



RESEARCH  
PROGRAM ON  
Grain Legumes and  
Dryland Cereals



Photo: ICRISAT

GLDC is a global network of partners that aims to increase the productivity, profitability, resilience and marketability of grain legumes and dryland cereals in sub-Saharan Africa and South Asia.

**The CGIAR Research Program on Grain Legumes and Dryland Cereals (GLDC) fosters demand-driven innovations for the drylands, to transform the underperforming agri-food systems, boost food and nutrition security, and increase incomes and resilience of smallholder farmers.**

Home to nearly a third of the world's population, global drylands face a multitude of challenges including frequent droughts, poor soil fertility and high climate variability. In particular, the sub-Saharan Africa and South Asia regions are confronted with acute poverty, malnutrition, adverse impacts of climate change and land degradation. Economic stability as well as nutrition and food security have deteriorated due to underperforming agri-food systems.

GLDC aims to transform these systems by delivering greater crop technologies, productivity and economic gains from market linkages and value-chain development. To achieve these goals, GLDC focuses on nine priority crops:

- ▶ Six legumes: chickpea, cowpea, pigeonpea, groundnut, lentil and soybean
- ▶ Three cereals: pearl millet, finger millet and sorghum

Resilient to harsh weather conditions and rich in micronutrients required for human growth and development, legume and cereal crops are the main staple foods in the diets of millions living in the drylands. Research in pre-breeding, trait discovery and variety and hybrid development of grain legume and cereal crops will further improve their nutritional quality and yield capacity.

GLDC harnesses the power of partnerships to integrate farm and household management and achieve sustainable transformation of agri-food systems, reduce poverty and malnutrition, enhance resilience to climate change and reverse soil degradation. GLDC conducts research in 13 priority countries across sub-Saharan Africa and South Asia.

GLDC builds on the work completed by three CGIAR Research Programs from 2012 to 2016, including Grain Legumes, Dryland Cereals and Dryland Systems.

## What We do

GLDC's research comprises five flagship programs:

### Flagship 1: Priority Setting and Impact Acceleration

GLDC research is demand-driven, outcome-focused, inclusive and scalable with high potential for large impact.

### Flagship 2: Transforming Agri-Food Systems

Improved profitability, productivity and sustainability of smallholder farming systems using on-farm and in-household innovation to ensure household nutritional security and enhanced income generation through integrated crop, tree and livestock production systems.

### Flagship 3: Integrated Farm and Household Management

Strengthened agri-food system mechanisms to respond and adapt to context-specific and evolving needs of women, men and young farmers, value chain and governance actors.

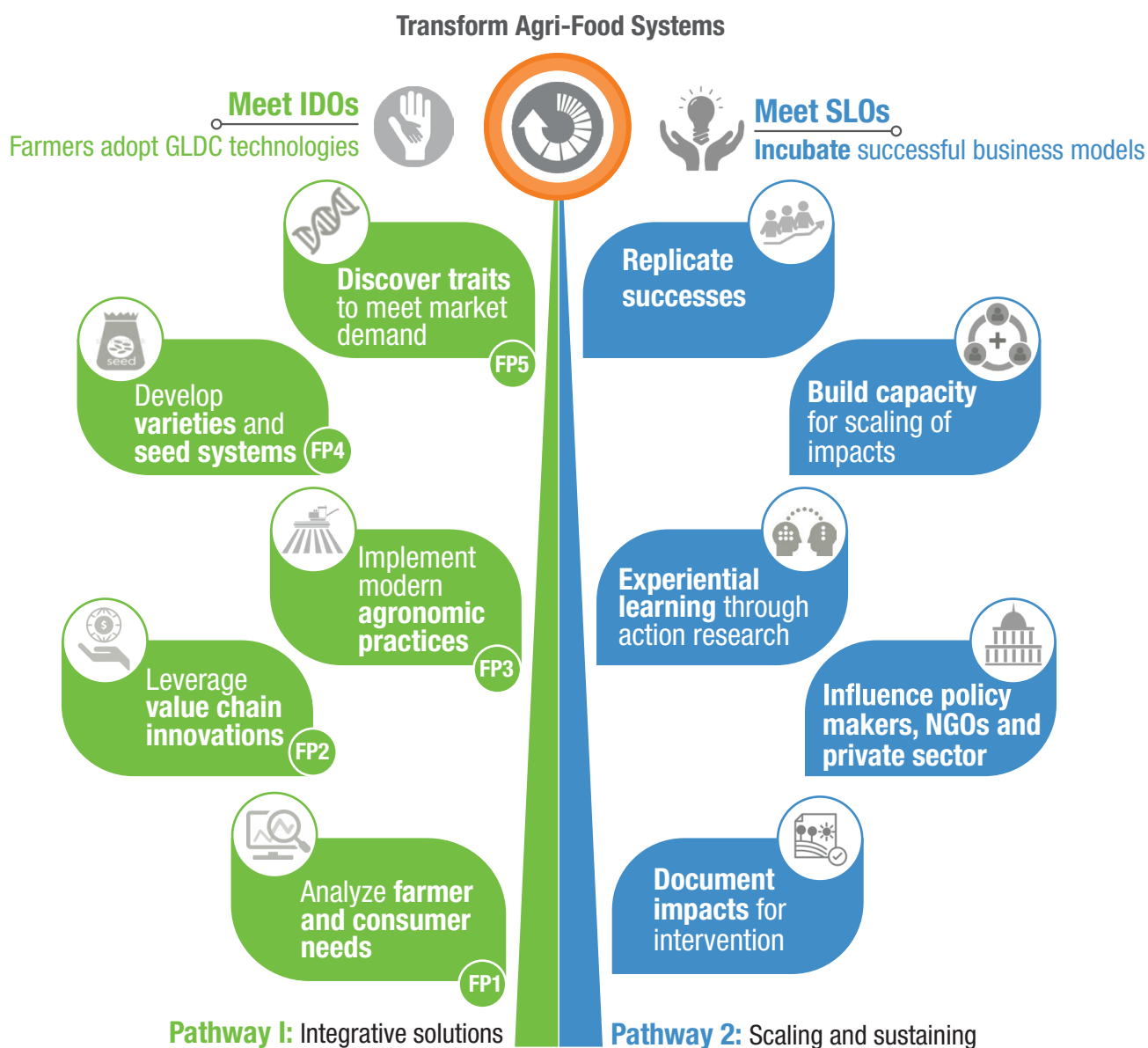
### Flagship 4: Variety and Hybrid Development

