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# Gender Equality, Youth and Social Inclusion in Agriculture: Priorities and Possibilities in the CWANA Region

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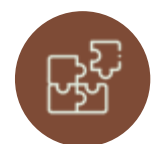
# 75 years of planetary boundries crossed



- World population has doubled
- World economy has grown 7X



- World grain demand has tripled
- 38% of Earth's terrestrial water is used for Agriculture



- Human demands surpassed Earth's regeneration capacity around 1980;
- Humanity will require capacity of 2 Earths by 2033



- 38% of Earth's terrestrial water is used for agriculture
- 75% of Agricultura land used to raise animals

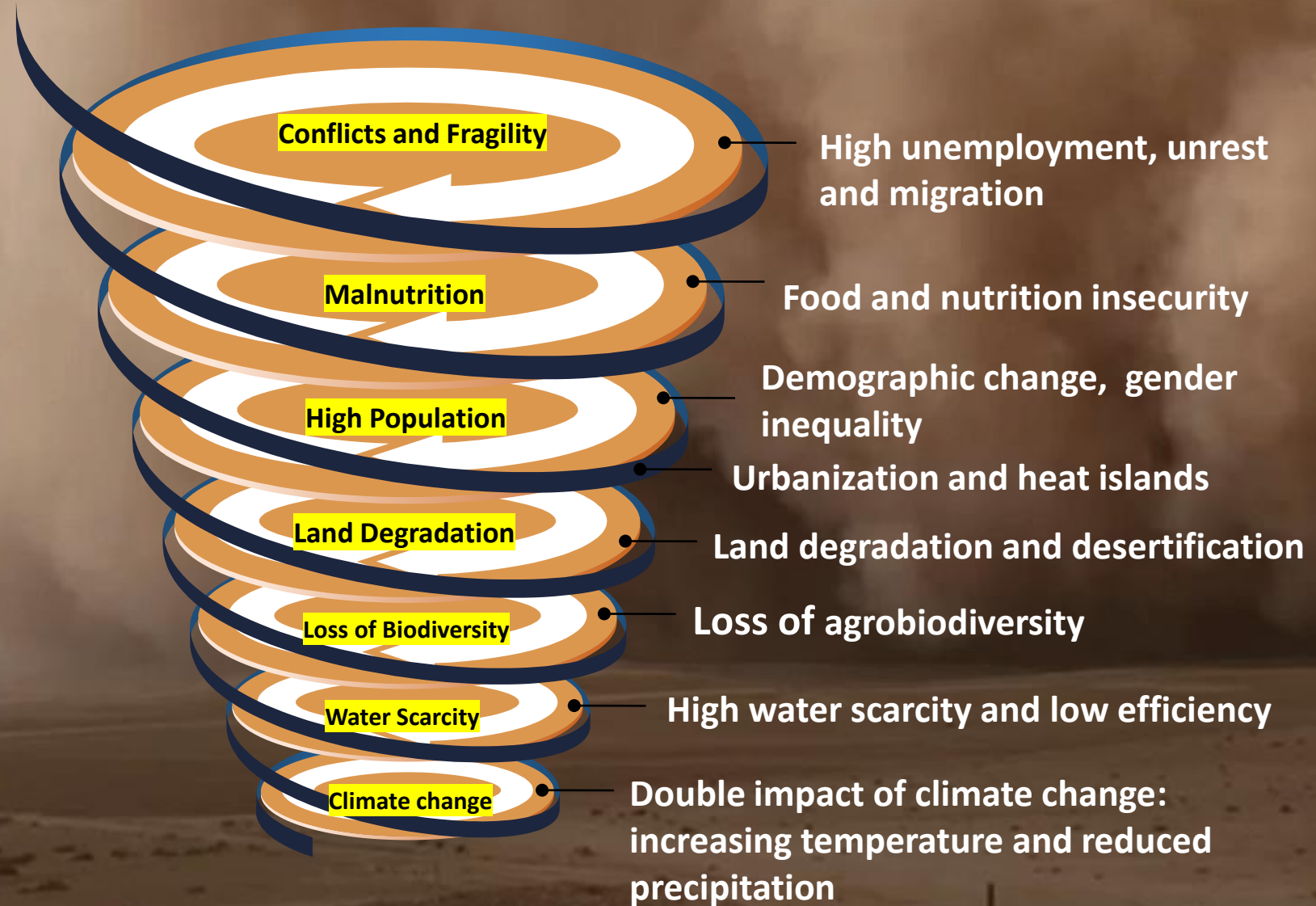


- 70-90% of the global freshwater withdrawals are for irrigation
- 30-35% of GHG emission are from Ag.

