Striving to Attain MDG 1 Targets by 2015 and Beyond

Prof. Dr. Adel EL-BELTAGY
President of CIHEAM Governing Board

MDG 2015 **and Beyond???**

The Millennium Development Goals

Eight Goals for 2015

Eradicate extreme poverty and hunger

Achieve universal primary education

Promote gender equality and empower women

Reduce child mortality

Improve maternal health

Combat HIV/AIDS, malaria and other diseases

Ensure environmental sustainability

Develop a global partnership for development

MDG 1: Eradicate Extreme Poverty and Hunger

Target 1A:

Halve the proportion of people who se income is less than $1.25 a day

- 1.1 Proportion of population below $1 (PPP) per day
  1.2 Poverty gap ratio
  1.3 Share of poorest quintile in national consumption

Target 1B:

Achieve full and productive employment and decent work for all, including women and young people

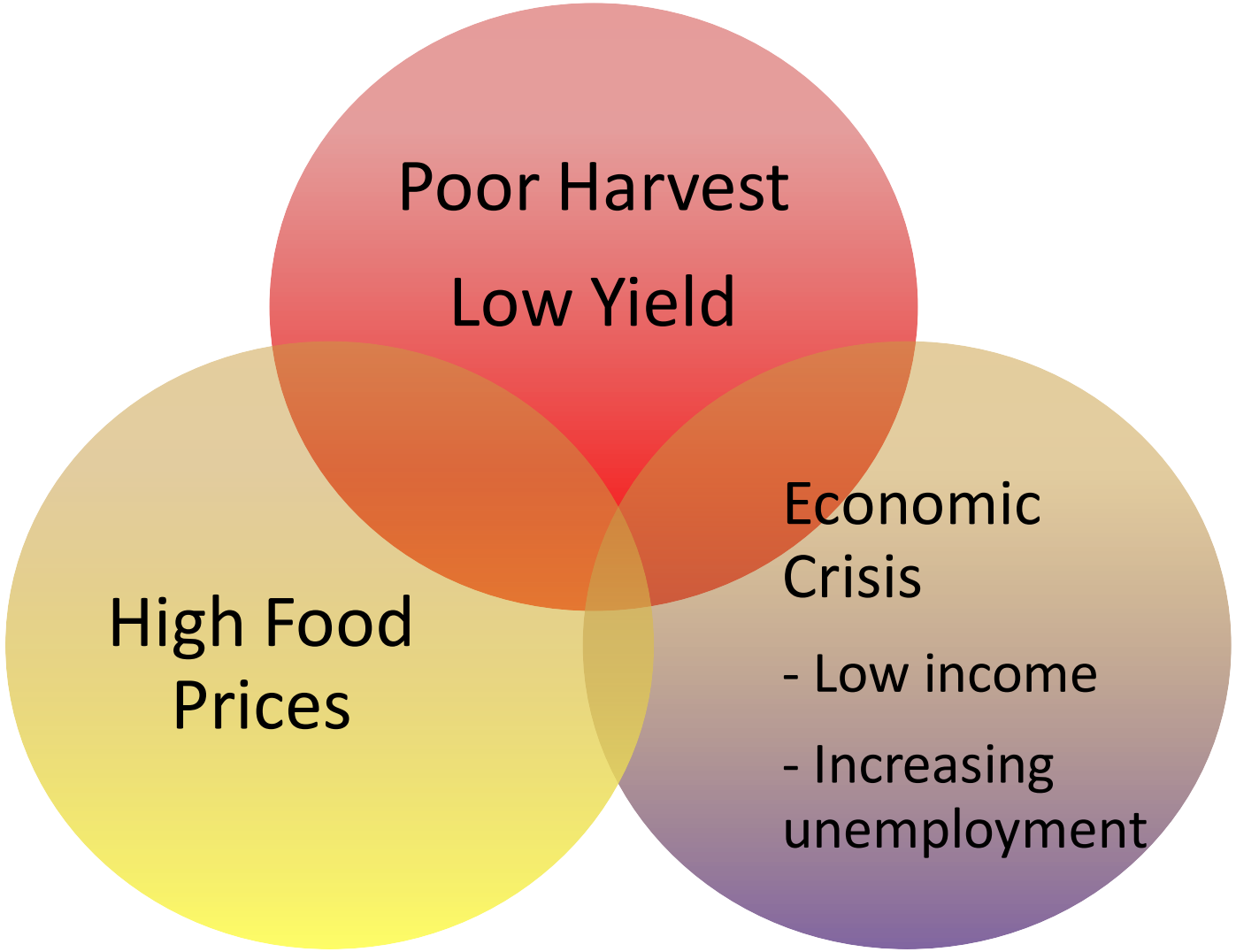
- 1.4 Growth rate of GDP per person employed
  1.5 Employment-to-population ratio
  1.6 Proportion of employed people living below $1 (PPP) per day
  1.7 Proportion of own-account and contributing family workers in total employment

Target 1C:

Halve the proportion of people who suffer from hunger

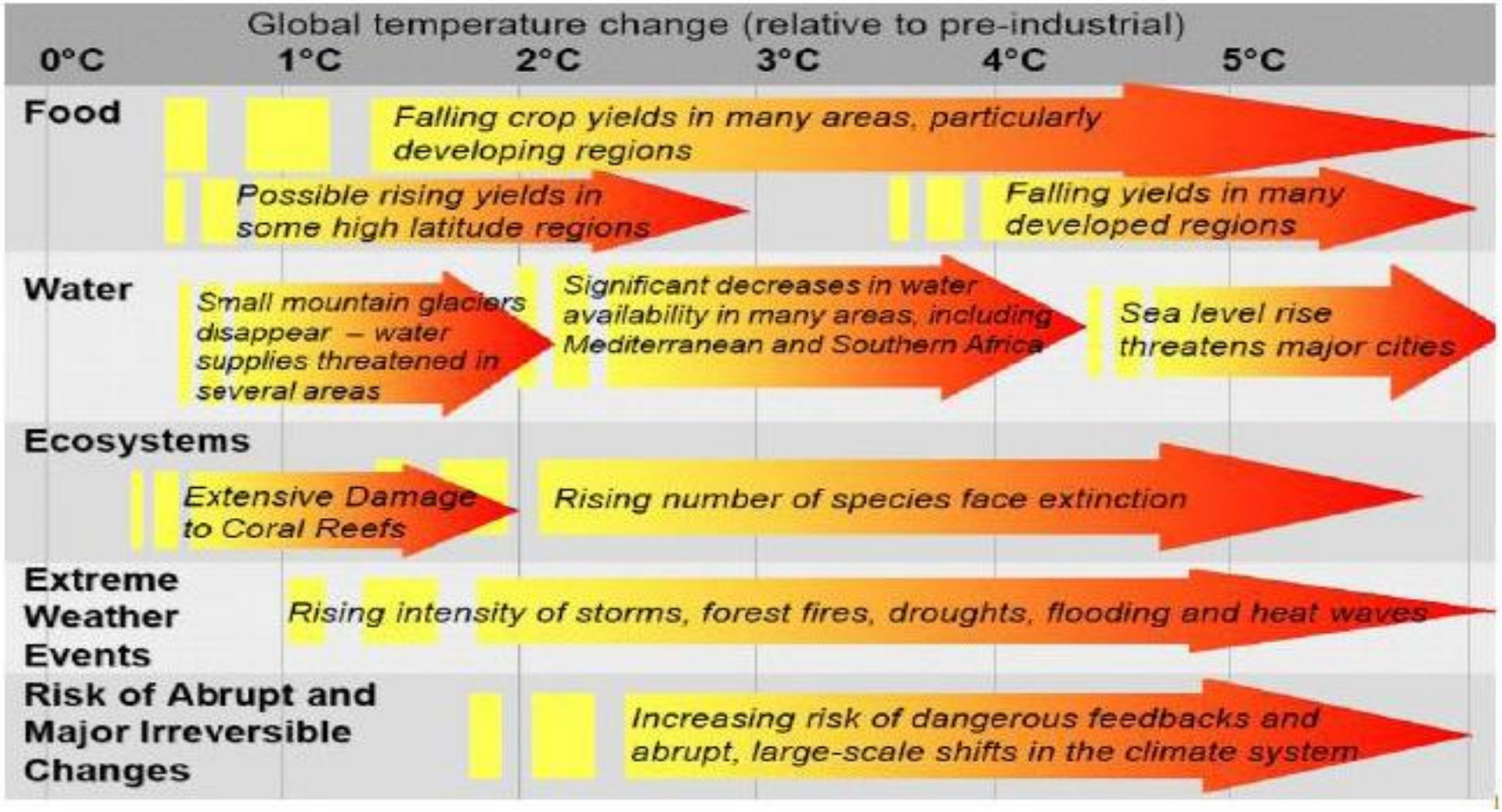
- 1.8 Prevalence of underweight children under-five years of age
  1.9 Proportion of population below minimum level of dietary energy consumption

