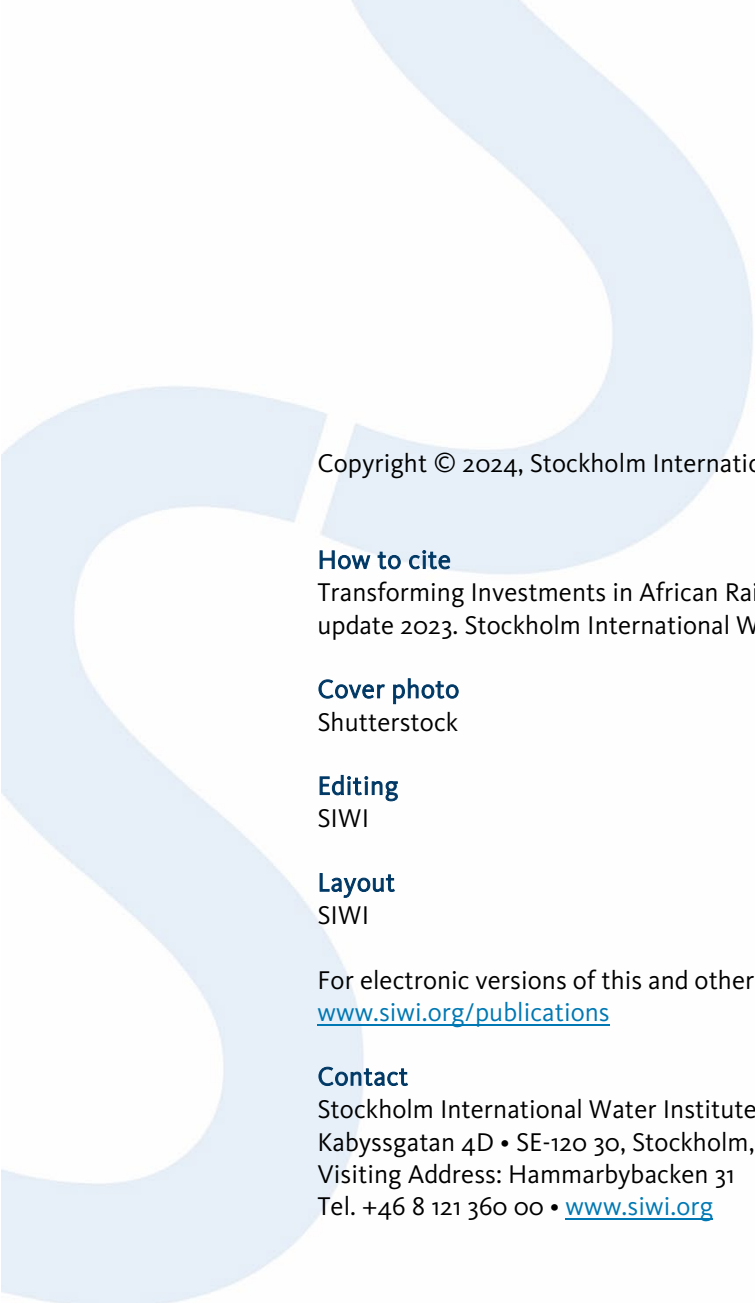


REPORT

# Transforming Investments in African Rainfed Agriculture (TIARA): Annual Update 2023

A year in review and planned activities for 2024





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**How to cite**

Transforming Investments in African Rainfed Agriculture (TIARA) Initiative. Annual update 2023. Stockholm International Water Institute, Stockholm

**Cover photo**

Shutterstock

**Editing**

SIWI

**Layout**

SIWI

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# 1. Introduction

As we lead our way into 2024, the Transforming Investments in African Rainfed Agriculture (TIARA) project looks back on key highlights and achievements from 2023.

Equally, the document is a forward-looking plan for activities during 2024.

In the first quarter, a number of initiatives will lead to greater financial support going directly to farming communities in the eight Riparian States that share the Zambezi River Basin. These are Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. We anticipate the creation of bankable climate smart infrastructure investment projects targeting the energy, water supply, agriculture, and nature-based solutions sectors as part of the Zambezi Investment Programme spearheaded by the Zambezi Watercourse Commission (ZAMCOM).

