

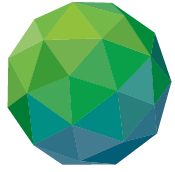
GREEN
CLIMATE
FUND

GCF REGIONAL DIALOGUE

with MIDDLE EAST & NORTH AFRICA

Rabat, Kingdom of Morocco
24–28 June 2024





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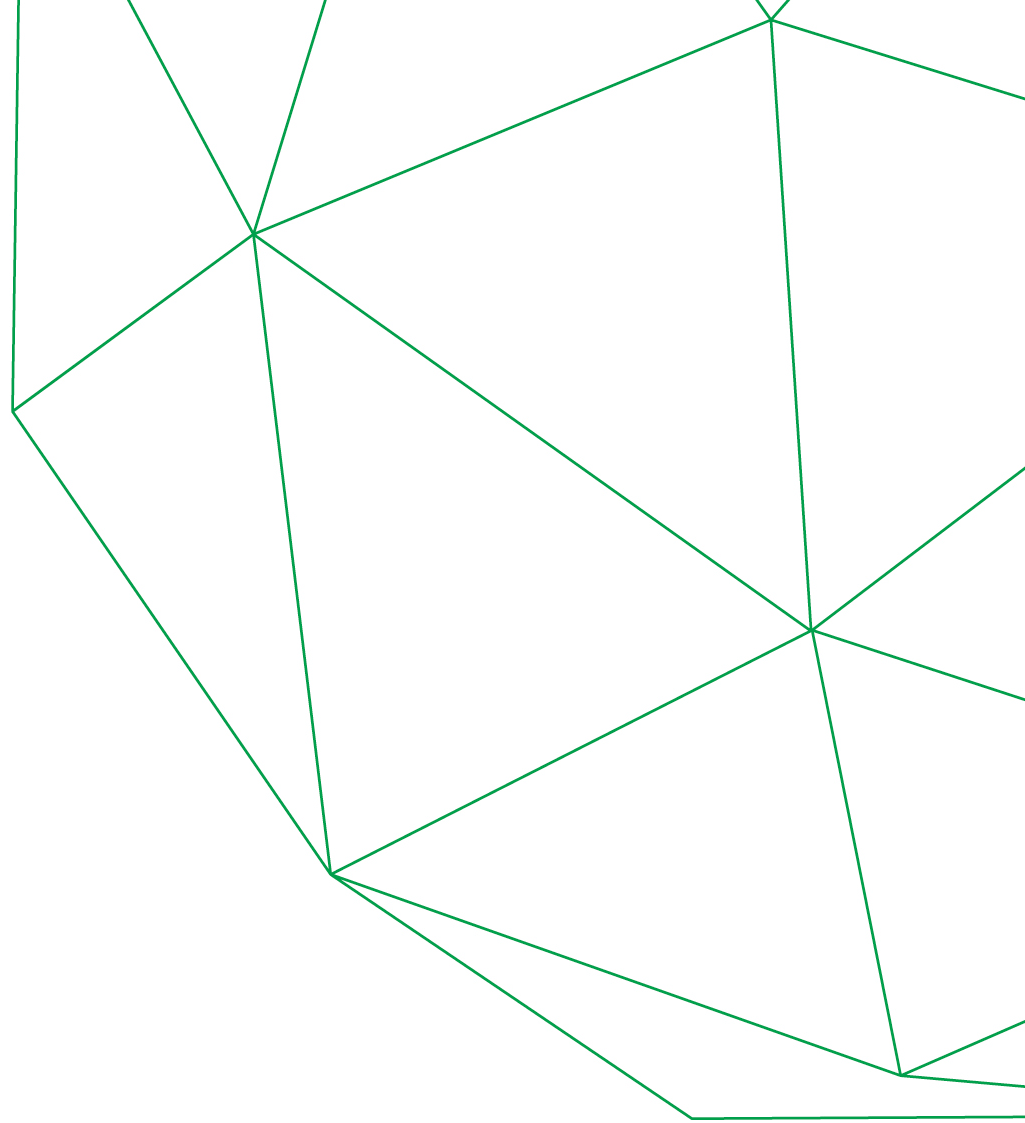
INRA & ICARDA

**Decades advancing
agricultural livelihoods
through innovative solutions**

Dr. BENABDELOUAHAB Tarik, INRA, Morocco

Rabat, Kingdom of Morocco

24–28 June 2024



Moroccan agriculture faces a number of challenges



FOOD SECURITY



CLIMATE CHANGE



CONSUMER/MARKET TRENDS



FOOD SAFETY



RAPID TECHNOLOGY PROGRESS



ECONOMIC AND SOCIAL DEVELOPMENT



NATURAL RESOURCES SUSTAINABILITY

National Institute of Agricultural Research



INRA, is a public body under the auspice of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests of Morocco

*Committed to Resilient, Sustainable
and Competitive Agriculture for Food Security*

Our mission is to participate in the sustainable development of Moroccan agriculture and the conservation of its natural resources :

- To produce knowledge and technologies related to anticipating the future of Moroccan agriculture.
- To propose practical solutions to adapt to Climate Changes and mitigate their intensity

INRA & ICARDA cooperation under Morocco's GG Strategy



50% Increase in
yields by 2030



Development of
Digital agriculture



Development of
new varieties



Soil conservation



Water efficiency
improvement



Dryland Agrobiodiversity Genebanks



Enriched Collections

Integration of novel diversity through gap analysis.