High-yielding, nutrient-dense and market-preferred GLDC varieties and hybrids will be made locally available and utilized by women, men and young farmers, and value chain actors.

### Flagship 5: Pre-Breeding and Trait Discovery

Widened genetic base of GLDC crops provide an extensive toolkit of modern genomics, genetic enhancement, breeding tools and high precision phenotyping for efficient breeding.

## How We Do It





## Where We Work

GLDC is operating in 13 priority countries in Africa and Asia, and with nine first-order priority crops.



Photo: ICRISAT

## Legumes for poverty alleviation, nutrition security and sustainable development

Global trends show increased consumption of legumes and availability of value-added products; in parallel, there is a growing trend of legume production in many countries, including India, Myanmar, Ethiopia, Australia and USA, driven by area and productivity.

The availability of short-duration varieties (e.g. chickpea and lentil) has helped in expanding area of legumes to new niches and sustainable intensification of cropping systems. Progress has also been made in biofortification of legumes and in the development of genomic resources for food legumes.

## Three sorghum varieties released in Nigeria

Parbhani Nigeria's National Committee on Variety Naming, Registration and Release approved the registration and release of two medium-maturing sorghum varieties, SAMSORG 47 as ZAU-NA-INUWA, SAMSORG 48 as KAURA BORNU, and an early medium-maturing variety, SAMSORG 49 as CF35:5.

SAMSORG 47 was developed from indigenous sorghum germplasm materials through pure-line head-to-row selection. It has desirable agronomic traits such as medium and uniform height, long and semi-compact panicles with bold testa-free yellow grain and stay green tendencies. SAMSORG 48 (KAURA BORNU) was developed from sorghum germplasm materials indigenous to North-Eastern Nigeria.



Photo: ICRISAT

## Impacts by 2022

By 2022, the GLDC partnership aims to:

- ▶ support up to 8.9 million farm households to adopt improved crop varieties
- ▶ assist at least 4.4 million people exit poverty
- ▶ ensure that more than 12.7 million people meet daily nutritional requirements
- ▶ enable inclusive growth for all smallholders – around half of them women

To achieve these outcomes, GLDC leverages its partnerships for integrated research and development which will lead to improved capacity of grain legume and cereal agri-food systems and market and policy innovations.

Research findings will help design interventions that build on synergies in cereal-legume-tree-livestock systems. Advances in these areas will help reduce poverty, improve nutritional and food security, and ensure environmental sustainability and economic growth.

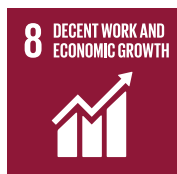
## Partnerships for Impact

Collaborative partnerships are important to the success and impact of GLDC research.



## Working to Achieve the Global Goals

GLDC will deliver on 11 of the United Nations' 2030 Sustainable Development Goals



We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund  
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