Excellence in Breeding and RTB Breeding CoP

Sweetpotato Breeders Meeting 2018, Nairobi, Kenya
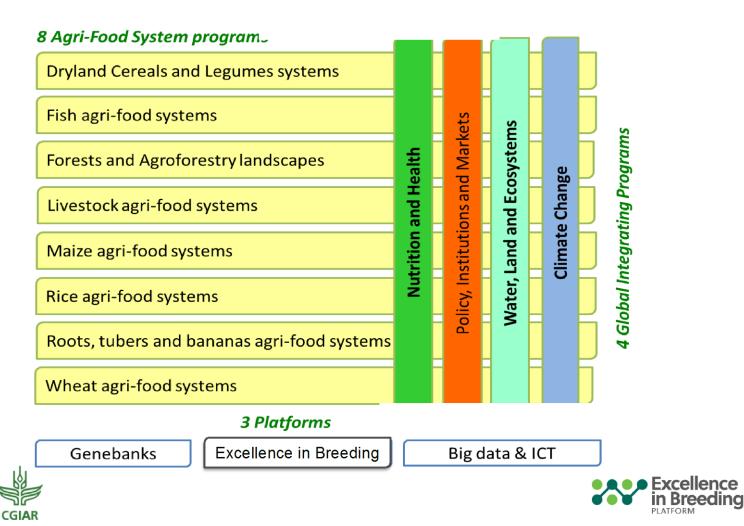
Ted Carey, CIP

SWEETPOTATO ACTION FOR SECURITY AND HEALTH IN AFRICA

What is EiB and RTB Breeding CoP

- Excellence in Breeding platform managed by CIMMYT
  - All CGIAR breeding and some NARS "obliged" to participate. All may participate.
  - Provide services (as we heard from from presentation on IGSS - BecA)
- RTB Breeding CoP
  - Quite a bit about trait harmonization
  - Searching for a logic (which must be there)

The CGIAR Portfolio 2017+

8 Agri-Food System programs

- Dryland Cereals and Legumes systems
- Fish agri-food systems
- Forests and Agroforestry landscapes
- Livestock agri-food systems
- Maize agri-food systems
- Rice agri-food systems
- Roots, tubers and bananas agri-food systems
- Wheat agri-food systems

4 Global Integrating Programs

- Nutrition and Health
- Policy, Institutions and Markets
- Water, Land and Ecosystems
- Climate Change

3 Platforms

| Genebanks | Excellence in Breeding | Big data & ICT |

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Five focal areas = Modules

Module 1 — Breeding Excellence

Module 2 — Trait discovery and breeding tools and services

Module 3 — Genotyping / sequencing tools and services

Module 4 — Phenotyping tools and services

Module 5 — Bioinformatics and data management tools and services

Creating synergies to accelerate genetic gains of breeding programs targeting the developing world

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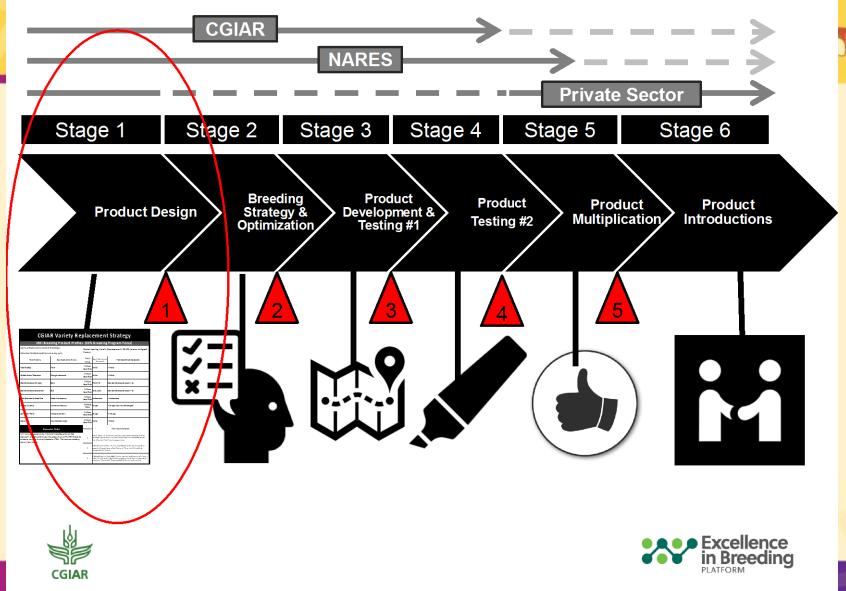
Priority Traits for Breeding Products

