

## Introduction:

CIMMYT conducted breeding and Infrastructure needs assessment. This needs assessment was aimed at improving the efficiency of the ZARI breeding program. The goal of CIMMYT is to modernize the NARS breeding programs which will lead to increased efficiency. This will not only benefit Zambia but also other NARS programs in the region.

### Prioritization of recommendation/s:

- Digital equipment eg Scales, Tablets, seed counters
- Greenhouses for population development and screening
- Storage facilities
- Disease screening equipment (Motorized sprayers, Vacuum, deep freezer)
- Irrigation facilities

## Challenge

### • Key problem statement/s

Lack of infrastructure in a plant breeding program can lead to a variety of challenges that hinder the efficiency, effectiveness, and impact of the program. Below are key challenges:

- Prolonged breeding cycles due to lack of controlled environments and irrigation
- Reduced viability for germplasm due to poor storage
- Poor data collection and management
- Inefficient hybridization and screening due to lack of facilities

## Solutions

### Infrastructure support by CIMMYT after needs assessment

- Two greenhouses set up at Msekera
- 2 commercial boreholes approved and funded
- 540,000 ltr reservoir approved and funded
- 2ha irrigation plus fencing approved and funded
- Renovation of seed storeroom approved and funded
- Digital scales, tablets, and Seed counters donated to Legumes teams
- Training and access to BMS platform and other CIMMYT digital tools granted
- Cold freezer approved and funded for germplasm and ELS spore storage
- Vacuum and motorized sprayers approved and funded



# Capacity improvement conducted during 2024 in Zambia

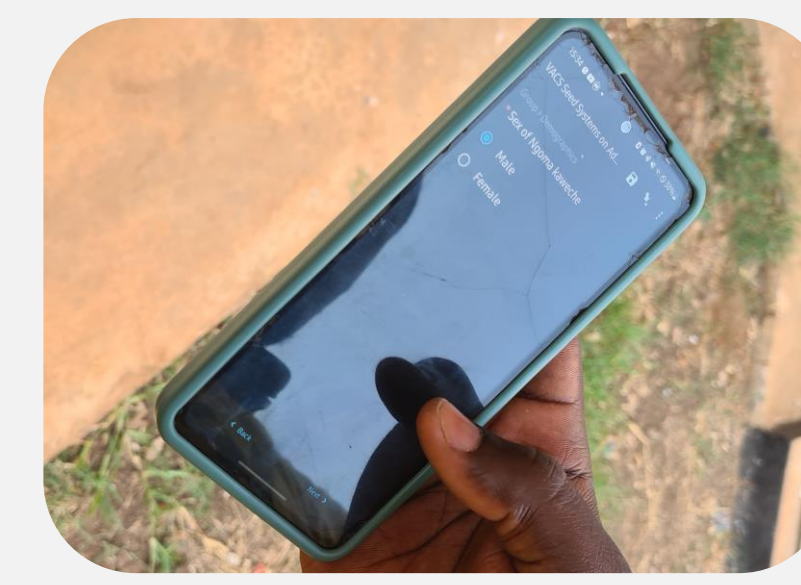
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## Key messages/Insights

Investing in infrastructure and human capacity building is essential for enhancing the efficiency, innovation, and impact of breeding programs to meet the challenges of food security, climate change, and sustainability. Through collaboration, we can ensure we have a food-secure world



## Current implementation status

**Greenhouse:** 2 greenhouses already constructed and handed over to ZARI

**Water Reservoir:** At procurement stage within ZARI. 70% of funds already disbursed to ZARI

**Irrigation and fencing:** 1 borehole done, Quotations submitted to CIMMYT for approval and funding for the rest.

**Digital tools:** Tablets have been delivered, Donation letter is already done for Scales, seed counter and Moisture Meters

**Disease Screening Equipment:** Process of acquiring quotations in progress.

## What are your plans to sustain?

### I. Revenue generation

- Royalty collection will help with revenue that will be used to regularly maintain infrastructure.

### II. Infrastructure maintenance

- Regularly inspect and maintain facilities
- Establish a maintenance schedule

### III. Human resource development

- 1. Continuously develop the capacity of researchers
- 2. Staff retention: Implement strategies to retain skilled staff

### IV. Partnerships and collaborations

- Maintain partnerships with CIMMYT, GRZ & PPPs
- Enhance and maintain regional collaboration

### V. Monitoring and Evaluation

- Develop indicators (KPIs) to measure impact
- Conduct regular reviews and assessments

## Acknowledgements

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