Reasons of Hunger




Challenges
The
Changing
Environment

Climate Change: major impacts



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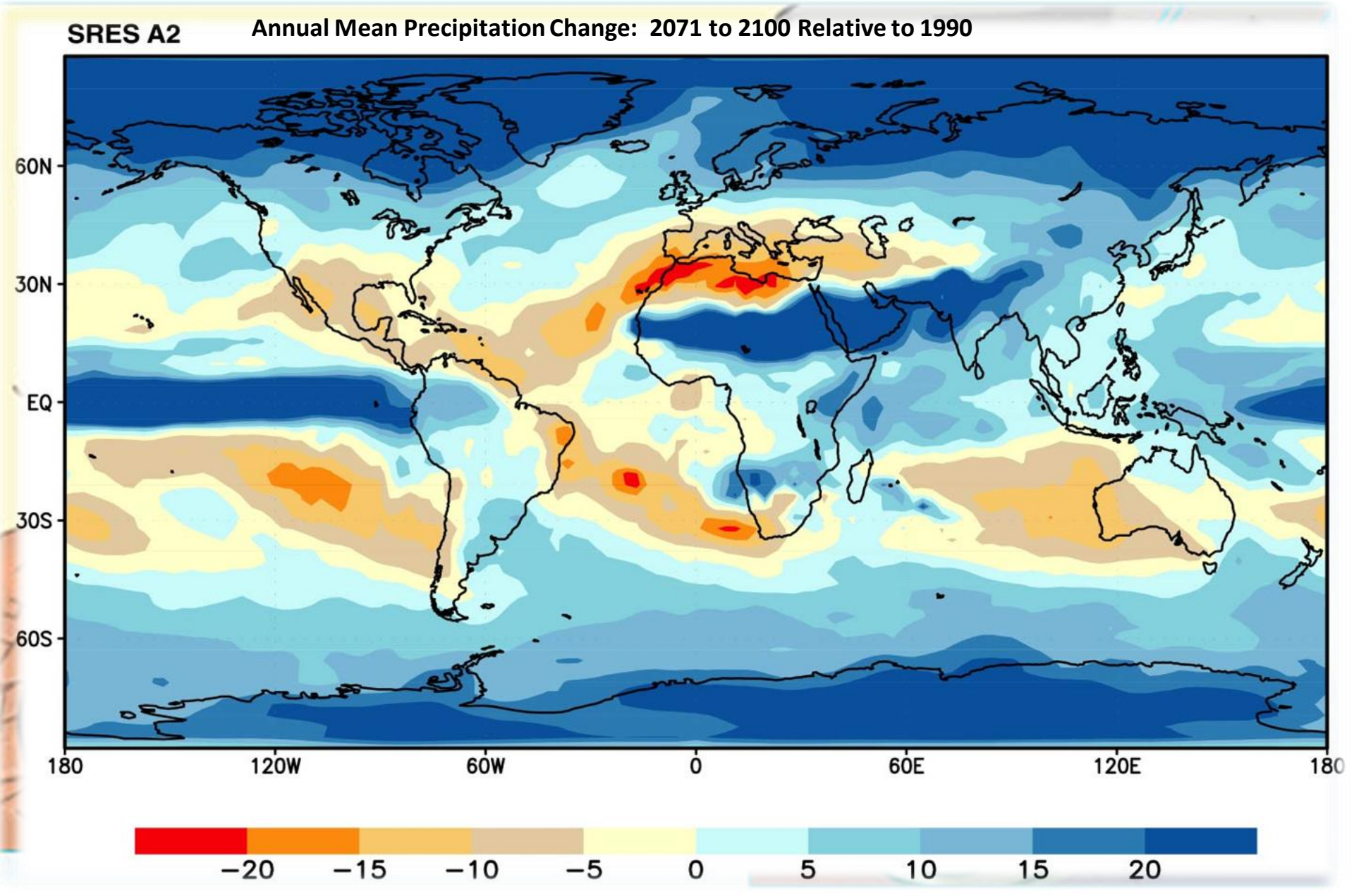
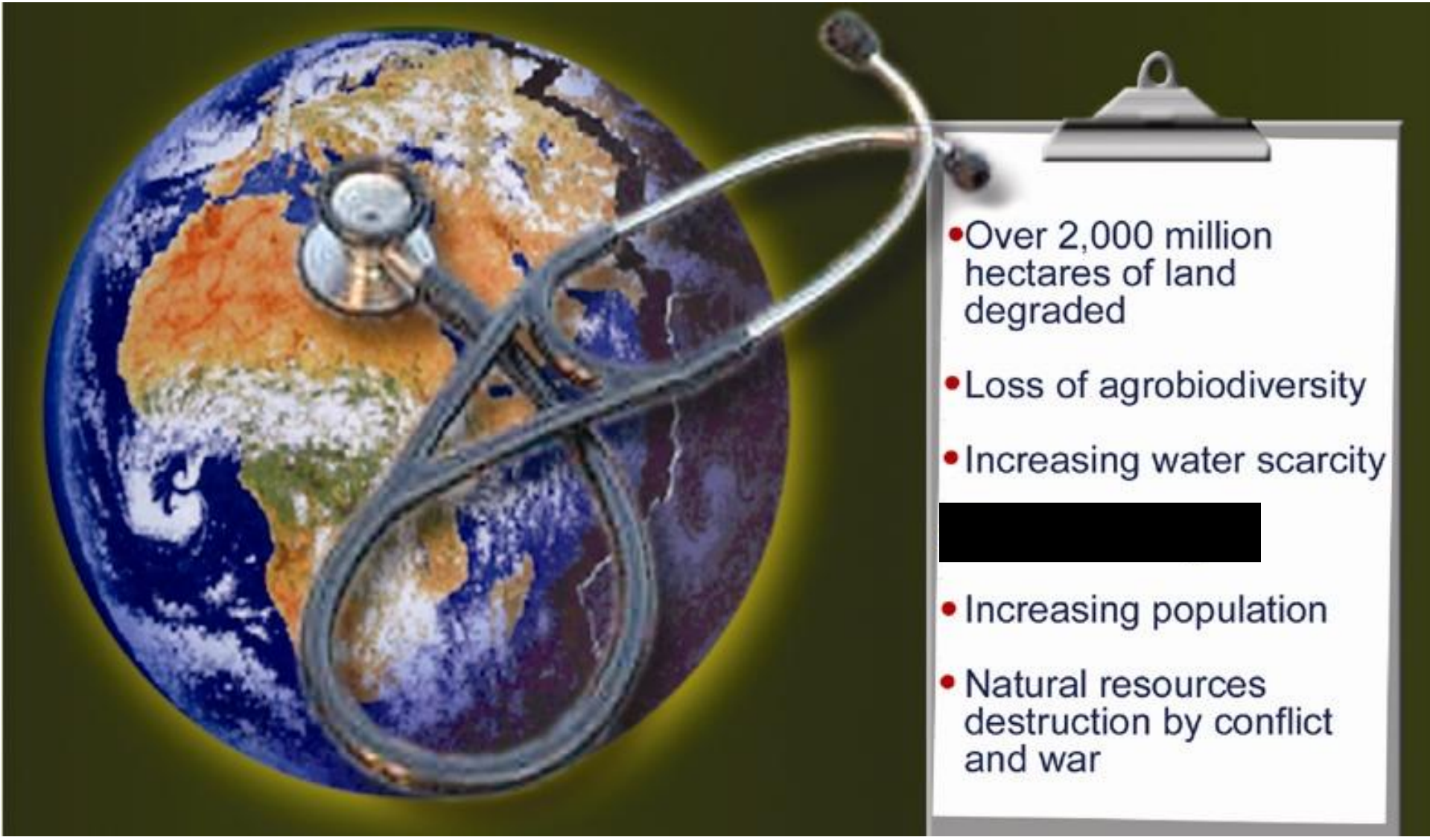
بعض المناطق ستصبح أكثر مطيرة والبعض أكثر جفافاً

More wetter & more drier



تدهور حالة كوكب الأرض

The Deteriorating Health of Our Planet



Climate change- impacts

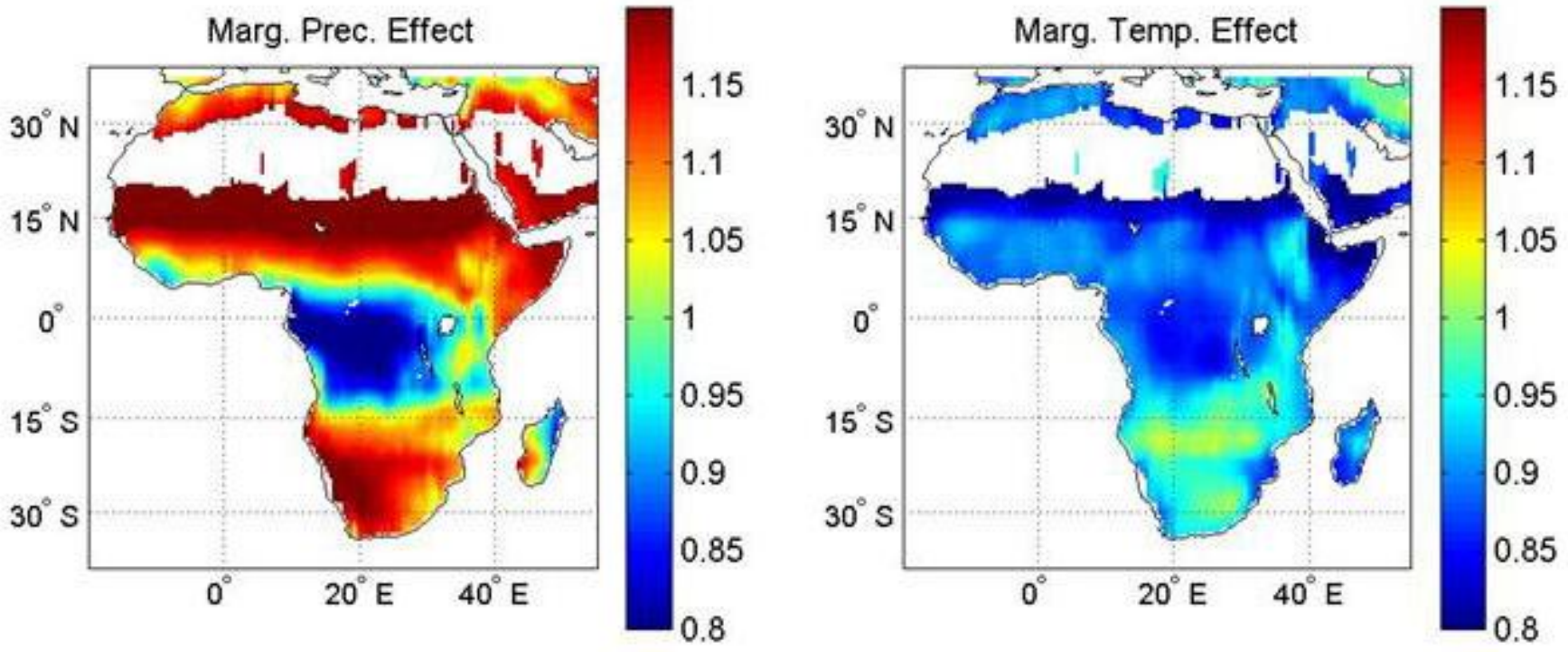
- There is compelling evidence that climate change is a serious sustainable development challenge -- not only an environmental issue.
- Climate change impacts will affect all countries
- Developing countries and the poor will bear disproportionately high negative impacts.
- Consequently, climate change may undermine the ability of developing countries to achieve MDGs

A report by ActionAid
October 2006

Climate change and smallholder farmers in Malawi

Understanding poor people's experiences in climate change adaptation

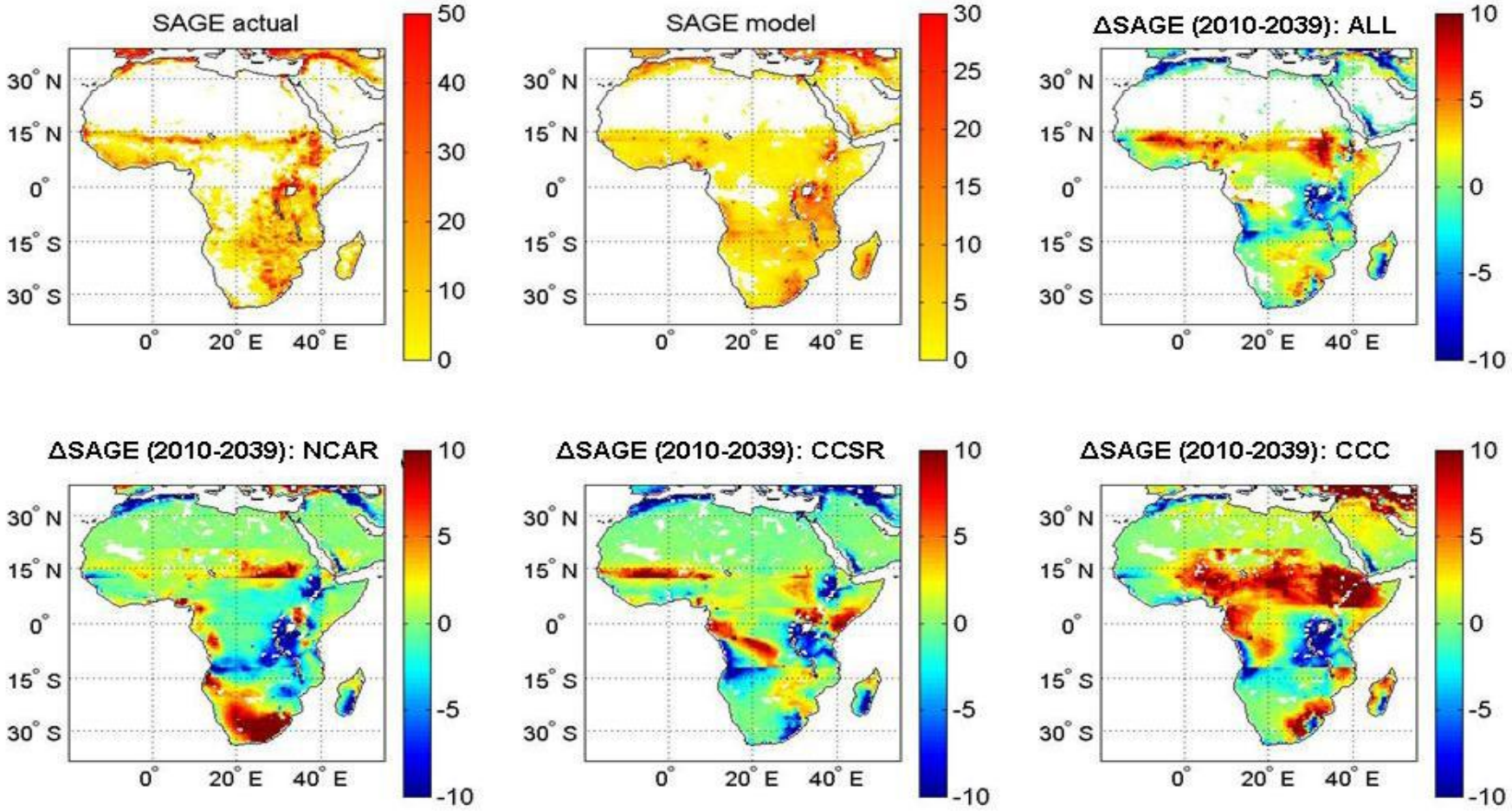
Geographic patterns of cropland sensitivity to precipitation and temperature



Cumulative marginal effects for precipitation and temperature across all seasons (winter, spring, summer, fall) were evaluated at long-term (1961–2000) mean conditions for each location (grid cell). Changes in the odds ratio per unit change in seasonal precipitation (10mm/month) and temperature (°C) are averaged across all six cropland models. Positive marginal effects ($Q > 1$) are shown in yellow-to-red colors, and negative marginal effects ($Q < 1$) in green-to-blue colors. For instance, $Q = 1.1$ indicates that the odds of land being used for cropping increases by 10% if the long-term mean monthly precipitation increases by 10mm (120mm/year). Increases in precipitation have a positive effect on croplands (left) in subtropical regions (10–20° N and 20–30° S) whereas they are neutral or negative in tropical regions. For temperature, increases in seasonal temperature have negative effects for most of the African continent, with the exception of mild positive effects in parts of southern Africa.