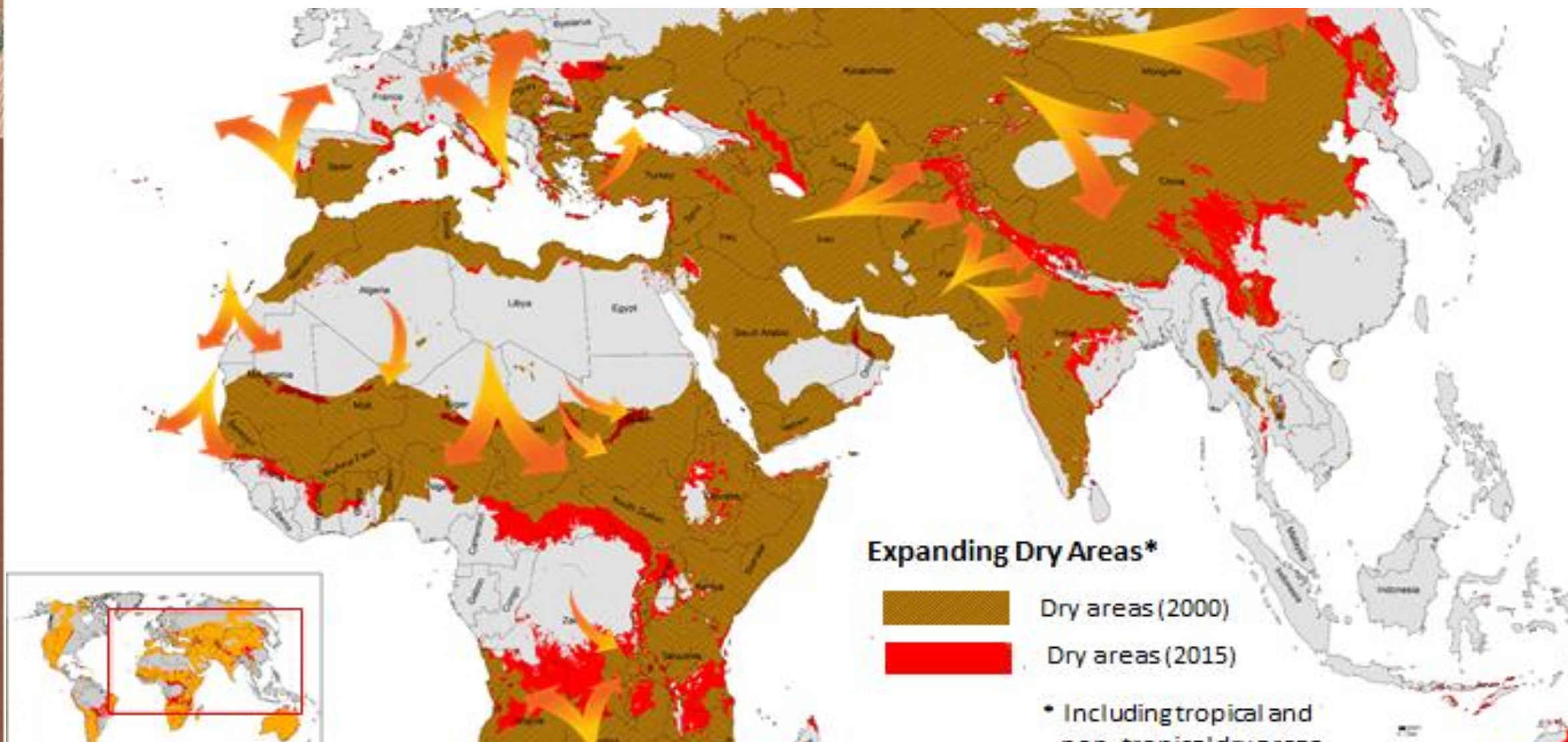


- Yet 1 in 7 persons is food-insecure and 2-3 in 7 are malnourished

# The Perfect Storm



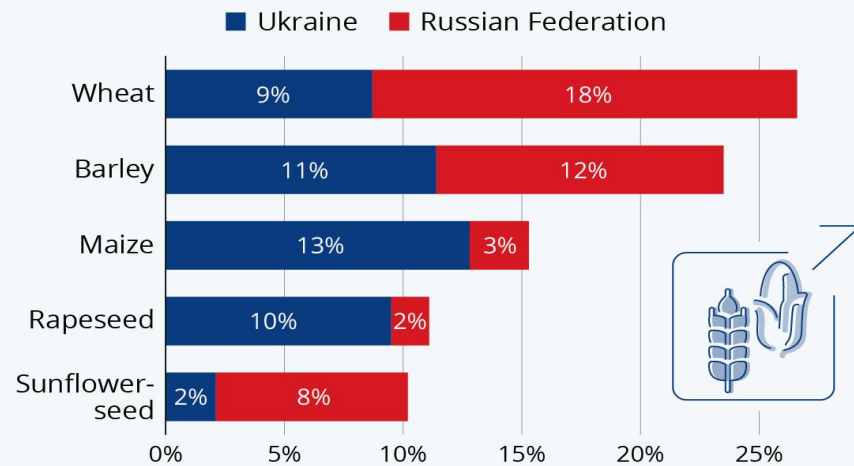
# Dry Areas Are Expanding



# HIGH FOOD/ENERGY PRICES- LIVELIHOODS AT RISK

## Why the War in Ukraine Threatens Global Food Security

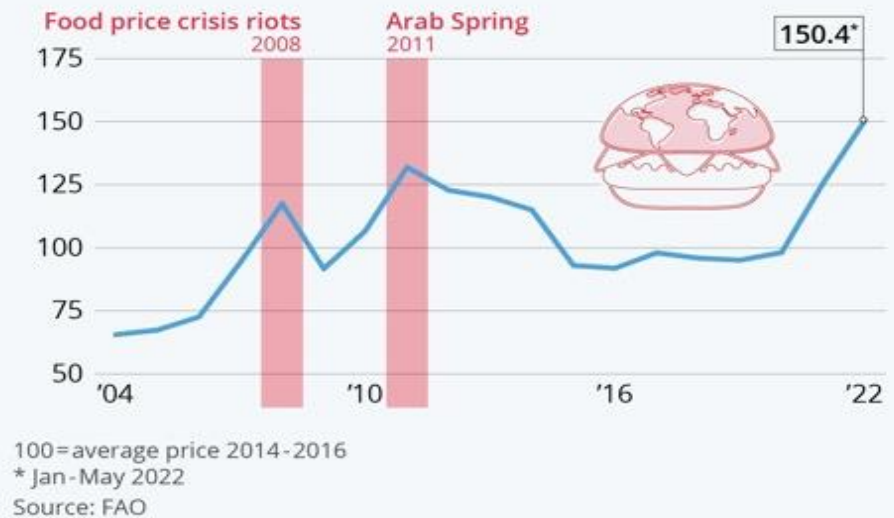
Ukraine's and Russia's share in global exports of selected crops (2016-2020 average)



Source: Food and Agriculture Organization of the United Nations

## The Link Between Soaring Food Prices and Political Instability

Development of the FAO World Food Price Index and occurrence of widespread unrest since 2004



Ukraine war, COVID, drought, climate change, heatwaves, income growth, high energy prices, globalization, urbanization, - are all converging to transform food production, markets, consumption and future pressure on prices.

# Climate Change and MENA



- **The MENA region** is already the most water-stressed region in the world.

- **Agricultural land** is equally scarce and fragile.



