Development and Implementation of OneRice Breeding Strategy

IRRI case study

IRRI Team

Before OneRice....

- Lack of a unified breeding strategy
- No formal market segments and product concept
- Heavy project dependence
- Pre-breeding- not centralized
- Uneven breeding cycles lengths - variable genetic gains
- No routine regional testing of new breeding cohorts
- Uneven application of technologies
- Reduced communication and collaboration
- End to end product delivery was missing

CGIAR   IRRI

Vision/Outlook:

- Reducing the breeding cycle length- increased rates of genetic gains

- Programmatic alignment on OneRice program (IRRI, AR, CIAT)

- Centralization and standardization for quality outputs of IRS

- Joint progress with NARES breeding networks

Barriers to implementation

- Changing mindset of people
  - Partnership vs service provision
  - Support from institute
  - Silos - parallel work streams
- Building capacity
  - planning and resources
  - seed storage/warehousing
- Unusual circumstances - COVID

How did we deal with the barriers??

- Reinforcing the partnership - pooled resources
- Joint ownership between breeding and shared services
- Demand and supply planning
- Various cross-functional task force initiatives
- Periodic joint reviews
- Joint proposals

Timeline....

2018	2019	2020	2021	2022

2018
- Creation of Integrative Research Support (IRS) platform

2019
- Development of OneRice Breeding Strategy and Framework

2020
- OneRice launched
- Seed-to-seed or line development workflow established
- Market segmentation and product pipeline established

2021
- Activity consolidation
- Complete centralization
- Consolidated planning
- NARS breeding network expansion

2022
- Program-matic alignment
- Complete breeding program alignment to pipelines
- Total unification of operation demand and supply

Note: The process of modernization of breeding programs began as early as 2014

CGIAR IRRI

OneRice: what is different?

Key features:

1. End-end product delivery framework
2. Market driven product concepts
3. Elite x Elite breeding
4. Rapid generation advance
5. Genomic selection
6. Centralized pre-breeding
7. Integrated shared services
8. Seed systems focus
9. Establishing CG-NARS breeding network
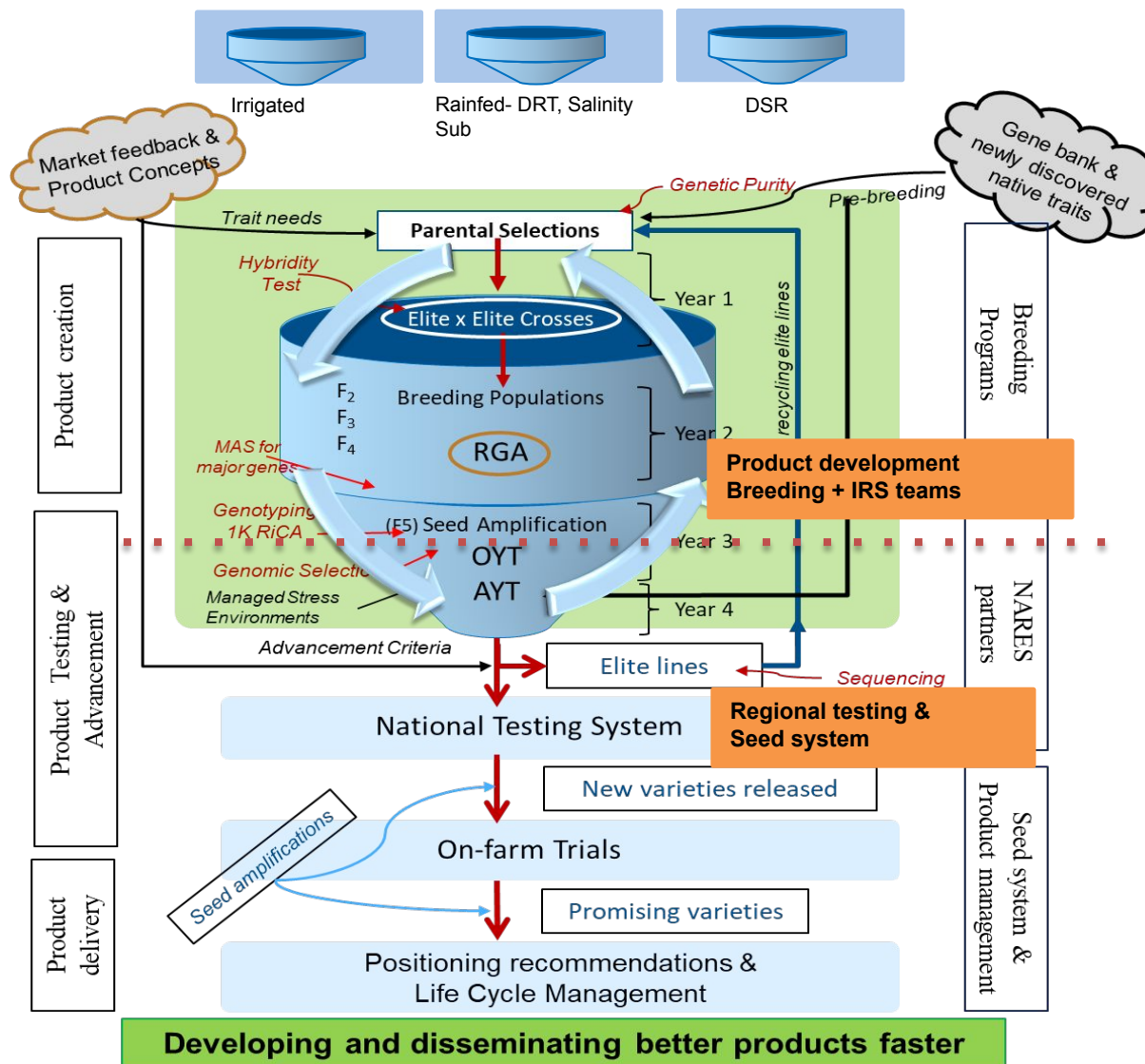
Developing and disseminating better products faster