Policy Research Working Paper 4289, World Bank 2007

Changes in cropland share predicted by climate models



Long-term (2010–2039) changes in cropland share (in percent) arising from changes in seasonal temperature and precipitation patterns are estimated from an ensemble of seven AOGCMs (top right panel). Cropland sensitivities are based on the SAGE cropland model (for summary of other cropland models see Table 4). Actual (current) and modeled distribution of cropland share (percent) based on the SAGE data are shown in the left and center panels, respectively. Cropland share in subtropical regions (10–15° N and 15–30° S) is expected to increase, whereas croplands in tropical regions are expected to decrease, in particular in tropical eastern Africa (Great Lakes region).

Policy Research Working Paper 4289, World Bank 2007

Up-scaling and Extrapolation

Transfer and Adaptation

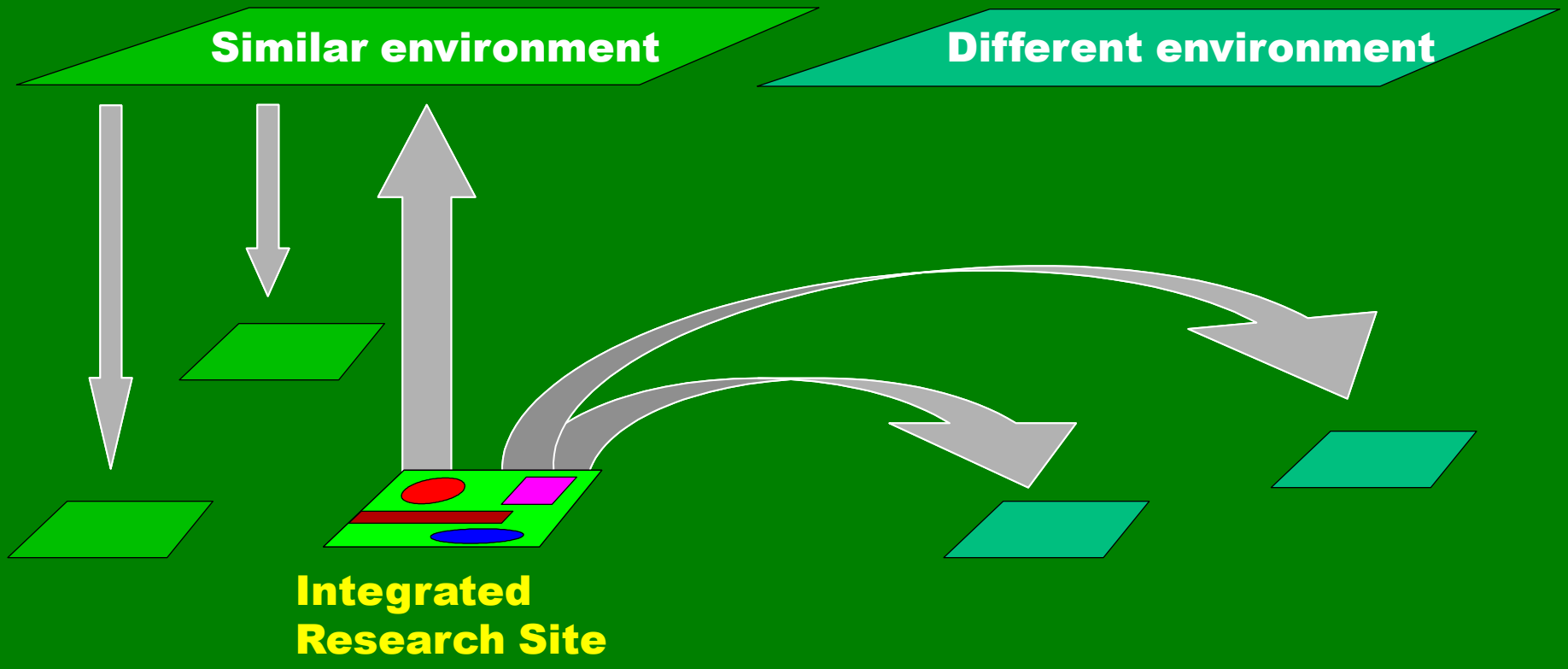
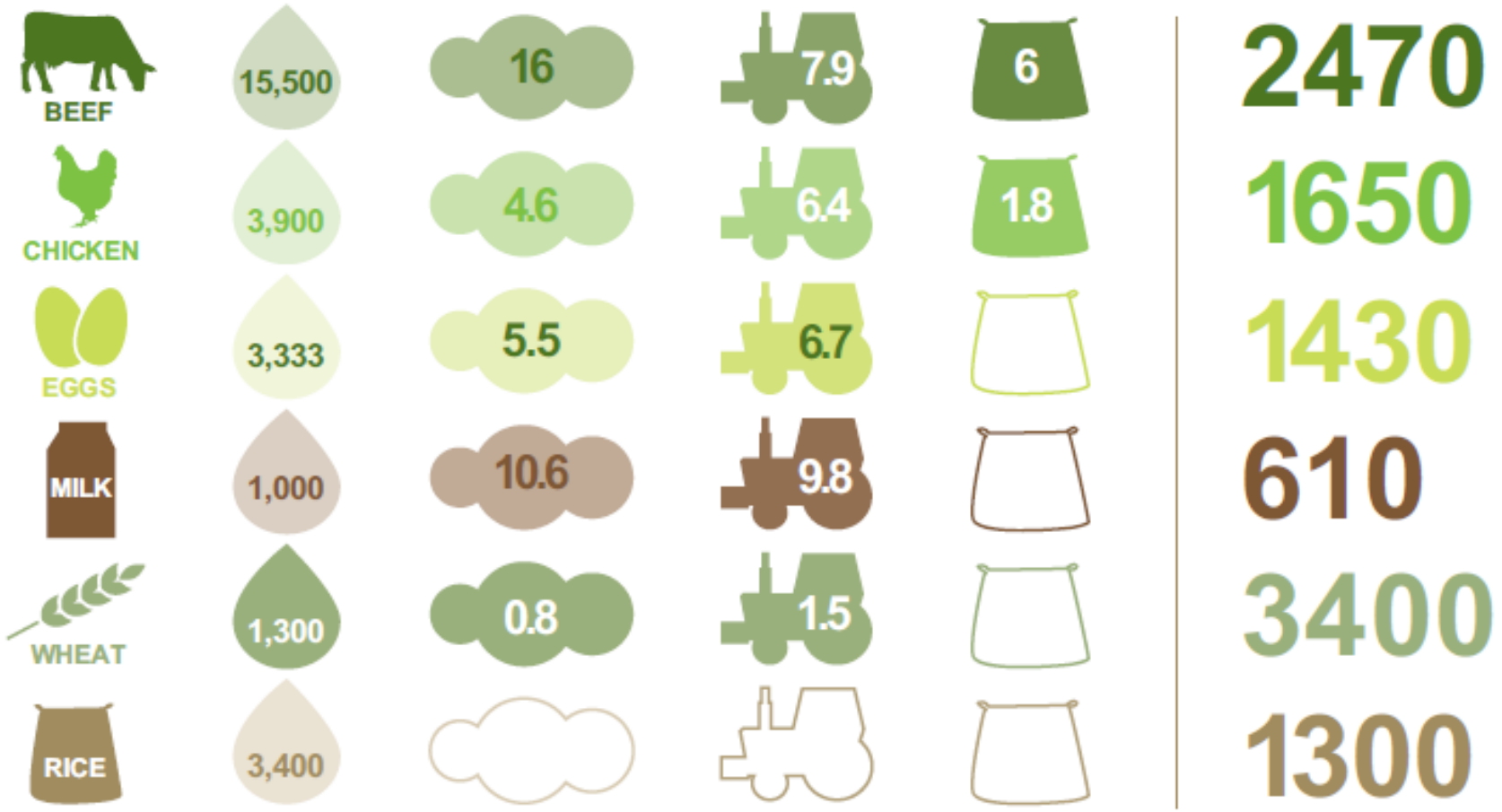


Figure 3: The ecological footprint of food



[I]Assumes an average egg weighs 60g, and the density of milk is 1kg per litre.
[II]Based on production in England and Wales
[III]Based on production in England and Wales, assumes all production is on land of an equal grade

Sources: Water http://www.waterfootprint.org/?page=files/productgallery; emissions and land use UK DEFRA (2006), http://goo.gl/T12ho; grain National Geographic, *http://goo.gl/4CgFB; calories USDA National Nutrient Database, http://goo.gl/7egTT*

Surging Food Prices and Global Stability

Misguided policies favor biofuels and animal feed over grain for hungry people

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BOB
THE SALT LAKE TRIBUNE
FUEL
USA
BIOFOOL

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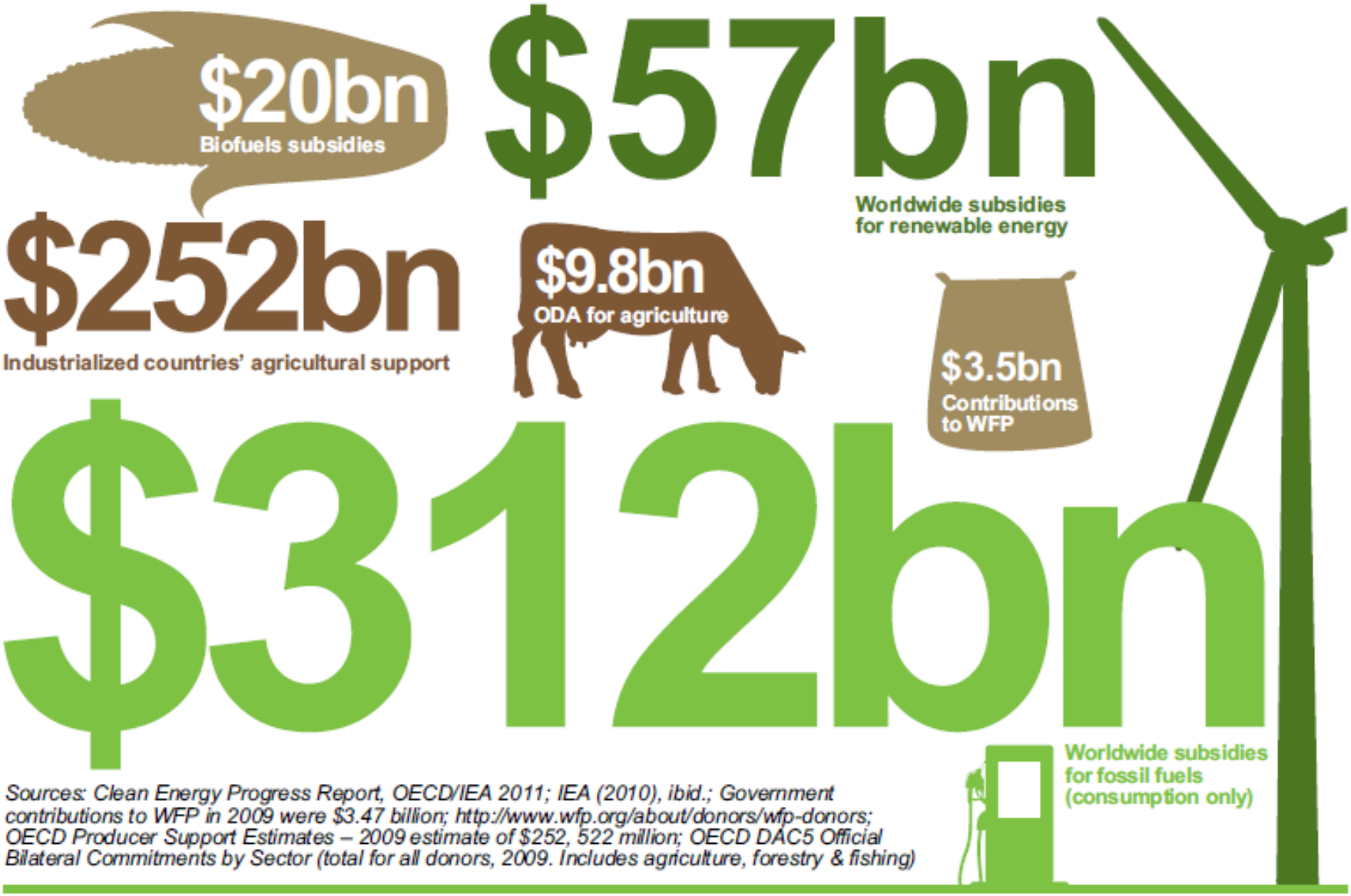
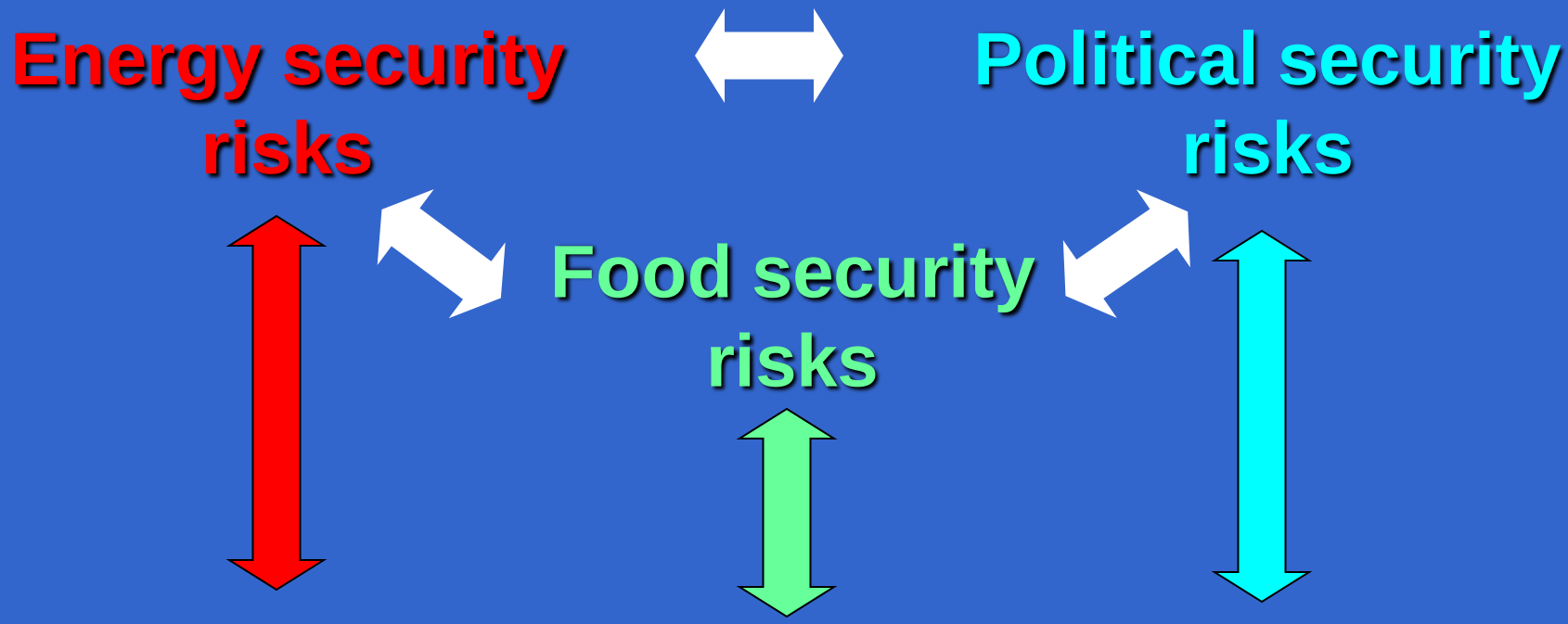
Figure 24: Governments are good at investing in public bads