- **Temperatures** in the region are projected to rise by 4 degrees Celsius, twice as fast as the global average according to the Max Planck Institute and precipitation is projected to decline by 10 to 30 percent (World Bank)

Crop yields could decrease by 30-60 percent

Decline in groundwater replenishment and severely overexploited aquifers

Agriculture as an industry is a major consumer of water

# Climate-Driven Social Inequity

The challenges for strengthening climate security and resilience in the MENA region have already been documented in detail to include:

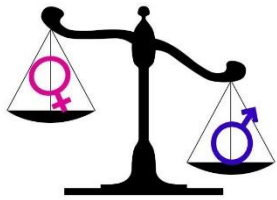
- ✗ High levels of conflict within and between countries
- ✗ Growing poverty
- ✗ Unemployment
- ✗ Loss of agricultural livelihoods
- ✗ High levels of inequality leading to rising dissatisfaction with the status quo

The effects and impact of climate change are **locally specific** and **are experienced differently** by different groups of people based on **gender, age, race, disability, sexual orientation, class, and other social identities.**

➔ Lower access to productive resources, technology, markets, finance, and information; and restrictive sociocultural norms are factors that can make women more vulnerable to climate-change adversities.



## The MENA paradox



- According to the Global Gender Gap report, the **gender gap is highest in the MENA region** and “at the current relative pace, it would take an estimated **142.4 years to close**”
- The **region performs well on health and education** but counterintuitively **performs very poorly on economic and political participation**: a phenomenon referred to as the “**MENA paradox**” (World Economic Forum, 2021)
- Only **18.5%** of women participate in the labor force in the **MENA region** (ILO, 2017)



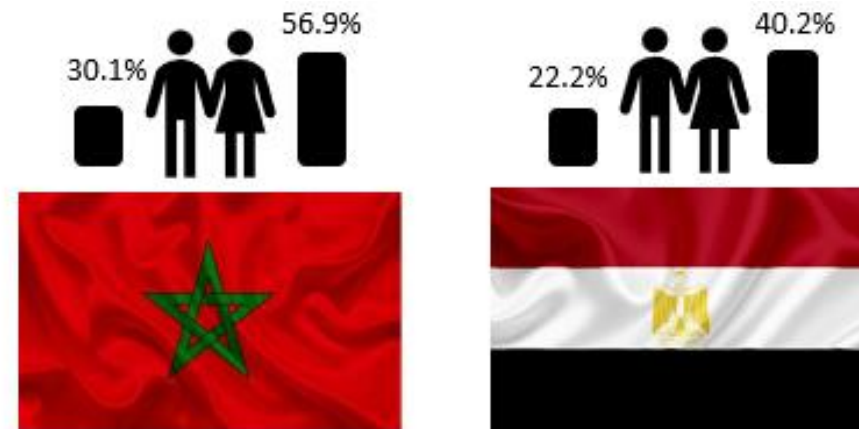
18.5%



# Women's "invisibility" in agriculture despite their active participation

Although agriculture is the largest employer of women in the MENA region, women's contribution to the sector **remains largely undervalued**, if not **invisible**.

Percentage of men and women employed in ag sector



Source: World Bank

→ Some estimates suggest that about **50 percent of women** engaged in agrarian labor are either **not counted** at all in national surveys or classified as **economically inactive** (Kabeer, Deshpande and Assaad 2019).



This is especially true for women who provide unpaid labor on family farms and are assumed to be (and may even see themselves as) economically inactive or, at most, as **helpers to male farmers instead of farmers** (Baruah and Najjar, 2022).

# Weaker access to credit and capital, training, technology, and other inputs into agriculture

(Najjar et al., 2019, 2020, 2023)



Women do not have **adequate access to credit services, banking institutions, agricultural extension services, and training.**



Women also had **weaker access** than men to extension services and **training in skills deemed masculine**, such as irrigation and other drought-mitigation strategies.



Women also have **weaker access** than men **to markets** for the goods they produce.



## ICARDA's work towards addressing gender gaps in agri-food systems (IFAD, F2R Initiative)

### Making women's contributions to agriculture visible

- Multi-country studies demonstrating women's contributions to agriculture, while providing policy reform and recommendations.
- Designed and implemented projects in which women gain access to drought management and adaptation training at par with men.
- Carried out projects that challenged harmful norms around women's mobility, leadership and income generation roles.