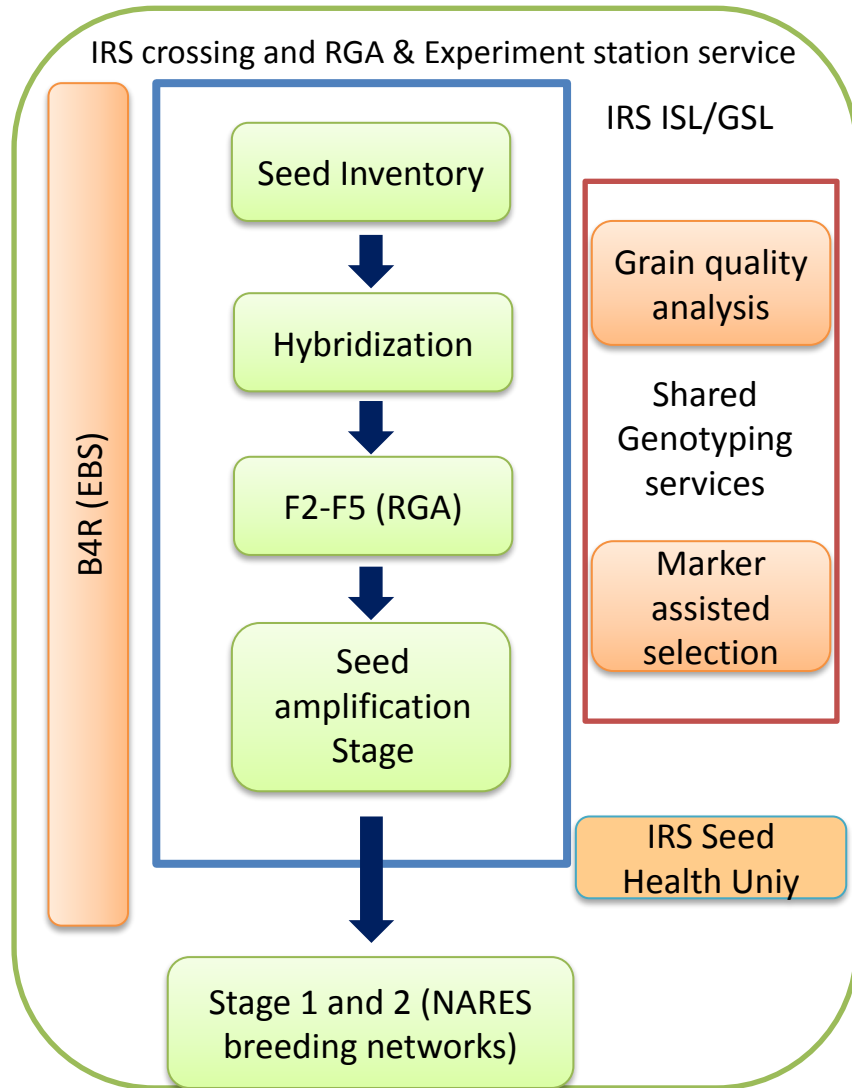# NARES engagement: Regional breeding hub and spokes model