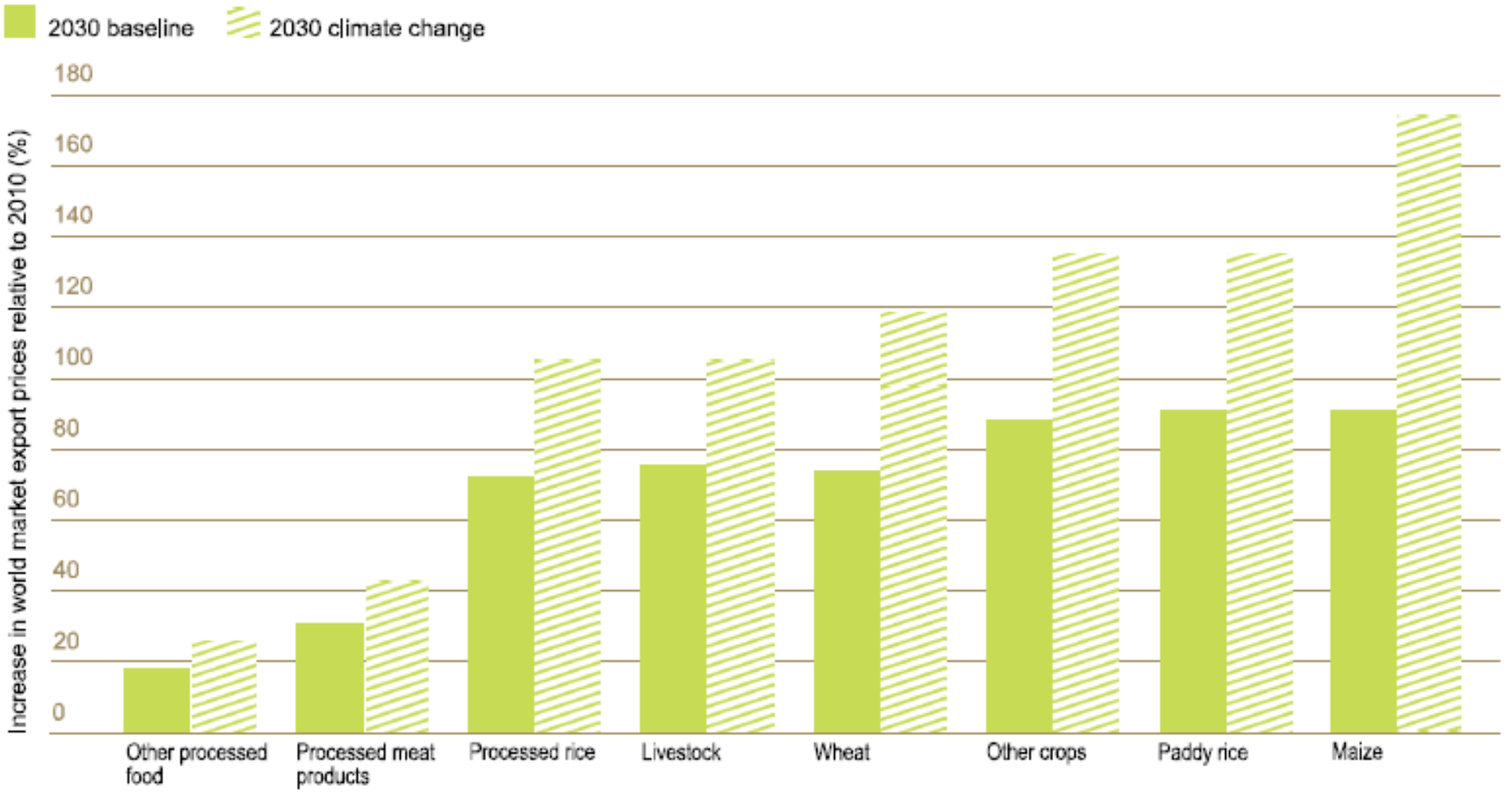
Sources: Clean Energy Progress Report, OECD/IEA 2011; IEA (2010), ibid.; Government contributions to WFP in 2009 were $3.47 billion; http://www.wfp.org/about/donors/wfp-donors; OECD Producer Support Estimates – 2009 estimate of $252, 522 million; OECD DAC5 Official Bilateral Commitments by Sector (total for all donors, 2009. Includes agriculture, forestry & fishing)

The food crisis tradeoffs and effects



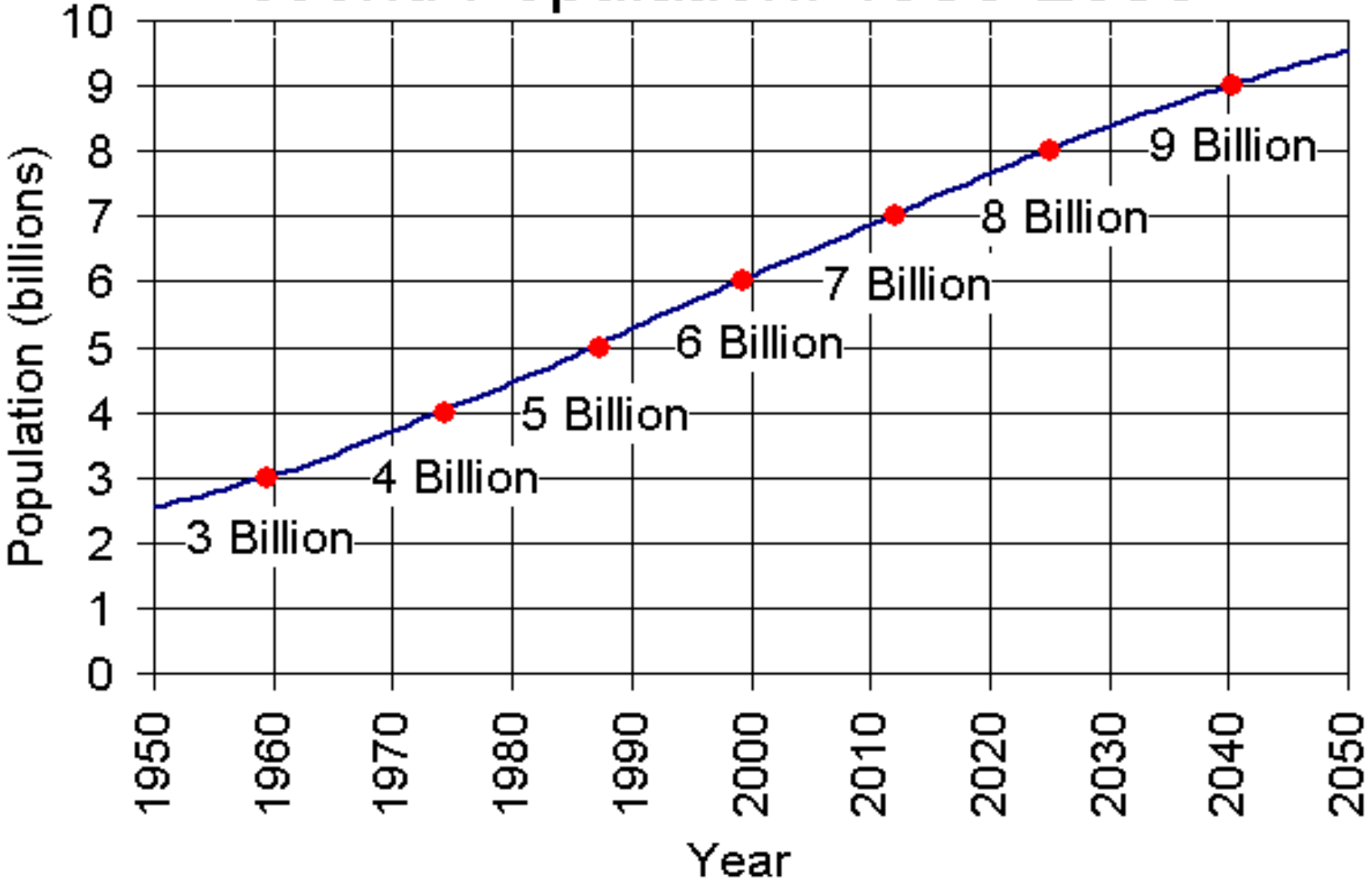
+ Mass protests in about 60 countries
  Violent: Bangladesh, Egypt, Guinea, Haiti, Honduras, Tunisia, etc.
+ The poorest suffer most and do so silently
+ Inflation and macro-economic imbalances
+ Environmental sustainability consequences

Figure 1: Real food price changes predicted over the next 20 years



Source: D. Willenbockel (2011) 'Exploring Food Price Scenarios Towards 2030', Oxfam and IDS

World Population: 1950-2050



Source: U.S. Census Bureau, International Data Base, December 2008 Update.

Economist.com

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ALFREDO

New Tools of Science & Technology

- Remote sensing, GIS/GPS
- Biotechnology/genetic engineering.
- Genetic and Proteomics (Gene mining …etc).
- Simulation modeling
- Information Technology/ Expert System/ Advanced artificial intelligence
- Renewable energy: solar, wind, biofuel
- New energy-saving techniques for desalination and water transportation
- Nanotechnology, (Biosensors – Bioprocessing – Nanomaterials).