### Improving access to credit and capital, training, technology, and other inputs into agriculture

- Closing information gaps between men and women through provision of cell phones, gender-inclusive terminology, radio programs and improved access to in-person trainings for women (many women have attended trainings for the first time)



### Better understanding of youth perceptions and interests in agriculture

- Make agriculture more compatible with contemporary aspirations of youth through mechanization (including for drudgery reduction), digitization and provisions for information and technologies





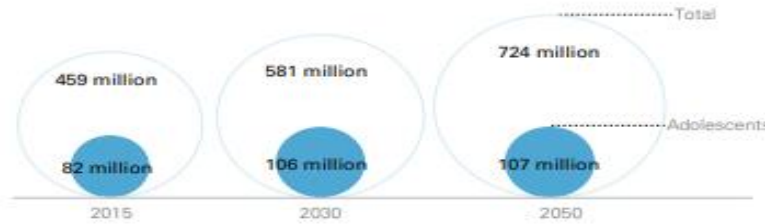
# A vision for youth in the agro-food sector is required

## Middle East and North Africa

MENA GENERATION 2030 REGIONAL FACT SHEET

### DEMOGRAPHIC PROJECTIONS

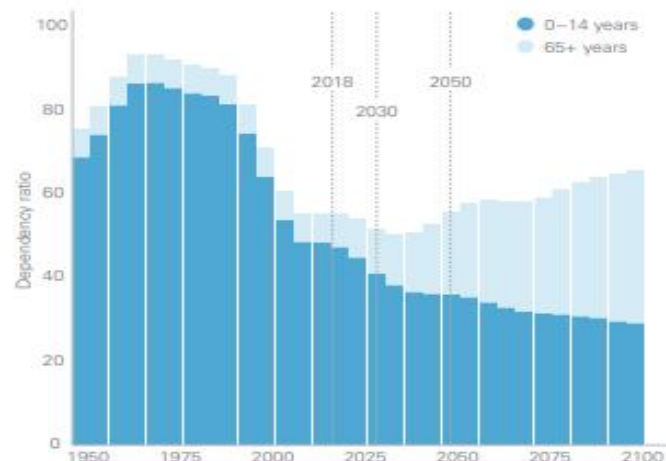
Number of total population and adolescents (10-19 years), 2015, 2030 and 2050 (in millions)



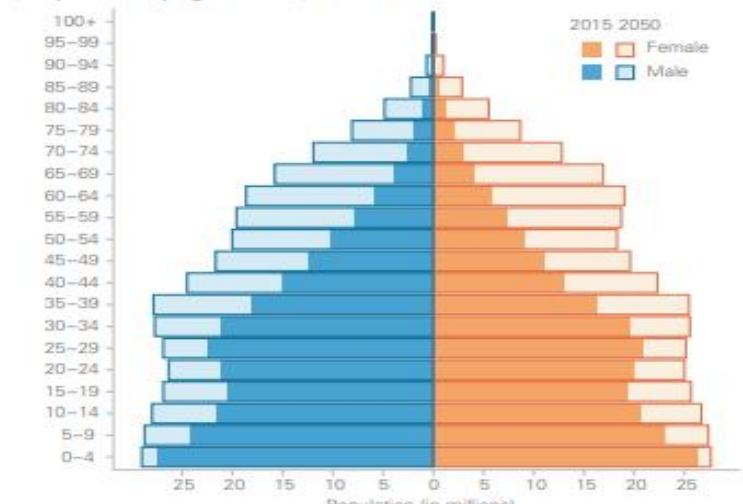
### THE PROSPECT OF A DEMOGRAPHIC DIVIDEND



Composition of the total dependency ratio (child dependency ratio and old-age dependency ratio), 1950-2100



Population by age and sex, 2015 and 2050



# BARRIERS TO REAPING THE DEMOGRAPHIC DIVIDEND IN MENA

## Conflict and Violence



MENA is home to **six per cent** of the world's adolescents



More than one-third (**37 per cent**) of youth in MENA live in **fragile and conflict** affected countries

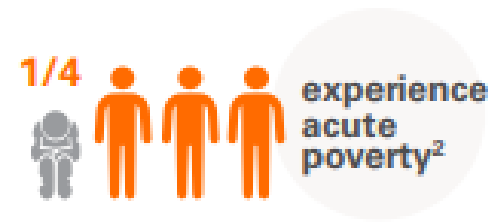


MENA is home to **58 per cent** of the world's **refugees** and **nearly half** of the world's internally displaced populations



