaluation Purpose and Intended Users

The evaluation aims to ensure accountability and provide lessons for future projects.

- It will assess resource use and results achieved, documenting lessons learned for future initiatives.
- Primary users include SIWI, LBF, local NGOs in the Zambezi basin, ZAMCOM, as well as other organizations involved in similar initiatives.

Evaluation Scope and Key Questions

The evaluation will cover the entire project period and assess various criteria.

- It will evaluate relevance, effectiveness, efficiency, sustainability, and progress towards impact.
- Key questions focus on project design, contributions to livelihoods, management efficiency, and sustainability prospects.
- It will identify lessons learned for future initiatives related to enhanced rainfed agriculture in Africa.

Methodology and Data Collection

The evaluation will follow OECD [standards](#) and utilize qualitative and quantitative methods.

- A consultative approach will be adopted, ensuring ethical guidelines are followed.
- Data collection will include desk reviews of project documents and surveys conducted during the project.

Gender, Youth and Capacity Development Evaluation

The evaluation will assess gender and youth considerations and capacity development within the project.

- It will evaluate how gender and youth concerns were integrated into project design and implementation.
- The capacity development [framework](#) will be used to analyze the project's emphasis on building skills and resources.

Evaluation Methodology and Data Collection

The evaluation will utilize group discussions, semi-structured interviews and field visits to gather information and storylines from various stakeholders involved in the project.

- Semi-structured interviews (SSI) will be conducted with project team members, key stakeholders, and informants.
- A detailed stakeholder list will be created, including representatives from SIWI, local NGOs (COMACO, CTD, FACHIG and Tiyezi), extension officers, and project management teams.
- Field visits will assess project implementation and results, involving interviews with beneficiaries and local stakeholders.
- Data collection techniques will include Focus Group Discussions (FGDs) and case studies using tools like "Most Important Change Story."
- Purposeful sampling will identify project locations among three countries, focusing on diverse results and accessibility.

Evaluation Team Composition and Expertise

The self-evaluation will be led by a team of experts from SIWI, the participating NGOs in Malawi, Zambia and Zimbabwe, and CIFOR-ICRAF with expertise in relevant areas, including policy and finance related to rainfed agriculture, gender equality, youth representation and agricultural practices.

Evaluation Deliverables and Timeline

The evaluation team is accountable for producing several key deliverables before the closure of the project.

- The inception report will outline the evaluation matrix, methodology, criteria and questions for collection of stories from the field, and other data collection tools.
- The draft evaluation report will be reviewed by a SIWI expert not directly involved in the evaluation and circulated for comments before finalization.
- The final report will include an executive summary and supporting information, prepared in English.
- Key tasks and their deadlines are outlined, with the final report due in January 2026.

Project Implementation Progress and Outcomes

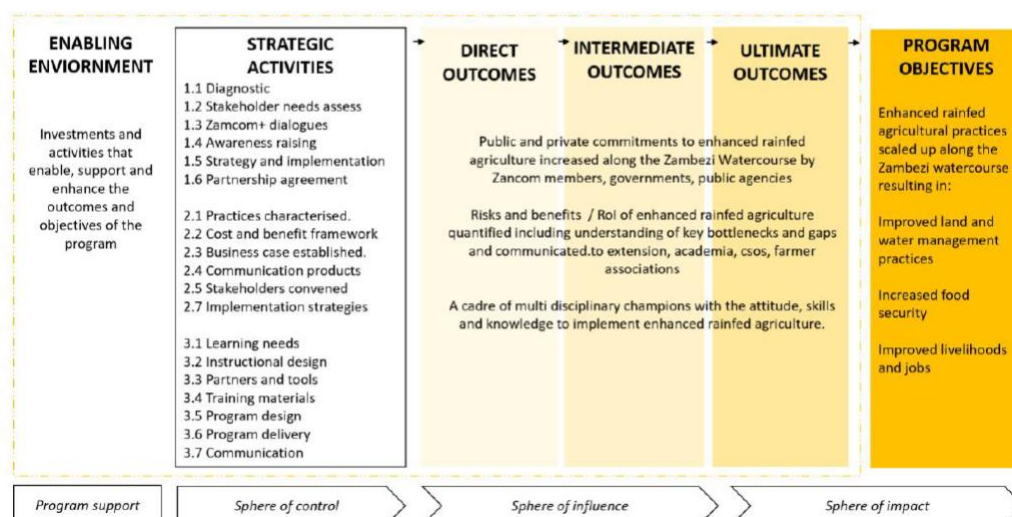
The Mid-Term Evaluation (MTE) of TIARA-Zambezi was completed and reported on in April 2024. Project results were considered satisfactory and on track towards delivering outcomes and outputs, and sustainable impact that are human rights and gender responsive. It highlighted the key role played by NGOs and extension services in championing the project and the multiple benefits of the enhanced rainfed practices including the business approach to engage farmers.