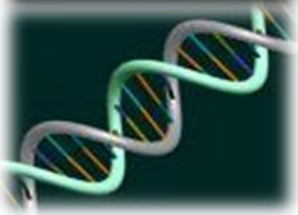
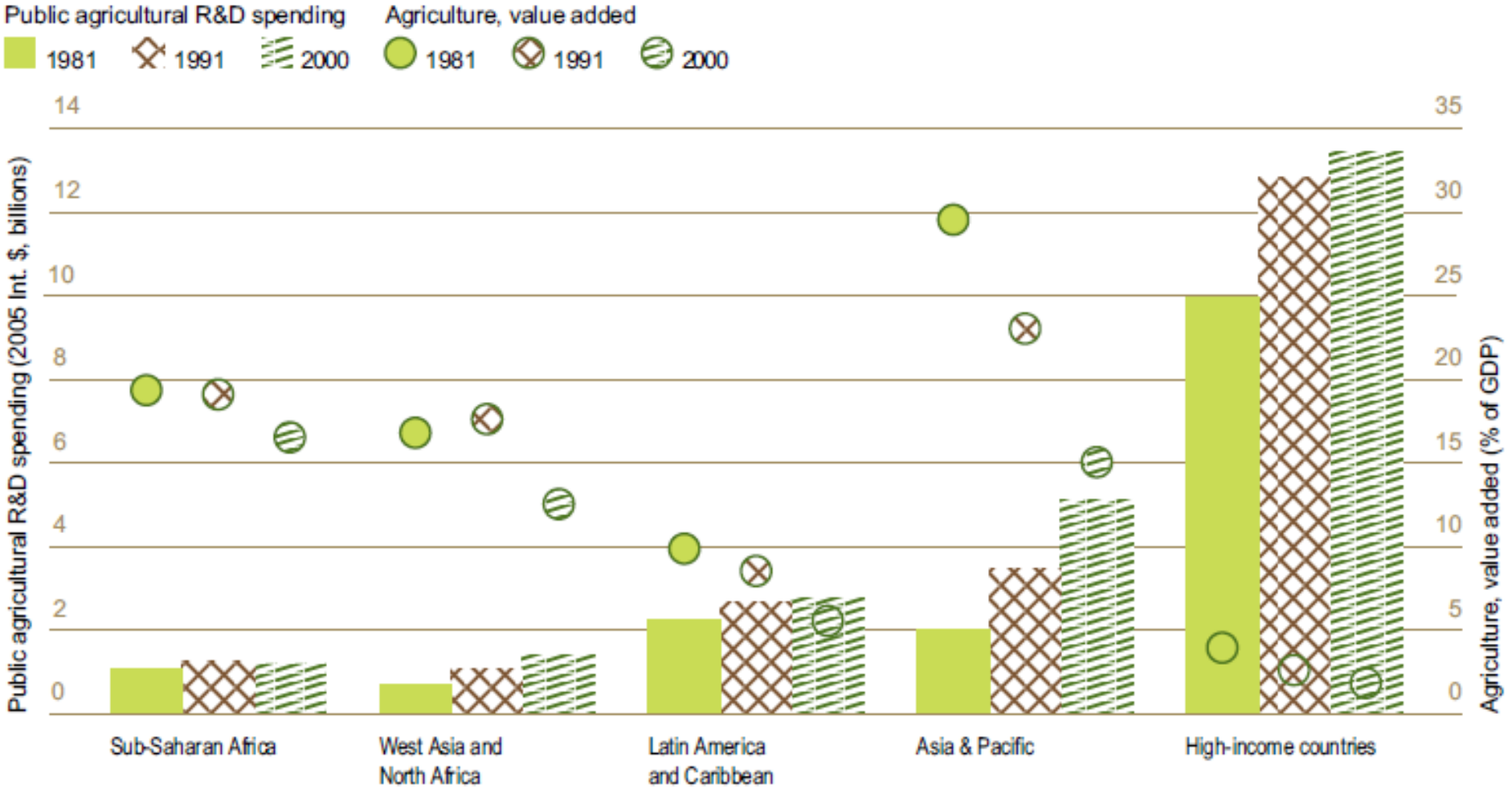
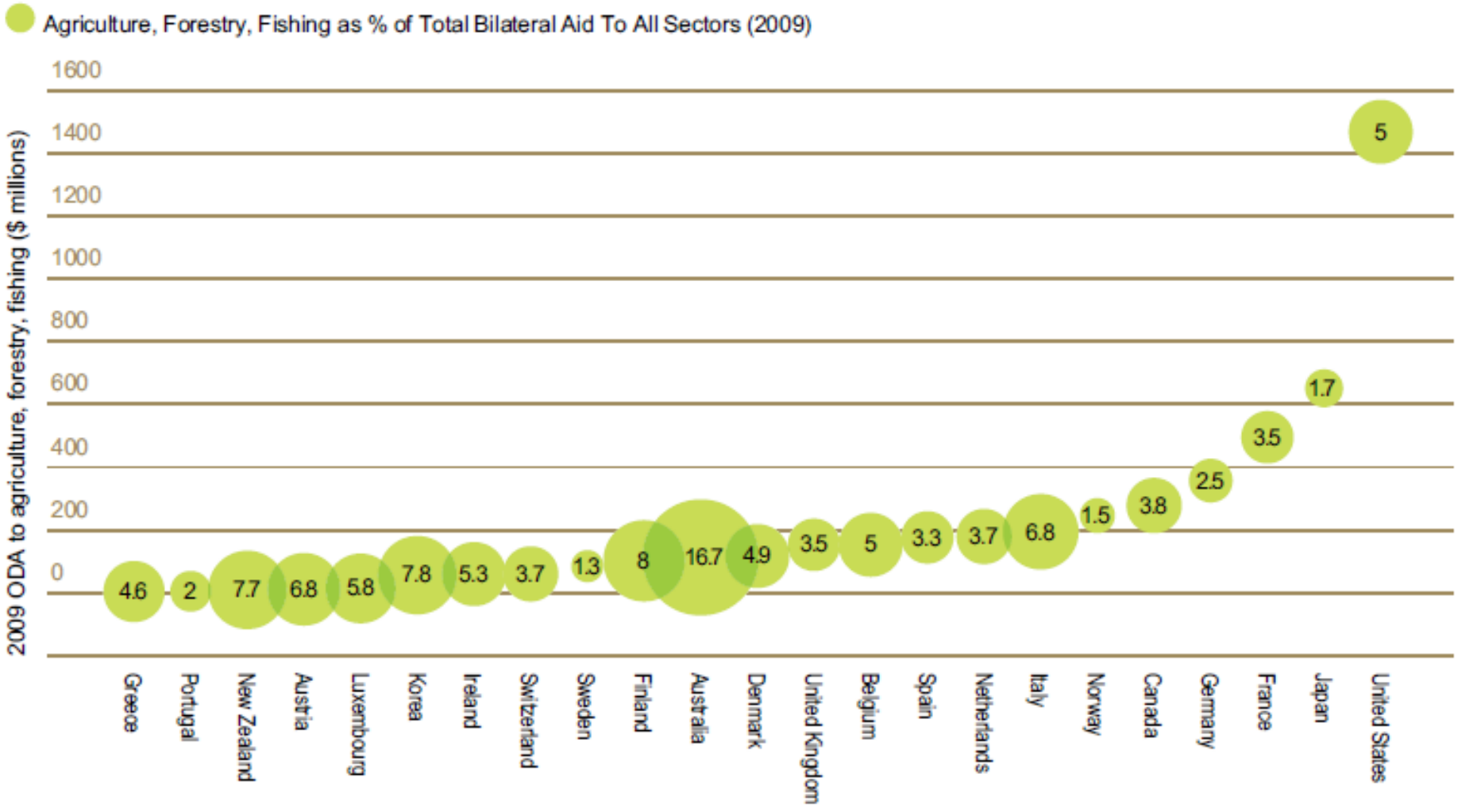




Figure 22: Investment in agricultural R&D ignores Africa



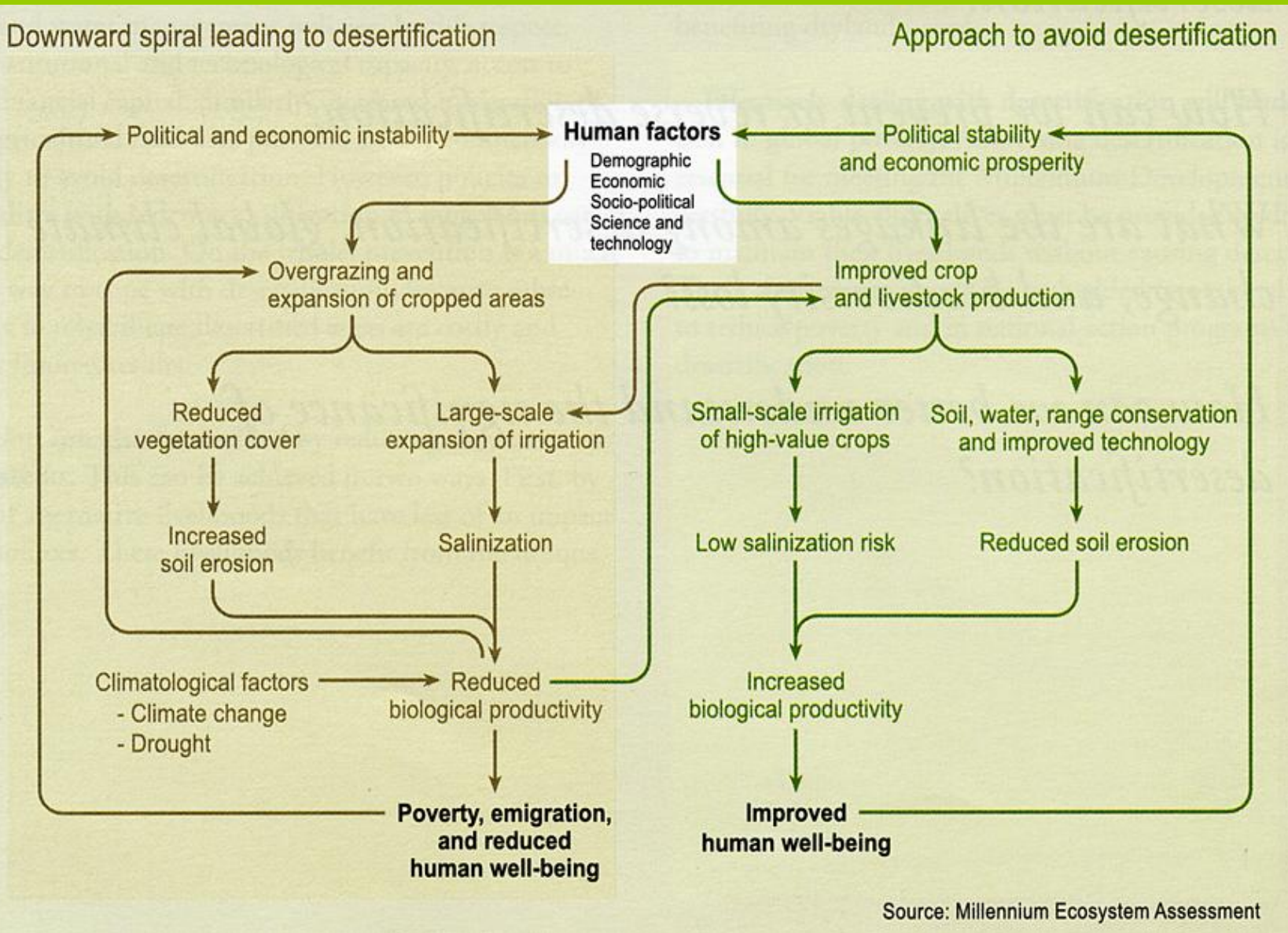
Sources: FAO, http://www.fao.org/docs/eims/upload//282426/GAT_Report_GCARD_2010_complete.pdf and World Bank, http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS}