Bringing capacity development to the forefront, in 2024, the program will also facilitate capacity development seminars covering agricultural yields, soil and water conservation, carbon credits, and access to carbon markets, which will strengthen the sustainability of the technical help that farmer organizations get.

### About the project:

The TIARA project places farmers at the centre of our work, by recognizing them as the frontline water managers of Africa.

TIARA is working to attract climate-smart investments in rainfed agriculture to improve food security along with catchment conservation through improved soil and water management at farm level. TIARA is currently active across the Zambezi Watercourse.

To achieve its goal, TIARA is working in five key areas as highlighted in figure 1:

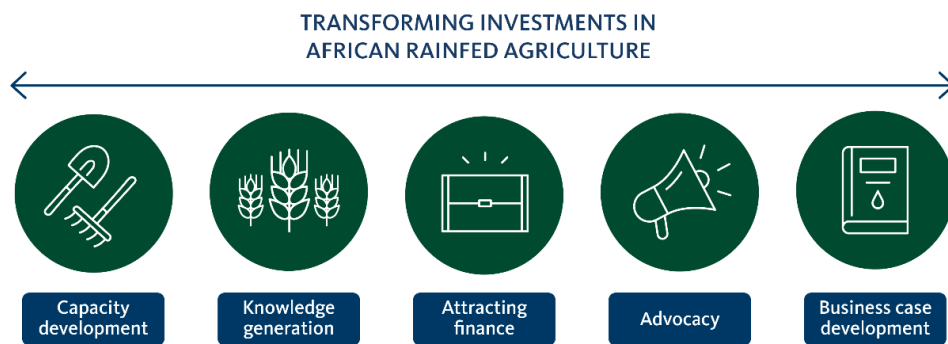


Figure 1: How the project transforms investments by working across five key areas.



## 2. Key highlights from 2023

Based on figure 1, this annual update presents key highlights from each of the key areas of work.

### 2.1 Capacity development

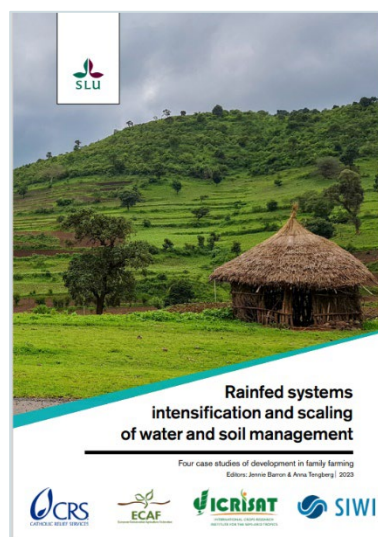
- Following the establishment of demonstration plots through the partnership with local NGOs, farmers have received various sustainable farming and Catchment conservation training in the first planting season. For example, in Malawi the NGO Tiyeni trains and promotes Deep Bed Farming system. In our pilot site in Zimbabwe, TIARA partners with CTDI and FACHIG which train and promote farmer's use of different water harvesting technologies including conservation agriculture (CA) and small dam construction.
- In Zambia, TIARA has partnered with the local NGO COMACO as it trains its staff in the digitization of data collection processes with a feedback mechanism to reduce the cost of extension services. The project undertook capacity development of community farmer-based organizations to enhance monitoring of conservation activities as well as train them in agroforestry field land mapping (digitizing farm plots) for onboarding on the Acorn project for carbon accounting at the farmer level. This improved the level of monitoring and evaluation of results has enabled COMACO to attract the interest of local and international development partners to finance its work.
- TIARA participated in the 4th annual Zambezi Watercourse-wide Multi-Sector Stakeholders Forum (WAMSF) from 21- 23 November 2023 in Maputo, Mozambique whose Theme was: "Building strong communities that are resilient to climatic and economic shocks in the Zambezi Watercourse through promoting inclusive transformative investments." The objective of the Forum was to bring together multi sectoral stakeholder representatives with interests in sectors that include water, energy, environment, agriculture, climate change, landscape management, and others in the watercourse to share knowledge and experiences; and provide advice and inputs that contribute to ZAMCOM initiatives, and the Zambezi Watercourse

developments. The Forum also sought to explore climate smart investment opportunities in the Zambezi Watercourse with a view to increase the Watercourse's ability to cope with the effects of climate change.