The project has continued to support field monitoring of enhanced rainfed practices and field days with local farming communities at sites in Malawi and Zimbabwe to strengthen knowledge of rainfed practices and to promote scaling up of successful practices. The business case for enhanced rainfed agriculture is being finalized based on the field monitoring coupled with modelling of impacts at regional scale on soil moisture and carbon. After the MTE, the project has also stepped up its support for capacity building and training and supported two regional knowledge exchanges in Malawi and Zimbabwe, respectively.

Appendix: Project Outcomes and Indicators

This section details the project outcomes, outputs, and corresponding indicators for measuring success.

Theory of Change diagram: Enhancing rainfed agricultural systems in the Zambezi Watercourse



Outcome	Strategic Activities/ Outputs	KPIs
1. Public and private investments to enhance rainfed agriculture increased along the Zambezi watercourse	1.1 Diagnostic 1.2 Assessment of stakeholder needs 1.3 Zamcom+ Dialogues 1.4 1.4 Awareness raising 1.5 Strategy and implementation 1.6 Partnership agreement	- Number of commitments and investments mobilized to enhanced rainfed agriculture in the Zambezi region - Number of farming communities at hotspots in the Zambezi basin benefitting from more investments
2. Risks and benefits/Return on investment (ROI) of enhanced rainfed agriculture quantified	2.1 Practices characterized 2.2 Cost and benefit framework 2.3 Business case established 2.4 Communication products 2.5 Stakeholders convened 2.6 Implementation strategies	- ROI calculations and report on ROI and barriers to scaling available. - Report on metrics for measuring watershed impacts of enhanced rainfed practices available - Number of farmers and local communities supported by the

		NGOs to adopt enhanced rainfed agricultural practices
3. A cadre of multi-disciplinary champions with the attitude, skills and knowledge to implement enhanced rainfed agriculture	3.1 Learning needs assessed 3.2 Instructional design 3.3 Partners and tools 3.4 Training materials 3.5 Program design 3.6 Program delivery 3.7 COmmunication	• Training material on the landscape approach to enhanced rainfed agriculture adopted to the Zambezi basin available • Local NGOs with enhanced capacity (measured using capacity score card)

Annex 09. Links to LinkedIn post on TIARA-Zambezi

Zambia LinkedIn post on SIWI account: https://www.linkedin.com/posts/stockholm-international-water-institute_tiara-in-zambia-activity-7399747926295646208-9lfq?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag

WWW session LinkedIn post on SIWI account: https://www.linkedin.com/posts/stockholm-international-water-institute_tiara-www-session-2025-activity-7396442166224392192-aVqe?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag

Malawi & Zimbabwe LinkedIn post on SIWI account: https://www.linkedin.com/posts/stockholm-international-water-institute_tiara-field-visits-siwi-activity-7373260540313432064-jd4-?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag

Promotion of the Zambia blog post on SIWI LinkedIn account: https://www.linkedin.com/posts/stockholm-international-water-institute_siwi-greenwater-rainfedagriculture-activity-7430138498172686336-Cdhu?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag

Zambia LinkedIn post on David Mingasson's account: https://www.linkedin.com/posts/david-mingasson_climate-nature-conservation-activity-7395102600150528000-0XFY?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag

WWW session LinkedIn post on David Mingasson's account: https://www.linkedin.com/posts/david-mingasson_www2025-worldwaterweek2025-www2025-activity-7369400355882835968-XNQ3?utm_source=share&utm_medium=member_desktop&rcm=ACoAACuJlDkBY8z6Khc4jZT4svBmSw-e8xkfLag