Figure 23a: Who is investing in agriculture?
Donor country agricultural ODA



Source: calculated from OECD, http://stats.oecd.org/qwids/

Schematic Description of Development Pathways in Drylands



Vavilov Centers of Genetic Diversity


Gene Bank
ICARDA

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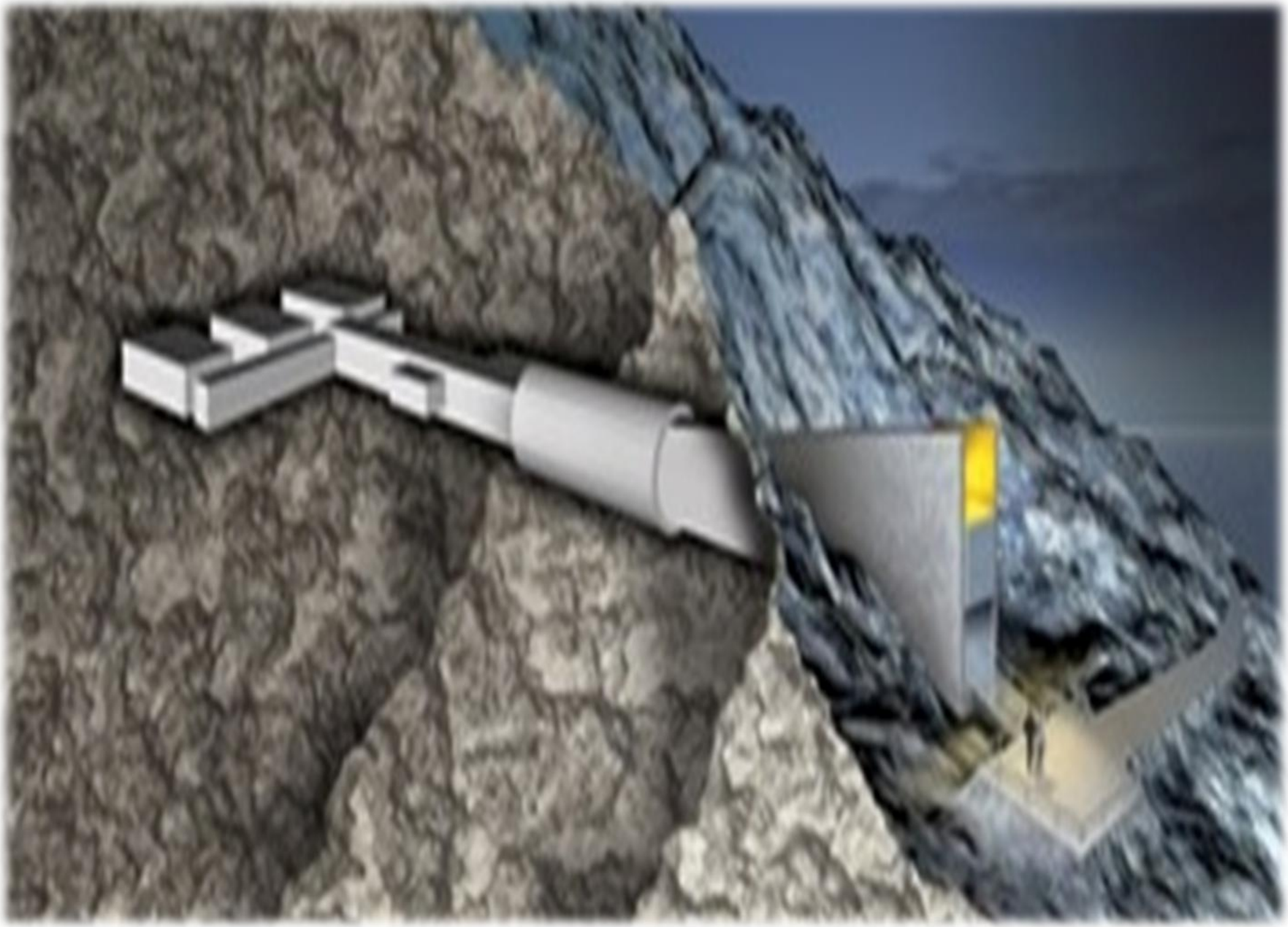
NORDIC GENE BANK
SAFETY BASE
COLLECTION



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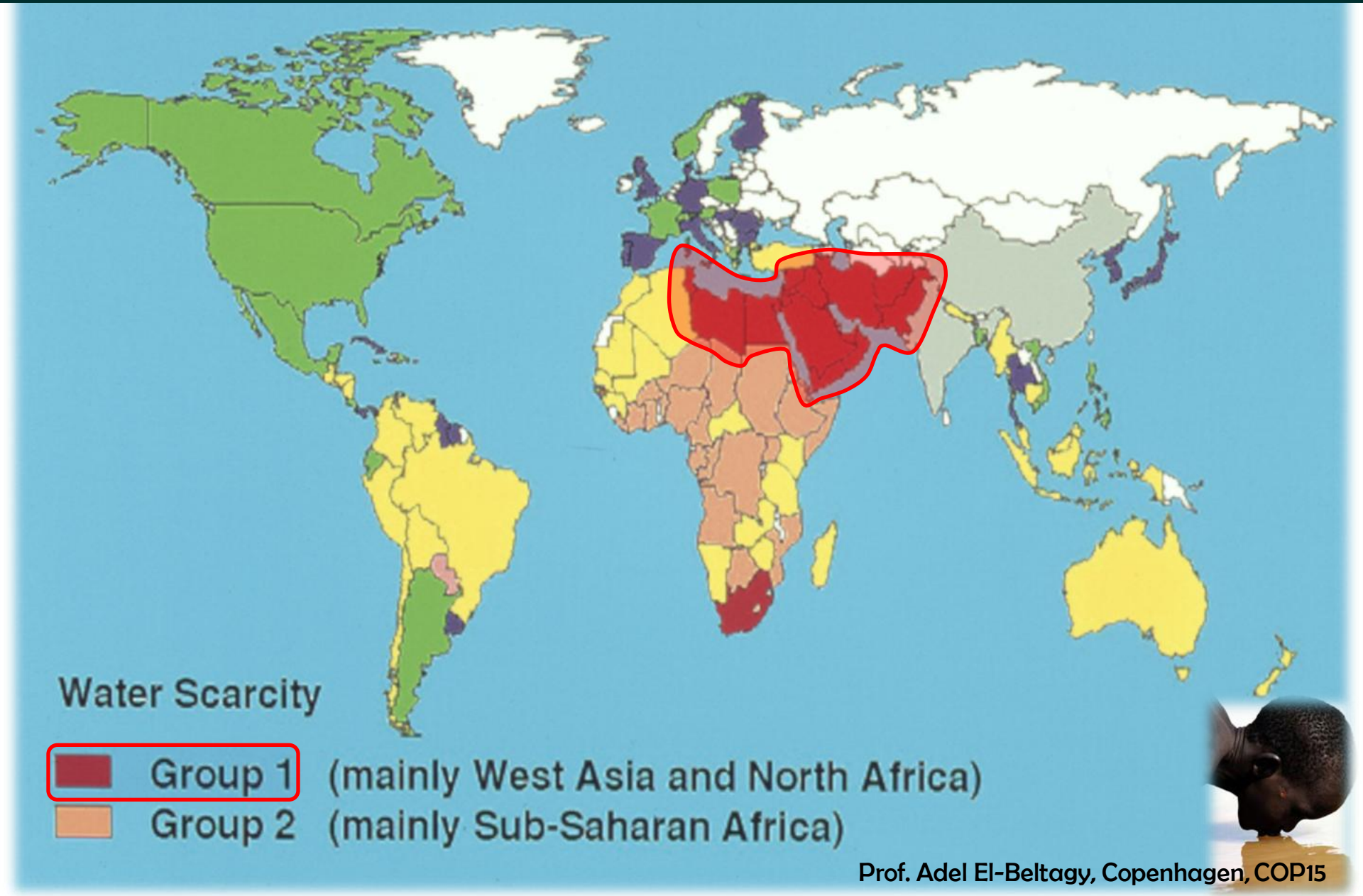
شح المياه المتوقع حتى 2025

Water Scarcity projection 2025



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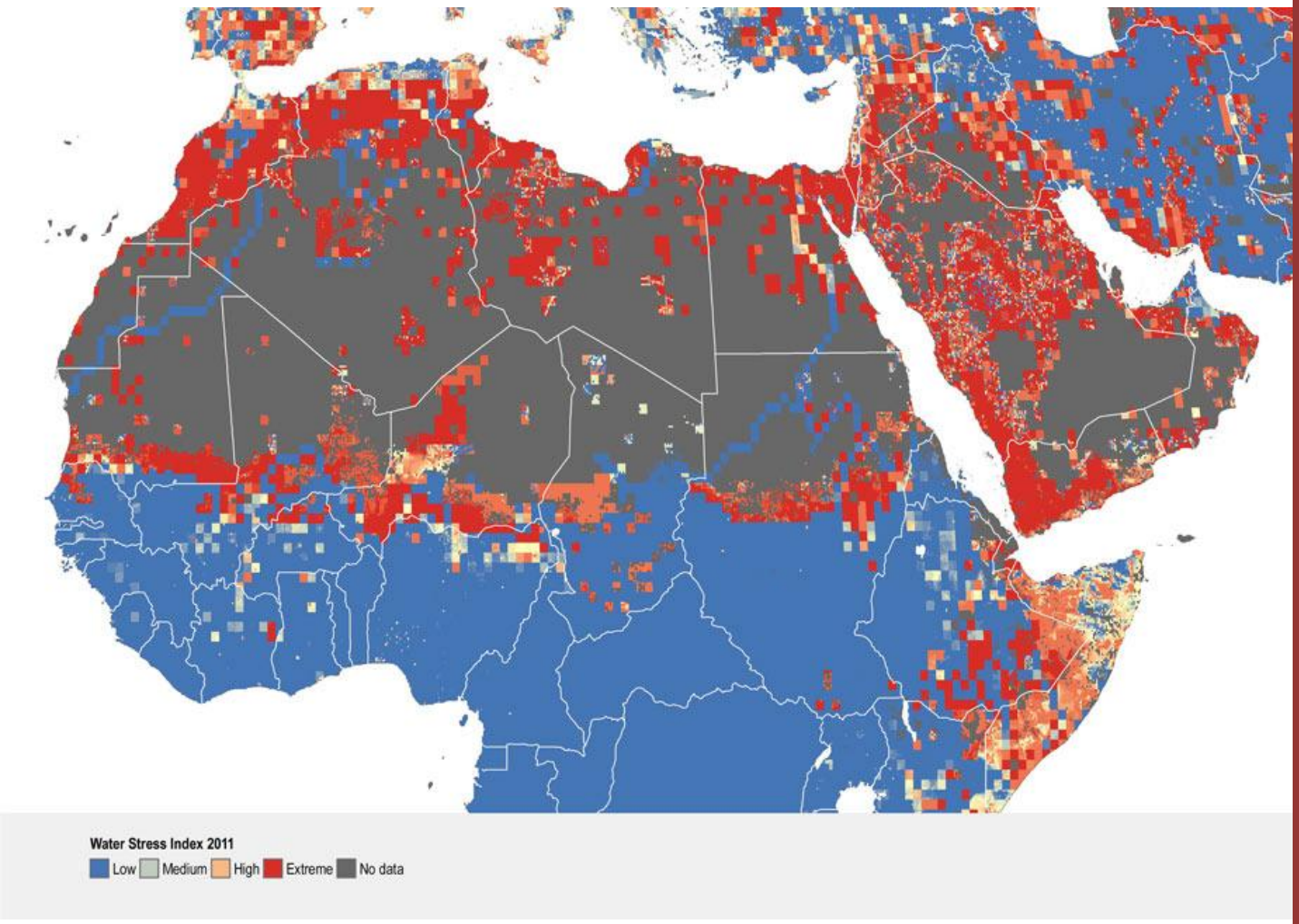
Water Stress