To build a cadre of multi-disciplinary champions with the attitude, skill and knowledge to implement enhanced rainfed agriculture, TIARA presented capacity building tools at the Forum. These included the Water-smart Forest and Landscape Restoration (W-FLR) Tool, Landscape and Water Management Manuals, Integrated Approach to Water Resources Management and Integrated Water Resource Management Manuals.

## 2.2 Knowledge generation

- Professor Jennie Barron from the Swedish University of Agricultural Sciences and Anna Tengberg, Senior Advisor at SIWI and Adjunct Professor at Lund University Centre for Sustainability Studies, collaborated on a technical report entitled [Rainfed systems intensification and scaling of water and soil management: Four case studies of development in family farming](#), that was published in November 2023. The report thematically relates to the TIARA programme.



The report presents evidence for intervention in rainfed agricultural systems through four case studies of scaling best practices in small and medium-sized farming in India, Central America, Ethiopia, and Brazil. The following lessons were drawn from the case studies:

1. Active management of rainfall for resilience building - In rainfed farming systems neither improved wellbeing, nor a sustainable environment are achievable, unless rainfall is managed more actively and creatively. Managing rainfall is therefore a must in order to ensure that other investments in crop management pay off.

2. Participation, inclusiveness and consultative approaches - All the cases reported here demonstrate explicit efforts in participatory, inclusive and consultative approaches, including the gender dimension, when taking new practices into use.
3. Partnerships for co-production of knowledge and innovation - The active inclusion of research capacity for co-production of new knowledge and innovation is critical to improving technologies and practices in the respective farming systems, together with farmers and key public, private and civil society agricultural institutions.
4. Governance and institutional arrangements - Increasingly, there are national policies and institutions with links to multilateral agreements and global commitments that support local action towards intensification in rainfed systems. Intensification through water and soil management in rainfed systems often have both livelihood and ecosystem service benefits.

The cases provide the initial concerns, activities, and practises advocated on farm, including the investment sources and actors involved, spanning a 10- to 30-year period to demonstrate impact at scale.

- During the 2023 implementation year, the TIARA program, in partnership with local NGOs (Tiyeni, Fachig, CTDI, and COMACO), commenced data collection from pilot sites as part of the initial planting season. This data will be utilized for calculating the Return on Investment (RoI) in improved rainfed agriculture and will form a vital component of training manuals and a policy brief slated for release in 2024. The training manuals will encompass ecosystem services, restoration techniques, and approaches that address biological, physical, and socioeconomic factors. The policy brief will articulate the economic rationale of the program, aiming to unlock benefits across farmer returns, environmental outcomes, and rural employment opportunities. Additionally, it will address policy insights, provide guidance on scaling up projects across Africa and the Zambezi basin, and illustrate how the triple-bottom-line approach can attract financing.





Image 1: The pigeon pea cultivated together with Maize on the Deep Bed technique in Malawi. Pigeon pea is known for its properties for improving soil health and facilitating water infiltration. Photo: SIWI



Image 2: Residue from harvested maize is used for mulching - covering the soil surface to retain moisture protection from heat. Mulch decompose and contribute to soil organic matter. Photo: SIWI

## 2.3 Attracting finance

- Through the TIARA initiative, SIWI is supporting ZAMCOM in the development of a pipeline of bankable climate smart infrastructure investment projects targeted for the following sectors: agriculture, energy, water supplies, and nature-based solutions. SIWI has successfully facilitated resource mobilization to ZAMCOM from Swedfund to advance water-related infrastructure projects in the watercourse.
- In the second half of 2023, in partnership with WWF, Lunyangwa Waterboard and Tiyeni, TIARA designed The Lunyangwa Project, a strategic 4-year initiative to transform agriculture, water management and livelihoods in the Zambezi Watercourse region. A project proposal has been submitted to multiple financiers. The Lunyangwa Project will prepare for the deployment of a Payment for Ecosystem Services (PES) model, first in Northern Malawi and then in the Zambezi Watercourse region, to incentivize farmers to adopt improved rainfed agricultural practices and realize multiple benefits:
  - 1) Better water conservation,
  - 2) Improved resilience to climate change,
  - 3) Poverty alleviation, and
  - 4) Enhanced food security

## 2.4 Advocacy/ Key events

### Rainfed Agriculture Investment Forum

The Zambezi Rainfed Agriculture Investment Forum took place on the 8 and 9 August 2023 at the Gaborone International Convention Centre, Botswana. It was convened by ZAMCOM, co-organized by the Stockholm International Water Institute (SIWI), Global Water Partnership - Southern Africa, Centre for International Forestry Research and World Agroforestry (CIFOR-ICRAF) and hosted by the Ministry for Lands and Water Affairs of the Republic of Botswana.