**1 in 4** in countries reported being **bullied at school at least once** in the past two months

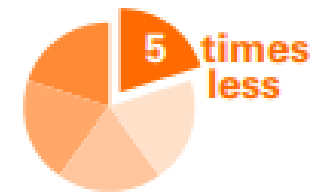
## Extreme Survival Measures



**half of the 118 million** under-18-year-olds, **experience moderate poverty**, while one in four (29.3 million) experience acute poverty



**One in five girls** in the region **married before the age of 18**



**The poorest children** are five times less **likely to complete primary education**



**One-third** of school-aged Syrian refugees in host countries are still **out of school**

# Improving perceptions and interests in agriculture among youth



Youth and gender issues are **inextricably** intertwined

The existing research on agricultural labor in MENA confirms that most of those between the ages of 15 and 24 only participate in agriculture when they have **no other viable livelihood options**.

Research and responsive policies aimed at **revalorizing agricultural labor to render it more compatible with contemporary aspirations of youth** are urgently needed.

Given the added stress that climate change places upon agricultural systems and productivity, the sector **can ill afford to lose out on the labor, energy, enthusiasm, and creativity** that youth can bring to it.

# Actions Required

## Vision

Regional and national strategies must be developed by policymakers that focus on unleashing economic activity by establishing a role for youth in a dynamic agriculture industry that meets the growing needs of their populations.

## Policies

Governments and regional actors must turn their vision into policy programs that support their ambitions in generating enough attractive jobs opportunities for burgeoning youth populations in both rural and urban settings.

## Training

Youth must be equipped with the training and skills required to take on current and future jobs throughout the agriculture value chain.

Access to universal primary, secondary and vocational institutions of learning will be required.

## Investment

Governments and regional organizations must invest in the education, research, innovation and science that is required to build a resilient, fit-for-purpose agro-industry that can withstand climate change and equip youth with opportunities.

# ICARDA in CWANA

Photo courtesy of the Feed the Future  
Innovation Lab for Collaborative Research  
on Sorghum and Millet, Kansas State University





# ICARDA/CGIAR Initiatives

## Objective

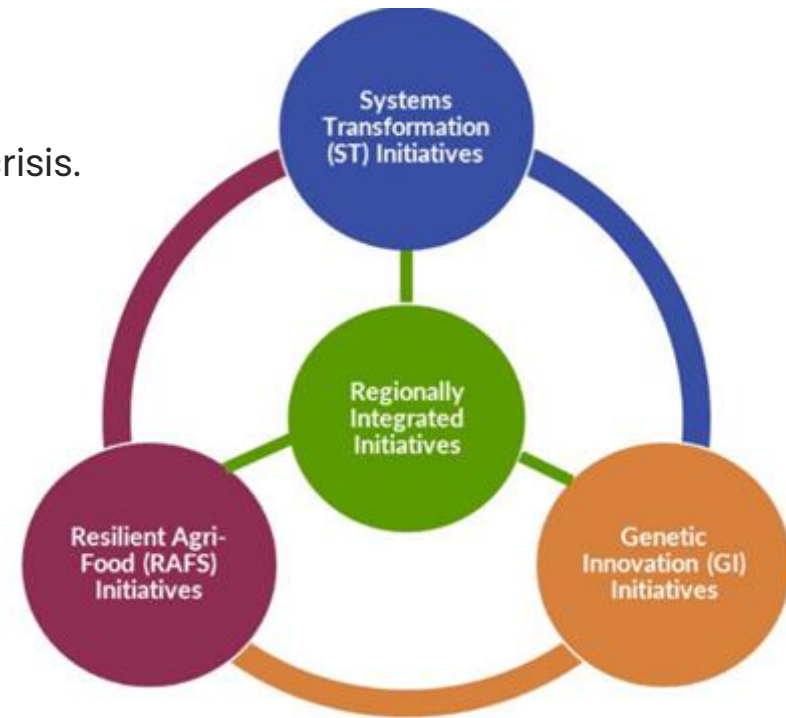
To transforming food, land, and water systems in a climate crisis.  
ICARDA is involved in 17 of the 33 initiatives: leads CWANA RII.

