### Bottlenecks

#### Seed characteristics
- High multiplication rate
- Small volumes needed per ha
- No visual difference between grain and seed
- High level of seed not true to type
- Seed replacement every 4 years

#### Demand characteristics
- High preference for local varieties
- High use of home saved seed – little incentive to buy seed
- Some varieties have a niche market

#### Regulatory
- Low capacity for certification
- NTR disincentive for institutes to produce EGS efficiently at ZARDIs
- Limited public investment in variety development
- Minor cereals are low priority crops

#### EGS production
- Breeders use out-growers with limited supervision out-growers
- Low quality EGS
- Low volumes needed
- Extremely unpredictable demand

### Proposed solutions to bottlenecks

#### Niche Market Archetype for private varieties
**Objective:** Provide high quality seed demanded by processors through the private sector

#### Public Archetype for public varieties
**Objective:** Dissemination of public varieties in a cost-effective manner

#### Roles and responsibilities public/private partnership

##### Breeder seed
- Breeders produce sufficient quantities of breeder seed for further research
- ZARDIs produce required volumes of breeder seed at cost-recovery basis, under supervision of breeder
- External inspection by NSCS

##### Foundation seed
- Foundation seed produced at Institute (ZARDIs), SC, LSBs under supervision
- External inspection by NSCS

##### Commercial seed
- Mainly LSBs producing QDS
- External inspection by NSCS for certified seed and DAOs for QDS

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**Private varieties**
- SC

**Public varieties**
- NARO
- SC
- ZARDI
- SC
- LSB

**Seed companies**
- Import
- Local seed businesses
- SC

**Marketing**
- Niche market
- Agro-dealers
- Institutional buyers
- Farmer ass/Coops

**Farmers**