BamYIELD
A model international underutilised legume research and breeding programme using bambara groundnut (*Vigna subterranea* (L.) Verdc.) as an exemplar species

Visit:
LAB 6
LAB 2
CE ROOM
LAB 6 & PREP ROOM
LAB 6

Research Value Chain

- **BG sequencing**
- **Cropstore and Barcoding**
- **Drought QTL**
- **Association Genetics Panel**
- **Seed Storage**
- **OPUCIT**
- **Multicohort Field Trials**
- **Root nodulation and rhizosphere**
- **Photosynthetic Machinery**
- **Seed propagation**
- **Parameterisation**
- **CropLink modelling**
- **GRASP-GFS**
- **Full nutrition profile of BG**
- **Vacuum fried BG**
- **BG Flour**
- **BG Products**
- **Fish feed component**
- **BG Cooperative model**
- **Baseline studies**
- **Africa**
- **Consumer behaviour (STA)**
- **BG taste test**
- **Market survey**
- **Enhancing utilisation**

Data management and authenticity tracing using field and laboratory information management system (FLIMS)

Figure 1: BamYIELD comprises distinct projects along the Research Value Chain (RVC) to maximise the development and contribution of this crop for food, nutritional and income security and to foster global collaborations and partnerships. Visit the different labs in Dome C during the CFF launch to find out in more detail about the different themes and projects within BamYIELD.

Figure 2: BamYIELD global research network consisting of research centres, CG centres, universities and service providers.

Figure 3: BamYIELD approach for breeding, emphasizing the importance of end user preference and farmer participation.
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Our exemplar crops

Bambara groundnut (*Vigna subterranea* (L.) Verdc.)

Winged bean (*Phosphocarpus tetraglobulus*)

Common names: Kacang Poi (Malaysia), Kacang Bogor (Indonesia), Tu A Rang / Tu a Met liau (Thailand), Nyimo beans (Zimbabwe), Jugo beans (South Africa), Voandzou (Benin)

**Strengths**
- Drought tolerance
- Grows well in semi-arid and tropical environments
- Good adaptability
- Seeds are nutritious
- Nitrogen fixing legume
- Tolerates poor and low pH soils

**Drawbacks**
- Photoperiod sensitive for pod-filling
- Lack of commercial varieties
- Limited markets
- Few value added products
- Lack of comparative data to other legumes

**Potential**
- Food security
- Income generation
- End-user driven variety development
- Human dietary diversification
- Animal feed

Common names: Kacang botol (Malaysia), kacang belimbing/botor/kecipir (Indonesia), Shikaku-mame (literally "square bean"; Japan), Le foie carré (Mauritius)

**Strengths**
- Grows in hot and humid equatorial countries and parts of Southeast Asia
- Nitrogen fixing legume
- Seeds are nutritious, with protein levels comparable to soybean
- Every part of the plant, (shoots, flowers, leaves and seed pods and seed) is edible

**Drawbacks**
- Need for trellis support to grow
- Vining and indeterminate growth habit
- No mechanisation
- Labour intensive harvest with limited shelf-life of fresh pods

**Potential**
- Food security
- Income generation
- Human dietary diversification
- Multiple product development using different parts of the plant
- Partial replacement for soybean imports

Other legumes we are interested in...

- Hyacinth bean (*Lablab purpureus*)
- Moth bean (*Vigna aconitifolia*)
- Horse gram (*Macrotyloma uniflorum*)