for Demand Led Breeding Program

George Kotch
May, 2018

Module #1 – Product Advancement (Stage Descriptions)

The Problem We Are Trying to Solve

- Increased emphasis on developing a demand based product design (Stage #1) using cross functional teams

- Increase breeding efforts focused on demand led product design

- Increased need to measure breeding program success against a defined target by using a defined product advancement process

- Well designed product profiles increase our chances for success versus not doing them..

+ 4.6 X improvement when we better understanding the client's needs
+ 1.6 X improvement when we "upfront plan"
+ 2.0 X improvement when products are designed by cross functional teams
+ 4.6 X improvement if you measure output against the product design

Lean, Rapid and Profitable New Product Development, 2005, Robert Cooper and Scott Edgett

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What is a Product (Variety) Replacement Strategy

- The Strategy of Product Replacement is a targeted process of replacing the **Market Leading Variety**.
  - If breeders don't know the varieties they are replacing than their chance of impact is severely diminished and their ROI is low

- There are **"NO PERFECT" Varieties**
  - Releasing client-led varieties should be driven by improvements on the current varieties being used by client as the foundation

- **Product Profiles** are the **product design blueprints** that support the Variety Replacement Strategy

- If breeding teams are not trying to replace varieties used by the value chain, **product profiles** should be based on market trends. These could be referred to as market-led varieties.

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Definitions

- Product Profiles: Are Product Design that are designed in Stage #1 of the Variety Advancement system. They are designed by a cross functional team to remove the bias of any single shareholder in the advancement system. The design if targeted so the breeding team could focus on a limited amount of economically important traits or trait combinations.

  – Product Profiles are used to support a variety replacement strategy
  OR
  – Product Profiles are used as a template for market creation but based on market knowledge and trends. This is kicking the ball to where the player (market trends) will be.

  – Product profiles are not **a Laundry List** of what the perfect variety would look like. Using the *trait dictionary as your focus to build a product profile is not effective* if you wish to have client driven impact. Product profiles should be created from client or market intellegence.

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Example of a Variety Replacement Strategy (Rice)

- In the current environment, breeder can't hope to create impact if their program is not targeted.

- Product Profiles are well researcher guides of attributed needed to replace key market varieties.

- A Variety Replacement Strategy is created so the majority of the breeding program resources are dedicated to replace a "Mega Variety".

- The Variety Replacement Strategy Drives Trait Priority Investments from the client through breeding into basic research

- Success is determined on how introductions compare to the varieties in which the breeder seeks to replace.

Rice science for a better world

IRRI

Breeding Program Assessment Tool is associated with EiB

Thank you for your interest!

But then George wrote and said:
- Product advancement rather than stage gates
- Rather than product profiles, talk about variety replacement or market changing strategy

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RTB Breeding CoP

- In the Discovery cluster to link with NextGen
- Has a key task of coming mapping out trait priorities (variety replacement strategies?)
- Opportunities for RTB Breeding training – data management, statistical tools (BTI bases / HIDAP and CIP tools)
- Can be a very convenient In many cases, NARS breeders
- RTBFoods brings all the RTB Breeders together

Stay tuned
Stay engaged
Strive for excellence
The squeaky wheel gets the grease!
Thank you