2 years

**Discovery** –
Environment characterization / Yield gap analysis / Trait potential analysis / nutritional trait analysis

Characterization of potential wild parents

Cross with promising wild with elite parents

Functional population genetics analysis of relevant mutation / resistances

**Breeding** –

Populations available that could be tested for traits of interest (yield potential, AB, etc.).

Crossing of pre-breeding lines
5 years

**Discovery** –

BCNAM populations available in several elite backgrounds of different countries involved in the IL Mapping population development

QTLs mapped for traits of interest

**Breeding** –

Pre-breeding lines available for multi-location testing

Linked markers deployed in breeding
10 years

**Breeding –**

Release of varieties with tolerance to key constraints

Diagnostic markers for key constraints

Partners engaged and able to develop and use new/better crop packages (bio-fortified seeds, etc...)

**Discovery –**

Modern phenotyping support to breeding (HTP, databases,

A new farming system – GxE packages? (early soil cover, resistant to density, etc...