



Supporting rice sector development in Africa: Brief accomplishments and prospects for engagement with CARD members

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Progress in breeding & crop improvement

- **Replacing old varieties:** 18 new high-yielding varieties released in ESA with partners
 - 11 varieties in Burundi under a WB project (2 high Zn, 3 drought tolerant, 3 high yielding long grain, 1 RYMV resistant, 2 aromatic-Supa type.
 - Three varieties in Somalia
 - Two in Tanzania
 - One each in Kenya and Mozambique
- **Improving popular varieties in ESA:** drought, salinity & cold tolerance; Blast, Sheath Rot & RYMV resistance; & good grain quality – at advanced stages of evaluation.



Progress in crop improvement...

- **Expanding the breeding network:** From 19 locations in 2020 to 31 locations in 2022
 - Existing networks: Burundi, Kenya, Tanzania, Mozambique, Ethiopia, Zambia, Madagascar, Uganda
 - Recently added: DRC and Angola)
 - Pipeline: Somalia, South Sudan, Botswana, Sudan, Malawi
- **Breeding lines regularly shared:** for national nurseries: Mozambique (227), Zambia (200), Uganda (460), Ethiopia (460), DRC (354), Burundi (40).



Zinc grain-rich rice varieties released in Burundi (ISABU)



IR120687-B-60-1-2-B

- Irrigated lowlands
- Zn content: 21.5%
- Yield 5-6 t/ha
- Long slender grains



IR124029-B-13-1-1-B

- Irrigated lowland
- Zn content: 21.9%
- Yield 5-6 t/ha
- Long slender grains



Both released in the Philippines and Bangladesh

Pipeline: High iron & low Glycemic index Varieties



Breeding for resistance of major rice diseases in ESA

- **Blast** (4 genes)
- **Rice Yellow Mottle Virus (RYMV)**, (3 genes)
- **Sheath Rot Complex.**
- Sheath Blight,
- **Emerging:** Bacterial Leaf Blight (BLB) & Bacterial Leaf Streak (BLS)



Strengthening rice seed system value chain

Few models developed in the region (Kenya and MZQ)

- Established the Rice Value chain platform in Western Kenya;
- Engaging the rice value chain stakeholders in ESA (Farmers' cooperatives, NGOs [NEHCIP, LDRI, Kilimo Trust and Kilimo Nafakaz]; private sector and others)
- Trained 178 farmers and seed producers in Quality Seed Production and Seed business (100 in Kenya, 50 in Tanzania and 28 in MZQ)
- Establishing a digital seed demand-supply management system in Tanzania (SeedCast) through step-wise stakeholder consultation



Seed Production Trainings in Tanzania and Kenya



Seed Production Training in Mwea (Kenya), Jan 18-20, 2022

Seed Production Training in **Ahero** (Kenya), Jan 5-7, 2022

Seed Production Training in KATC Moshi (TZ), Jan 24-26, 2022



Regional engagements with CARD members: Example

SEED WITHOUT BORDERS REGIONAL COOPERATION IN SEED SECTOR



Recognition of similarity of policies and strategies helped in building trust to exchange knowledge and resources

- Harmonize seed systems and policies
 - ▶ Joint varietal evaluation and release
 - ▶ Recognition of evaluation data for similar agro-ecologies to reduce time for release
 - ▶ Shorten evaluation time for varieties developed via MABC
 - ▶ Acceptance of PVS data for varietal release
 - ▶ Pre-release seed multiplication & promotion
- Encourage private sector involvement
- Newly released varieties in one country to be released in other countries:
 - ▶ Immediately in areas of similar ecology
 - ▶ After one year of testing in other areas

INDIA



BANGLADESH



NEPAL



CAMBODIA



SRILANKA



BHUTAN



MYANMAR



Benefits for partner countries - SWB

- Immediate access to varieties of different food crops
 - Accelerate replacement of older varieties – cereals, root crops, vegetables, oil and fiber crops, sugarcane
 - Other crops to be included
- Few countries in the region showing interest
- Strengthen SSC
 - Private sector engagement
 - Improved seed systems
 - Knowledge sharing and capacity strengthening
 - Cross border trade
 - Sustaining food & nutrition security & buffer against disasters
- Resource mobilization



Centre of Excellence in Rice Value Addition (CERVA) at ISARC

- To harness the native genetic wealth in rice for premium quality and enhanced nutrition
- Develop nutritious rice varieties with low GI, high antioxidants and high micronutrients
- Support mainstreaming food safety evaluation to ensure delivery of safer products to consumers
- Develop rice value-added food products for domestic & export market penetration

Food Safety

- Heavy metals
- Pesticides
- Mycotoxins

Grain Quality

- Head rice yield
- Appearance
- Amylose content
- Texture



Grain & Nutritional Quality

- Low glycaemic index
- Micronutrients
- Nutraceuticals

Sensory & Product Development

- Value added products
- Consumer acceptance
- Entrepreneurship



Pathology Network: A Multi Crop Protection Community of Practices created in SSA with 8 objectives

1. Map available crop protection expertise (NARES and CG) within SSA
2. Understand capacity which exist at various centers within SSA
3. Survey biotic stresses for rice, AVISA crops and other crops beans across SSA countries
4. Develop and share standard protocols for screening of various biotic stresses, breeding material and crop protection solutions
5. Define capability needs to serve the region and proceed with capacity building/strengthening for NARES particularly
6. Develop joint proposals and actions
7. Knowledge exchange on the current challenges, solutions and scientific advances in crop protection for the target crops
8. Ultimately, contributing to food security in SSA by protecting crops from yield losses due to biotic stresses

Partners involved in the 1st meeting and training of the Crop Protection CoP in SSA



BURUNDI, Botswana, Colombia, DRC, Ethiopia, Ivory Coast, Kenya, Madagascar, Malawi, Mali, Mozambique, Philippines, Senegal, Tanzania, Uganda, Zambia





Thank You