## Achievements

- Germplasm (ABI) is delivered faster and more targeted to farmers
- Genebanks support regional genebanks e.g. in Mauretania, Sudan Iraq
- CWANA, Climber, EIA supporting Morocco to convert 1 M ha to CA
- A digital platform monitors adoption of CA practices
- Community-based sheep/goat breeding programs are out-scaled beyond Ethiopia
- Crop-livestock diversification under CA is a desirable strategy
- Innovative feed solutions to be used by pastoralists and farmers

## Recommendations

- Integration of Regional Directors and CGIAR Country Conveners
- Boost coordination, integration and coherence across CGIAR's science groups
- Regional scaling hubs to amplifying impact



## Impact Areas



CGIAR Initiatives are consolidated into 3 Action Areas and Regional Integrated Initiatives  
- All will work towards 5 Impact Areas, supported by 5 Impact Area Platforms

# Arab Food Security Project: Investment in disseminating technology packages to increase wheat yields pays off

## Objective of the study

- To close yield gaps by introducing packages of best practices in wheat production

## Achievements

- The project developed/adapted and introduced packages of up to 10 technologies in 9 countries (improved wheat varieties combined with improved agronomic practices)

## Outcomes

- Adoption of variety and at least 2 other components stands at 37.95%
- The project directly benefitted 2.07 million people

## Impacts

- 551,000 tons of additional wheat produced in five countries
- \$129 million (in 2022 US\$) additional value generated by the project
- Every dollar invested on the project generated a return of \$22.16 (over 2000%)

# ICARDA/World Bank Study: Economics of Land Degradation will guide investment in land restoration in Uzbekistan



## Objective of the study

- To guide national and international investments to combat land degradation (LD) in agriculture covering all four biomes (cropland, forest, pasture, and water resources)

## Achievements

- Identified and prioritized land degradation hotspots in the country
- Identified suites of policy, institutional, and technological interventions to combat land degradation (LD)