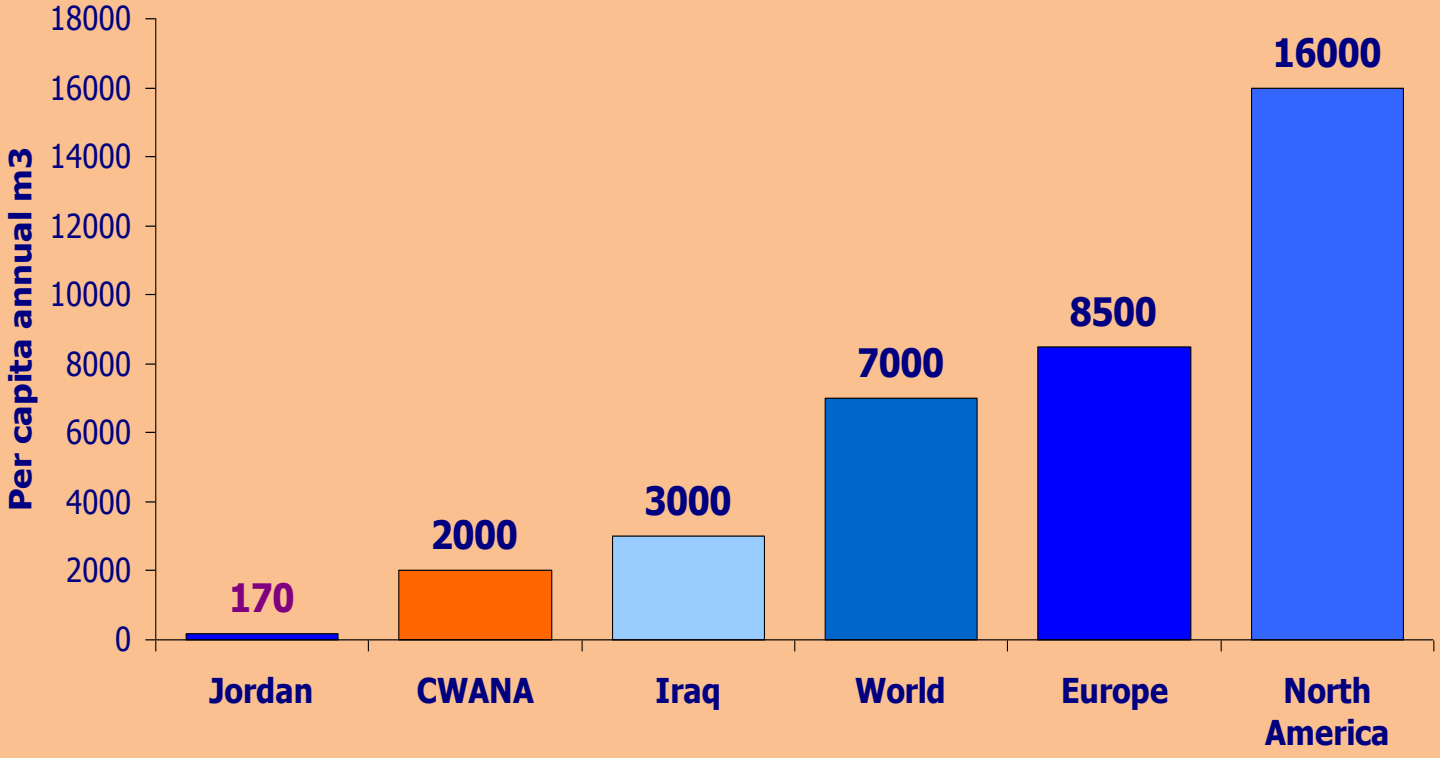
Source: Maplecroft Water Stress Index 2011

Top 20 water stressed nations

Country	Water Stress 2011 category	Water Stress 2011 rank
Bahrain	*Extreme*	*1*
Qatar	*Extreme*	*2*
Kuwait	*Extreme*	*3*
Saudi Arabia	*Extreme*	*4*
Libya	Extreme	5
Israel	Extreme	8
Egypt	Extreme	9
Jordan	Extreme	11
Morocco	Extreme	12
Algeria	Extreme	13
Oman	Extreme	14
Tunisia	Extreme	15
Malta	Extreme	16
Syria	High	17

Water management under scarcity

Annual renewable water share



انابيب مبوبة Gated Pipes

يتبع ..


مصاطب عريضة
Developing wheat growth on wide furrow

Modern irrigation systems

Central pivot

Sprinkler irrigation

Drip irrigation

NFT and hydroponics

يتبع ..

Fodder production in hydroponics

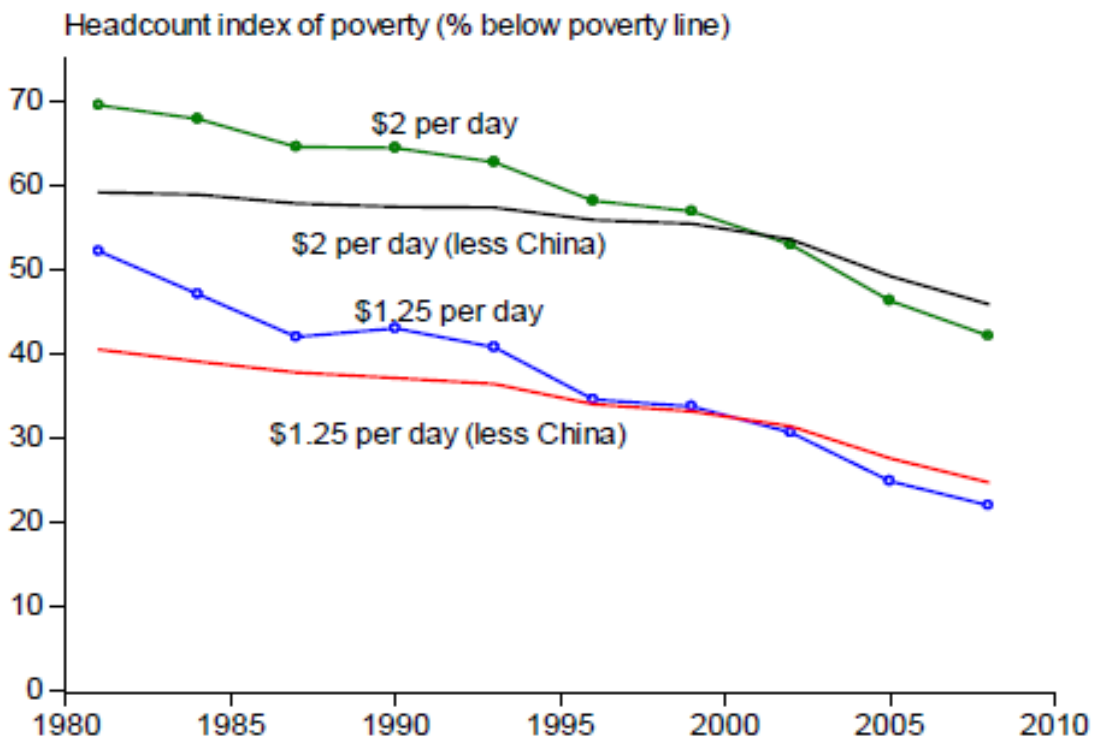
يتبع ..

Poverty Measures

The main Poverty Line is $1.25/Day

- **$2 a day** is the median poverty line for all developing countries
- **$1 a day**

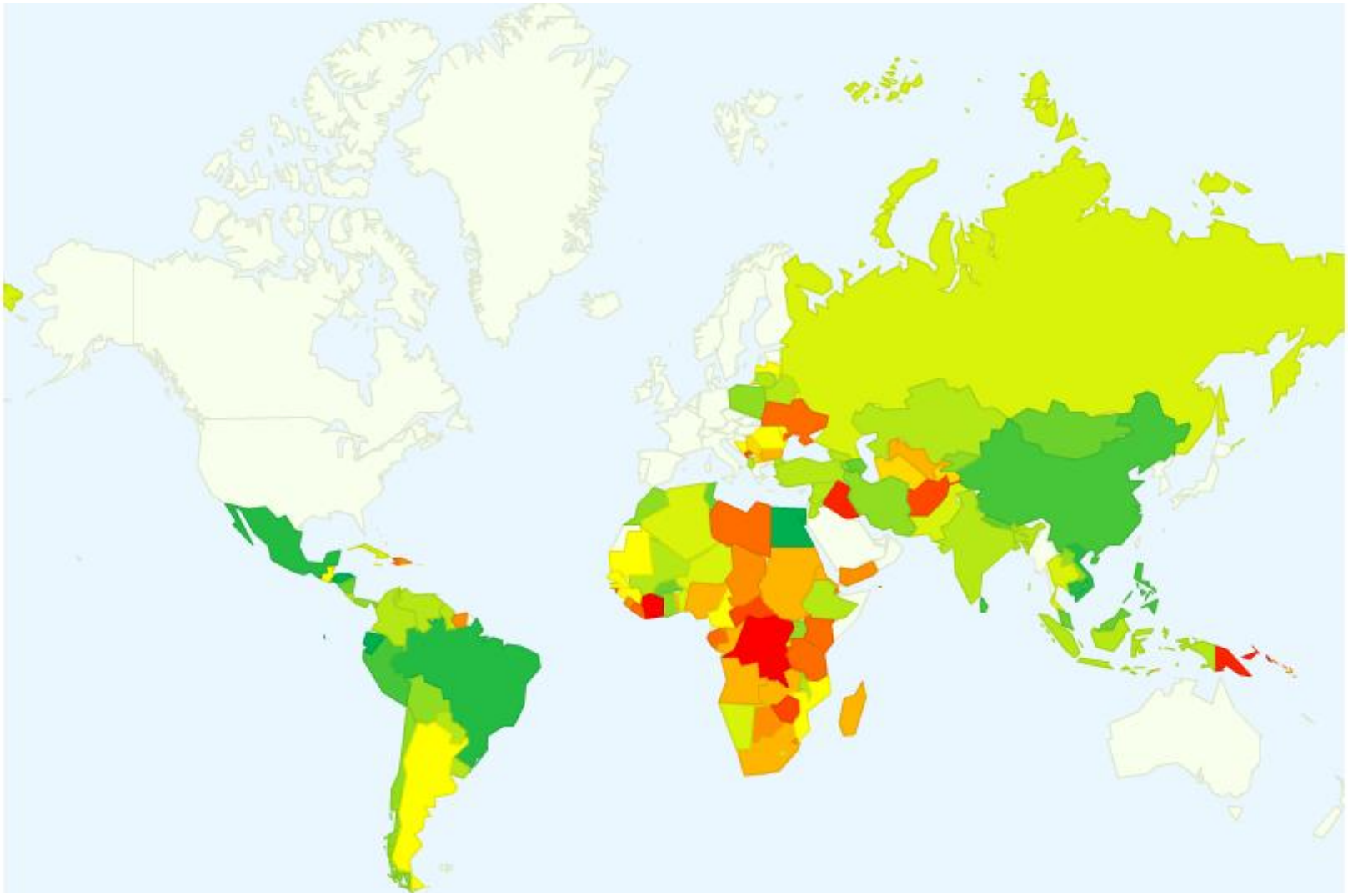
Figure: Poverty rates for the developing world 1981-2008