Management of over 70,000 accessions, with 1,443 unique landraces preserved across the country.



Best Practices

Application of superior regeneration, characterization, and conservation techniques.



Pre-breeding Innovations

Annual generation of ~100 new crosses combining modern germplasm with genebank holdings for enhanced diversity and breeder traits.

Resource Utilization

Strengthened pre-breeding efforts and use of FIGS for efficient genetic resource mining.



1,443
Landraces
Morocco



100
Crosses
Pre-breeding



70,000
Accessions
In Morocco

Breeding Climate-Smart Crops



**7 mandate crop
Species**

Bread wheat, durum wheat, barley, lentil, chickpea, faba bean and grass pea.

Team

> 47 breeders and staff are involved in a process of testing more than 50,000 lines

Research stations

More than 200 ha each year used in breeding



16 ha G1 seed

6 Demonstration platform

>20 Varieties have been developed 2015-2022

Example Variety Jawahir registered in 2023



**7
Crops**



**> 200 ha
Trials**



**47
Breeders and staff
In Morocco**

Conservation Agriculture (CA)



Collaborative efforts to support Morocco's commitment to achieve soil conservation practices on 1 Mha of land, by 2030.

Core Practices:

- **Minimal Tillage:** Preserves soil structure and fertility.
- **Diverse Crop Rotations:** Enhances soil nutrients with legumes and forages.
- **Residue Retention:** Maintains soil moisture and reduces erosion

Targeted impact on Moroccan Agriculture by 2030



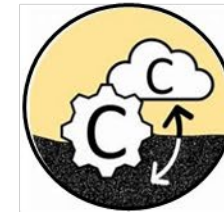
16%
Yield Increase
in rainfed drylands.



30-40%
Water Savings
in irrigated areas



+21%
Net Profits



**Enhanced Soil
Organic Carbon**
for soil health



5,000
farmers trained

Climate-Resilient Water management



Challenges

**Unpredictable
Rainfall & Drought**

**yield losses:
economic instability
in Moroccan
agriculture.**

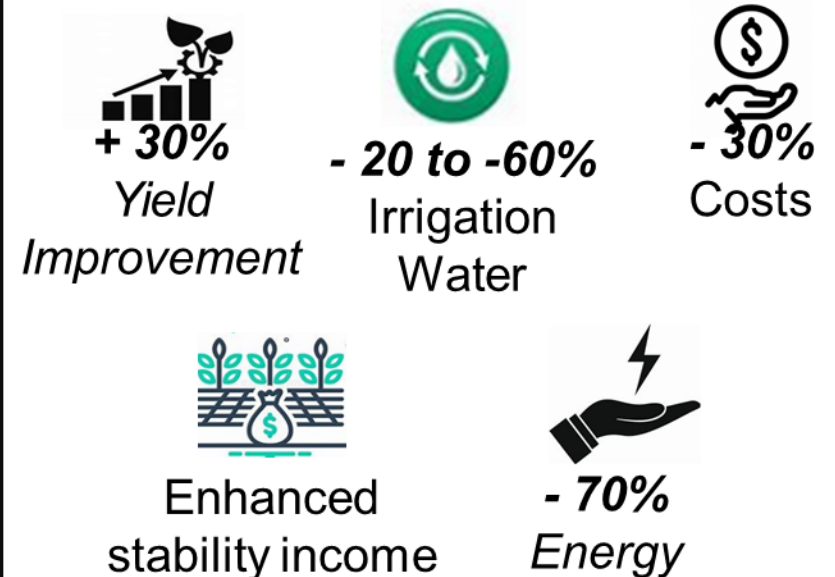
Solutions

Precision in irrigation to meet minimal crop water needs, avoiding wastage.

Alignment of irrigation with critical growth stages and seasonal evapotranspiration patterns.

Tailored practices to different soil fertilities and crop requirements.

Impacts of farms adopting technological packages



Conclusion



Role of Research in the Green Climate Fund

- Support Investment Decisions;
- Enhancing Project Effectiveness;
- Assessing and Managing Risks;
- Promoting Innovation and Scalability;
- Monitoring and Evaluation for Continuous Improvement.



Thank you