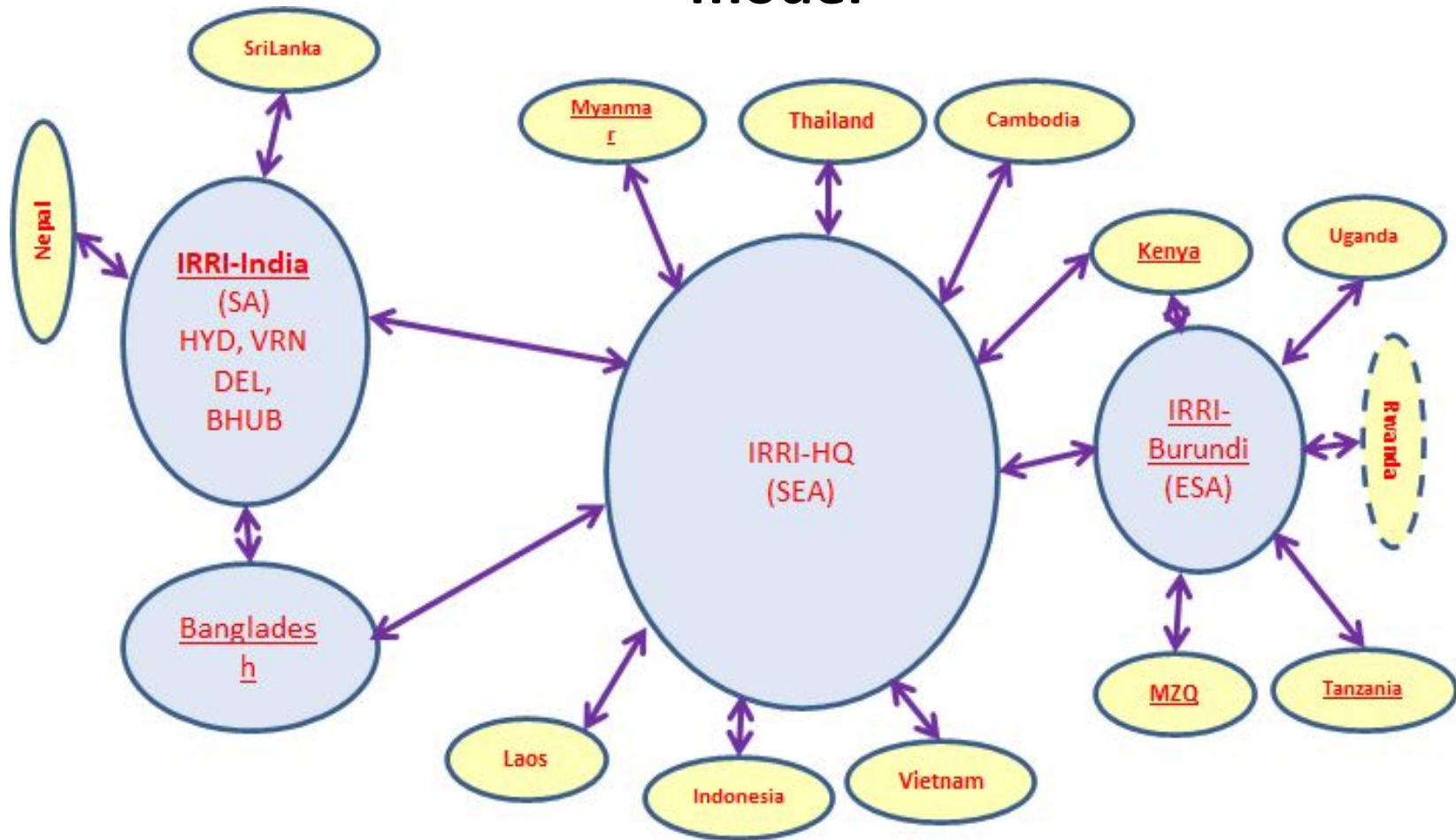
Effective NARES management and approach