Over 80 participants from diverse backgrounds and affiliations from 17 countries gathered for discussions and collaborations. The forum culminated in a Call to

Action read out by the riparian states' representatives, outlining a collective intent and roadmap for future endeavours, underscored a shared commitment to advancing rainfed agriculture and climate resilience across the Zambezi Watercourse. The statement of intent is expected to be presented at the next ZAMCOM Council of Ministers sitting in 2024.

A direct result of the investment forum is a grant awarded to Tiyeni by Callisto Grand, a corporate credit advisory and conference company based in the Czech Republic. The grant was awarded in partnership with Regen Innovation, a company working with entrepreneurial ventures.



Image 3: 80+ Participants of the Zambezi Rainfed Agriculture Investment Forum, in Gaborone, Botswana

[Read the full report from the forum.](#)

## World Water Week

TIARA and partners hosted a session titled '**Investing in Rain – Pathways to a Sustainable Future**' convened on Sunday 20 August, in Stockholm during World Water Week, with inputs from, ZAMCOM, The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), SIWI, CIFOR ICRAF.

The private sector, represented by an impact investor, highlighted the need for local

legal entities within smallholder farmers to absorb financial mechanisms and funding. The speaker concluded by pointing out that investors have a shared role in funding improved rainfed agriculture systems and that the criteria for legal entities with a track record cannot be disregarded.

## **Launch of PIDACC**

TIARA participated in the launch of the PIDACC Zambezi (Programme for Integrated Development and Adaptation to Climate Change in the Zambezi River Basin) that took place on 26 April 2023 in Kasane, Botswana. PIDACC Zambezi is an investment programme initiative being developed by ZAMCOM to increase climate smart resilience through addressing the various challenges that impact livelihoods and development in the Zambezi Watercourse. The PIDACC Zambezi will see the implementation of investment projects at both the national and regional levels, within the context of support, coordination, and institutional development.

## **10<sup>th</sup> SADC workshop**

TIARA participated at the 10th SADC River Basin Organisations/Shared Watercourse Institutions (RBOs/SWIs) held on the 2–4 October 2023 in Maputo, Mozambique. The theme for the Workshop was “Promoting water security through inclusive transboundary and conjunctive management and development of water resources.” The Workshop focused on sharing information and experiences on inclusive transboundary water financing in order to realise the benefits of transboundary water cooperation and promote sustainable industrial development through the region’s river basin institutions.

## **Annual Zambezi Watercourse Forum**

TIARA participated in the 4th annual Zambezi Watercourse-wide Multi-Sector Stakeholders Forum (WAMSF) from 21- 23 November 2023 in Maputo, Mozambique whose Theme was: “Building strong communities that are resilient to climatic and economic shocks in the Zambezi Watercourse through promoting inclusive transformative investments.” The objective of the Forum was to bring together multi sectoral stakeholder representatives with interests in sectors that include water, energy, environment, agriculture, climate change, landscape management, natural resources (fisheries, forestry, conservation) and others in the



watercourse to share knowledge and experiences; and provide advice and inputs that contribute to ZAMCOM initiatives, and the Zambezi Watercourse developments.

## 2.5 Business case development

Farmers have planted and harvested for a season and have entered the second season. The produce is expected in the first half of 2024. To this effect, the following information is being gathered from the four pilot sites by TIARA local NGO partners:

RoI (data to calculate this)

Biophysical and socio-economic data

Rainfall, soil types

Land holding capacity, crop yields,

Number of farmers practising rainfed agriculture technologies

Incomes, household size

Conducted baseline survey, now writing a report

Cost of production

Yields

Farmgate prices

The above data is now feeding into developing the empirical business case for investing in rainfed agriculture – aimed at influencing government spending, the priorities of DFIs, and identifying clear opportunities for the private sector. This triple bottom-line business case seeks to provide cost-benefit assessments across three distinct areas:

1. Return to the farmer (increase in crop yield, climate change resilience),
2. Return for the environment (carbon soil sequestration, watershed management, groundwater recharge, PES)



3. Return for local agriculture value chains (job opportunities, specifically women and the young).

The first draft of this business case was tested on Forum participants and has been further refined with their inputs and is now being developed into a technical paper with an accompanying policy brief. This business case is important as it provides technical support to NGOs and other local organisations on how to attract financing to the extension services they offer farmers.