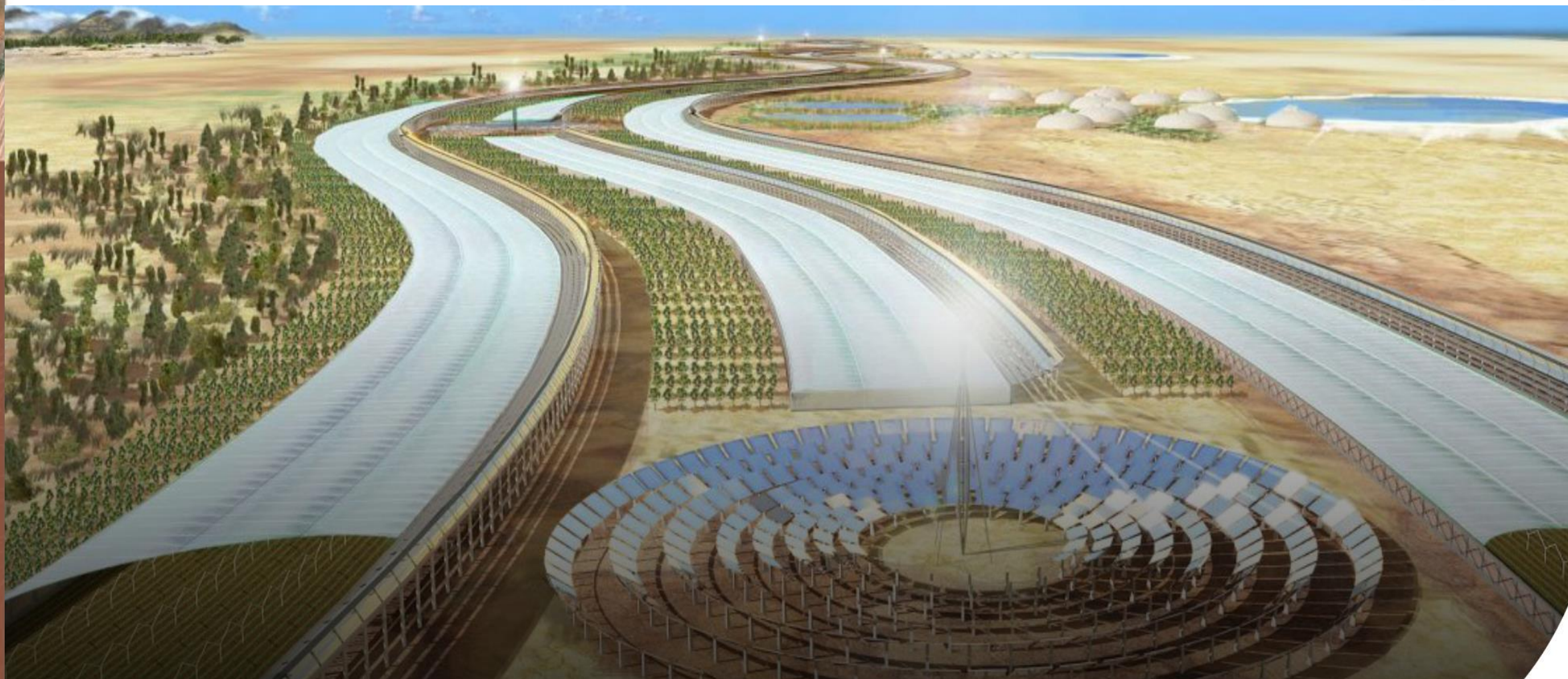
## Findings

- Annual loss of crops, forage, forest biomass, irrigation water and soil is valued at \$11 billion (17.94% of GDP)

## Recommendations

- 10-year investment of \$2.9 billion is needed to restore the 6.6 million ha of prioritized areas.
- Recommendations for increased investments to combat LD is currently being discussed by government and donors.

# Integrated Desert Farming Systems



# Integrated Desert Farming Systems

Drone technology for liquid  
pollination of date palm; and for  
pest monitoring and control



## SEASONAL CROPS

Protected Agriculture (e.g. vegetables,  
fruits, aromatic & medicinal plants)

Remote sensing to measure  
and monitor cropping  
systems, trees, plant growth  
& soil moisture

## FRUIT TREES IN OASIS SYSTEMS

Inter-cropping date palm with citrus, fig, pomegranate,  
jujuba, etc

Sand dune fixation

Open field  
(e.g. forage)

Water & nutrients for  
protected crops (solar  
powered root zone  
cooling)

Water & nutrients for  
fruit tree irrigation

Solar-powered  
date drying

Integrated farm-fish  
production systems

## LIVESTOCK AND FEED PRODUCTION

Spineless cactus for animal feed

Trees for protective  
screen against wind  
erosion; reducing  
evapotranspiration

Water & nutrients for  
open field irrigation

Solar-powered  
irrigation pump

Real-time  
evapotranspiration  
measurement for  
precision irrigation

Public private producer  
partnerships and knowledge  
sharing

Rotational grazing of improved rangelands



### Digital approaches to accelerate the scaling-up of innovative desert farming

For example: satellite remote sensing, 'Internet of  
Things' technologies, artificial intelligence,  
modelling, smartphone applications and big data  
analytics to track environmental change, and to  
share real-time monitoring data and advice.



# DR. HOLGER MEINKE



- Adjunct Research Professor for Global Food Sustainability at the University of Tasmania, Australia.

- Dr. Meinke has published over 130 refereed papers in disciplinary and transdisciplinary journals.
- He is a member of five editorial boards and was Director of the Tasmanian Institute of Agriculture for nine years (2011–2019).
- Before joining the University of Tasmania, Holger held the Chair of Crop and Weed Ecology at Wageningen University in The Netherlands (2007–2011).

- Prior to that, he was a cropping systems scientist with the Queensland Government (1988–2007), where he co-developed the agricultural systems simulation platform.
- He is a member of the National Committee for Agriculture, Fisheries and Food, a subcommittee of the Australian Academy of Science that advises the Australian Government.
- He has a BSc from Hohenheim University (Germany, 1983), an MSC from the Technical University Berlin (Germany, 1986) and PhD from Wageningen University (The Netherlands, 1996).

# Thank you



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