

The African Centre for Crop Improvement (ACCI)

– contribution to plant breeding
Education in Africa

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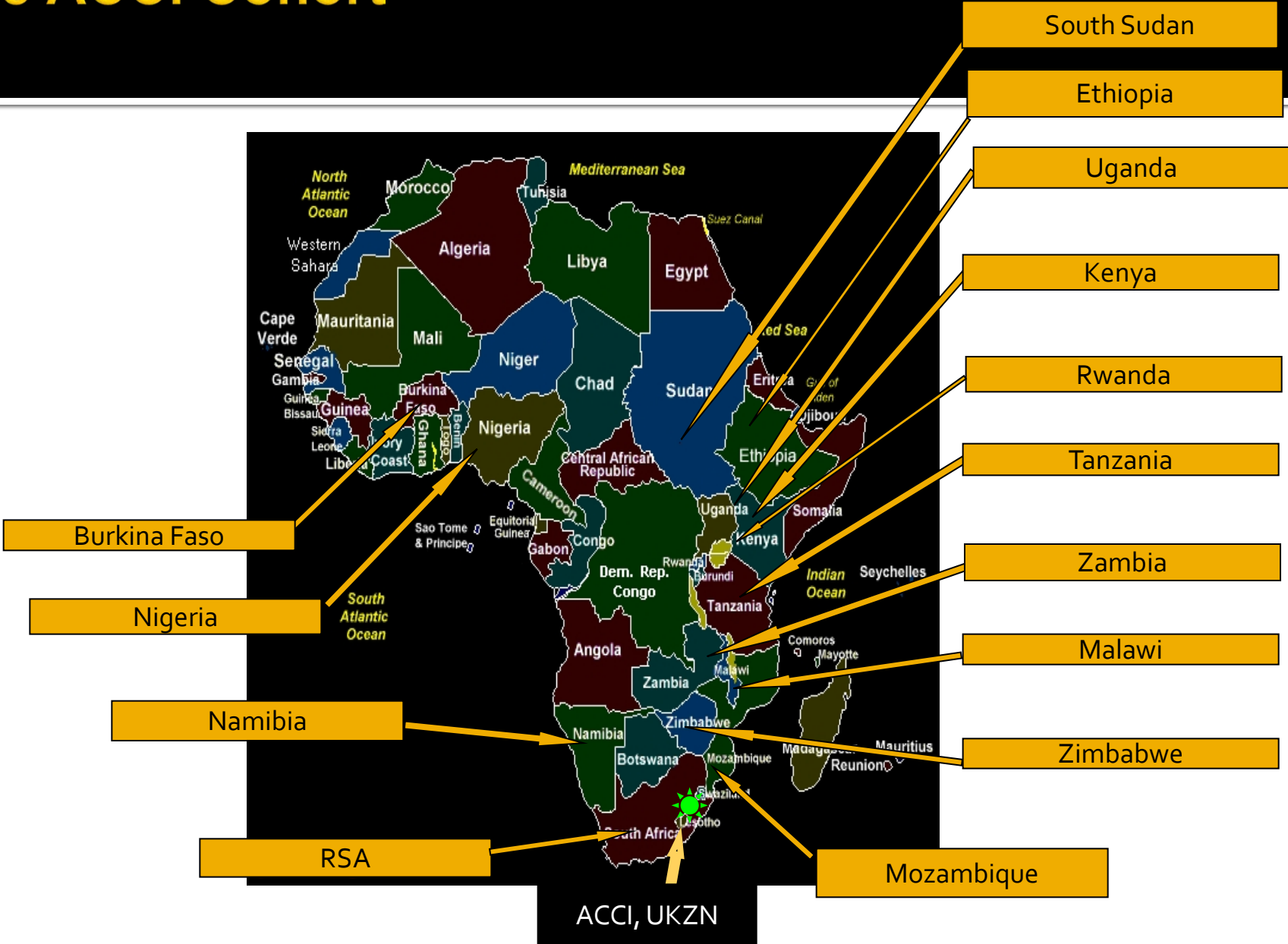
Consultative workshop
Demand-led plant variety design
Nairobi, Kenya, 14-15 May 2014



The African Centre for Crop Improvement

- Situated at the University of KwaZulu-Natal, South Africa
- Started in 2002 with core-funding from the Rockefeller Foundation (phase I); since 2007 funded by AGRA (phase II)
- **Mission** – to train PhD level African plant breeders, on African food security crops, in Africa
- Students from 16 Southern & Eastern African countries, (2 students from West Africa in Phase I)
- Trains 8 PhD's p.a. in plant breeding with coursework in SA (2 years) & Research in-country (3 years)
- @72% throughput rate

The ACCI Cohort



Who leads the Cohort?



The Focus on Plant Breeding

- Yield potential can be realized with **improved** and **demand-led** varieties
- Breeding can minimize losses (abiotic and biotic stresses), without expensive inputs
- Breeding was central to the First Green Revolution: **technology-driven productivity** of wheat and rice, well-adopted in Asia and S. America
- BUT - needs downstream seed systems to deliver new, improved varieties to farmers

ACCI's Research demand-led variety development

- **Demand-driven research: international reviews linked with Cornell University and other resource centres**
- **Each student's PhD study is a start of long-term defined breeding project for variety development NOT of some intellectual interest**
- **The breeding research integrates socio-economic aspects, e.g. farmers-preferences and -demand**
- **The breeding project is linked with the existing national breeding program to develop farmers'-preferred varieties (e.g. integrated pest and disease and pest management; drought, heat or salinity tolerance)**

Achievements

- 56 PhDs graduated; 45 more from Phase 2
- 100% retention in Africa
- 60 new cultivars developed + pre-breeding gains

Beans, Cowpea, Pigeonpea,
Cassava, Finger millet,
Sorghum , Maize, Rice,
Sweetpotato, Banana, Potatoes,
Faba bean, Tef, Wheat



Possible drivers of widespread technology adoption: lessons from the ACCI training

- **Specificity to country, crop and agro-ecology**
- **Combined use of technologies**
- **Tackle the barriers to adoption**
(access to: capital, extension services, seasonal labor, inputs, customary practices due to risk of failure)
- **Market (costs, market readiness, supply chains and partners for storage and distribution)**
- **Shift in land use, crop mix, input use, etc.**

The future

- **East & Southern Africa needs another 200-400 plant breeders**
- **ACCI is committed to produce world class plant breeders, who will succeed in Africa, despite tough working environments, limited resources and with relatively unknown crops**
- **ACCI needs:**
 - continued funding support**
 - networking with PB programs**
 - research support and facilities**