Image 4: Deep Bed Farming VS Ridges Demonstration plot in Malawi from season two during the February 2024 dry spell. Photo: Tiyeni

### 3. Communications

Through our communications, we continue to advocate for increased investments in African rainfed agriculture. Several of our communications outputs are delivered in collaboration with partners, in the effort to highlight partnership and create a greater outreach to investors and NGOs, to eventually succeed in matchmaking.

In 2023, the communications efforts focused on garnering attention to the Zambezi Rainfed Agriculture Investment Forum, to showcase TIARA as one of the first to conduct such a conference.

- [TIARA Annual update 2022](#)
- [Advocating for investments in African rainfed agriculture](#) Webinar held on 11 July 2023, in the run up to the Zambezi Rainfed Agriculture Forum.

This webinar presented an opportunity to explore ways for attracting finance to rainfed agriculture. The strategy was to create noise around the Forum and attract registered participants to ask any questions ahead of the Forum.

[Watch the webinar here.](#)

- [Anton Earle's video announcing the Forum dates](#)
- [How can food security be improved in Africa?](#) Podcast featuring SIWI
- [Why invest in rain?](#) An infographic to set build the case for investment. The infographics were published online and were presented on site at the Zambezi Rainfed Agriculture Investment Forum, for participants to get up to speed with ongoing issues, facts and figures.
- [Felix Ngamlagosi: A pressing need for governments to invest in greenwater](#) An interview with the Executive Secretary of the Zambezi Watercourse Commission (ZAMCOM) Secretariat.
- [Techniques that use rainwater effectively can help farmers break the subsistence cycle of farming](#) TIARA features in a podcast.
- [Green water investments – the future of Africa?](#) Thought piece ahead of the Forum.

- [It's time to invest in rain](#) Once the communications campaign around the Forum was complete, a newsletter was sent out to our LinkedIn audiences and registered Forum participants.
- [What's next for rainfed agriculture?](#) A post Forum-analysis.
- [Rainfed agriculture for a non-violent economy](#) Dr Rajendra Singh, former Stockholm Water Prize Laureate, reflects on how he inspired SIWI's Transforming Investments in African Rainfed Agriculture or TIARA project.
- [Rainwater is not seeping in:](#) Podcast featuring NGO Tiyeni and SIWI
- [Pledging to protect the land:](#) Podcast featuring NGO COMACO

## 4. Planned activities in 2024:

- With support from the local NGOs, in 2024, we will conduct a comparison examination of the data gathered on the farmed land during the first season. There will be a total of 4 planting seasons included in the assessment of the business case for investing in rainfed agriculture.
- TIARA and COMACO have joined to carry out carbon sequestration-related operations at the Zambia Pilot site. A workshop on capacity building will be held in 2024 to support peer-to-peer learning between policy makers and NGOs. The project's results on remotely quantifying stored carbon will be shared by COMACO as well as modalities of selling carbon removal units in the voluntary carbon market.
- Further development of the rainfed agriculture triple bottom-line business case through developing it into a technical paper and an accompanying policy brief.
- Capacity building for a network of regional champions in rainfed agriculture.

## Our partners

TIARA is hosted by the Stockholm International Water Institute (SIWI), and carried out in partnership with ZAMCOM, CIFOR and ICRAF.

Local NGOs:

1. [Farmers' Association of Community self-Help Investment Groups](#) (FACHIG) Trust
2. [Community Technology Development Organization](#) (CTDO)
3. [Tiyeni](#)
4. [Community Markets for Conservation](#) (COMACO)

TIARA is funded by the Leopold Bachmann Stiftung based in Switzerland.

## Our team



**Anton Earle**  
Director of SIWI  
Africa Regional Centre



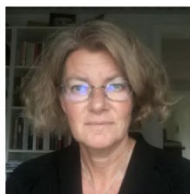
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