Centralized breeding operations and shared services

IRS crossing and RGA & Experiment station service

IRS ISL/GSL

- B4R (EBS)

- Seed Inventory
  ↓
- Hybridization
  ↓
- F2-F5 (RGA)
  ↓
- Seed amplification Stage
  ↓
- Stage 1 and 2 (NARES breeding networks)

- Grain quality analysis

Shared Genotyping services

- Marker assisted selection

- IRS Seed Health Uniy

- Breeders can focus on the science, leaving the operations logistics to the shared services
- Economies of scale – lower cost
  - Better utilization of the available capacity
- Improved efficiency - More work with less people
- Standardization – quality output, quality management
- A system of planning and forecasting
- Professionalization of service operations

One Global CG Rice Breeding Program - moving forward together

OneRice Development team
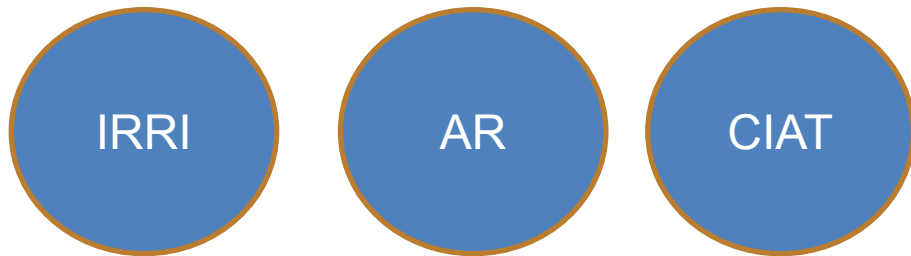
Focus Areas for of breeding program alignment

- Market research and breeding pipelines
- Centralized prebreeding
- Breeding programme management
- Centralized service and mechanization
- NARS Breeding networks and capacity building
- Seed systems

Joint needs assessment and priority setting as one program

Sankalp Bhosale
Jauhar Ali
Damien Platten
Baboucarr Manneh
Joshua Cobb

Nana Kofi - Africa Rice
Ricardo Oliva - IRRI
Shalabh Dixit - IRRI
Vikas Kumar Singh - IRRI
Shoba Venkatanagappa - IRRI
Alexis Ndayiragije - IRRI
Eduardo Covarrubias - EiB
Maria Fernanda Alvarez - CIAT

Scientists and Experts from across:
- IRRI
- AfricaRice
- EiB
- CIAT

Lessons learned…..fundamentals for building a robust organization

☐ Organizational structure, vision and mission

- One CGIAR: Alignment and teamwork
- Core business, resources and capabilities
- Clear KPIs and roles
- Transparency and accountability

☐ Change management

- clear communication
- engagement and buy-in

☐ Planning and execution

- Road mapping
- Unified operational demand and supply planning system
- Milestones and progress monitoring

Thank you!