(PPP): Purchasing Power Parity

Source: Global poverty Update 2012, The World Bank

Overall MDG Progress Score 2011

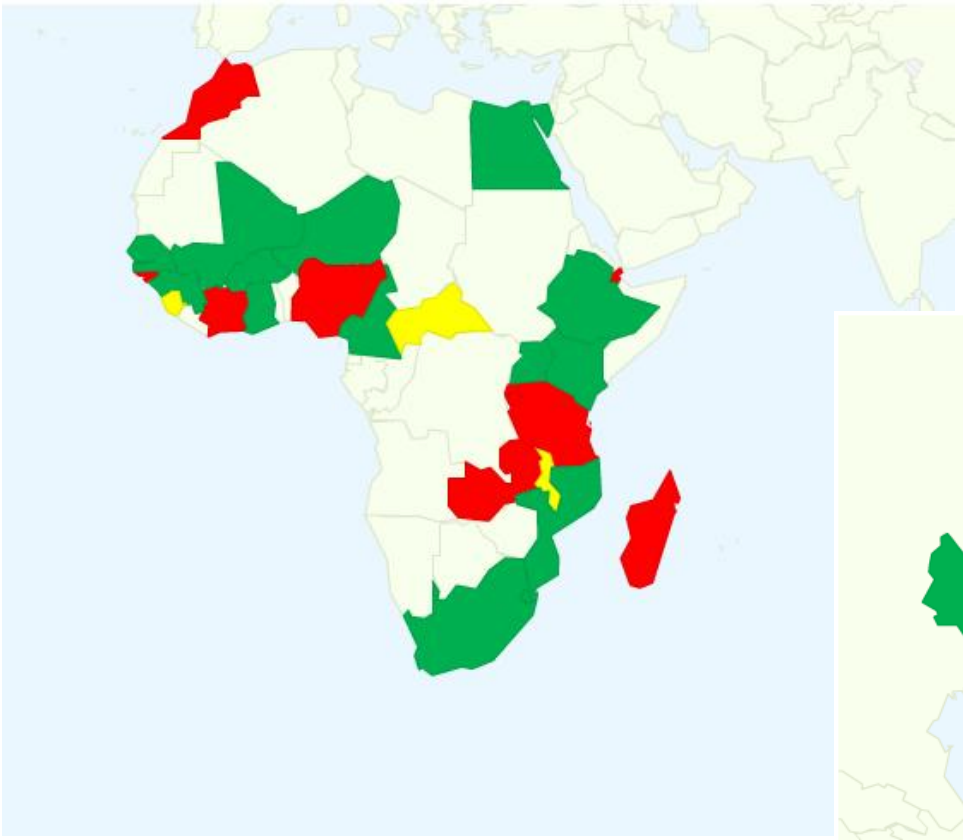


Source: World Development Indicators 2011

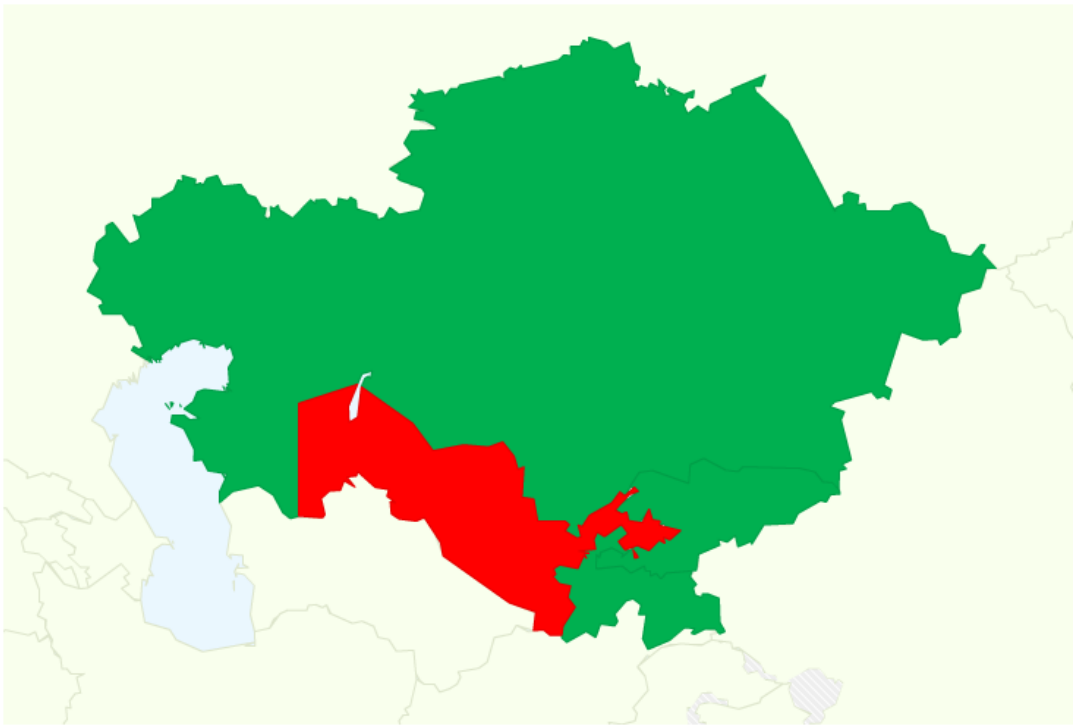
2011 MDG 1A Progress

Halve the Proportion of Population Below $1.25/Day

Africa



Central Asia

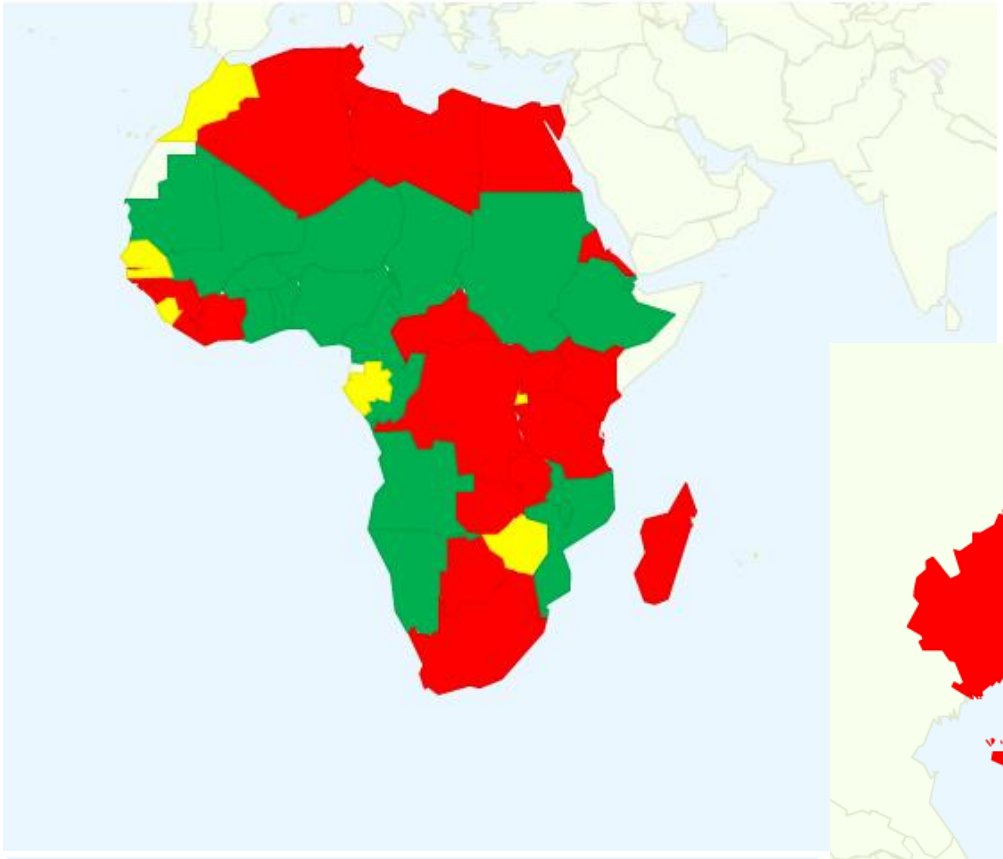


Progress: Off Target | Some Progress | On Target

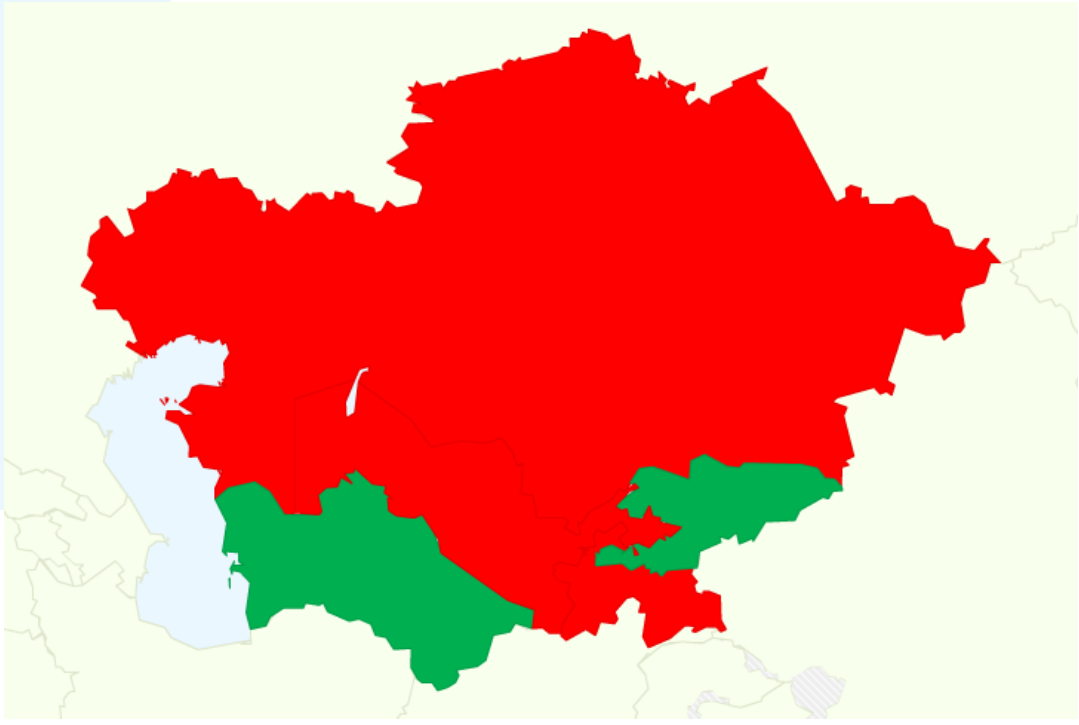
Source: World Development Indicators 2011

2011 MDG 1C Progress
Halve the Proportion of Undernourished Population

Africa



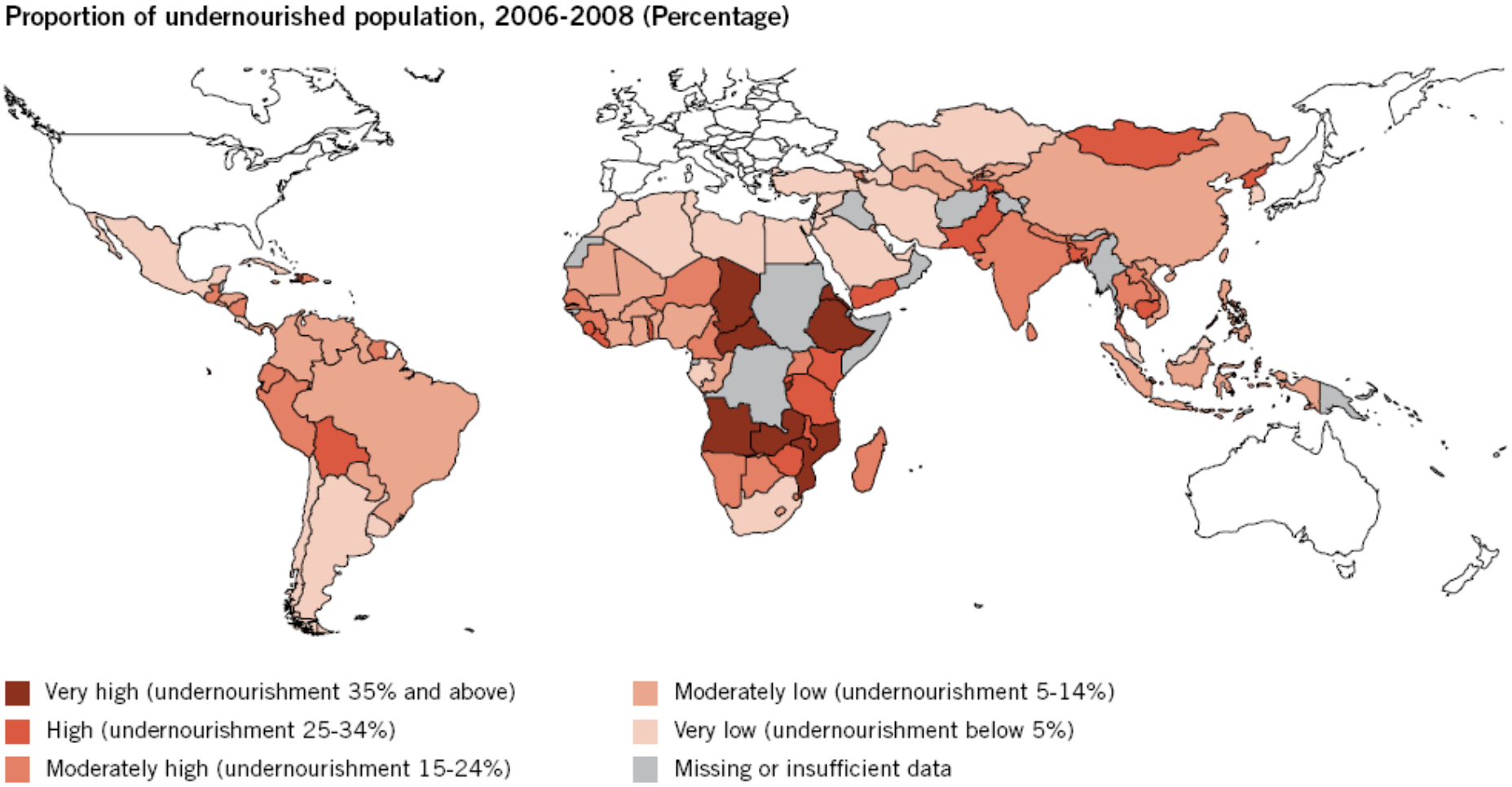
Central Asia



Progress: Off Target | Some Progress | On Target

Source: World Development Indicators 2011

Proportion of People who are Undernourished



Source: The Millennium Development Goals Report 2011, United Nations

2011 Regional Progress Chart on **MDG 1**

Goals and Targets	Africa		Asia				Oceania	Latin America & Caribbean	Caucasus & Central Asia
	Northern	Sub-Saharan	Eastern	South-Eastern	Southern	Western			
GOAL 1 | Eradicate extreme poverty and hunger									
Reduce extreme poverty by half	low poverty	very high poverty	high poverty	high poverty	very high poverty	low poverty	—	moderate poverty	high poverty
Productive and decent employment	very large deficit in decent work	very large deficit in decent work	moderate deficit in decent work	very large deficit in decent work	very large deficit in decent work	very large deficit in decent work	very large deficit in decent work	moderate deficit in decent work	large deficit in decent work
Reduce hunger by half	low hunger	very high hunger	moderate hunger	moderate hunger	high hunger	moderate hunger	—	moderate hunger	moderate hunger

Target already met or expected to be met by 2015.

Progress insufficient to reach the target if prevailing trends persist.

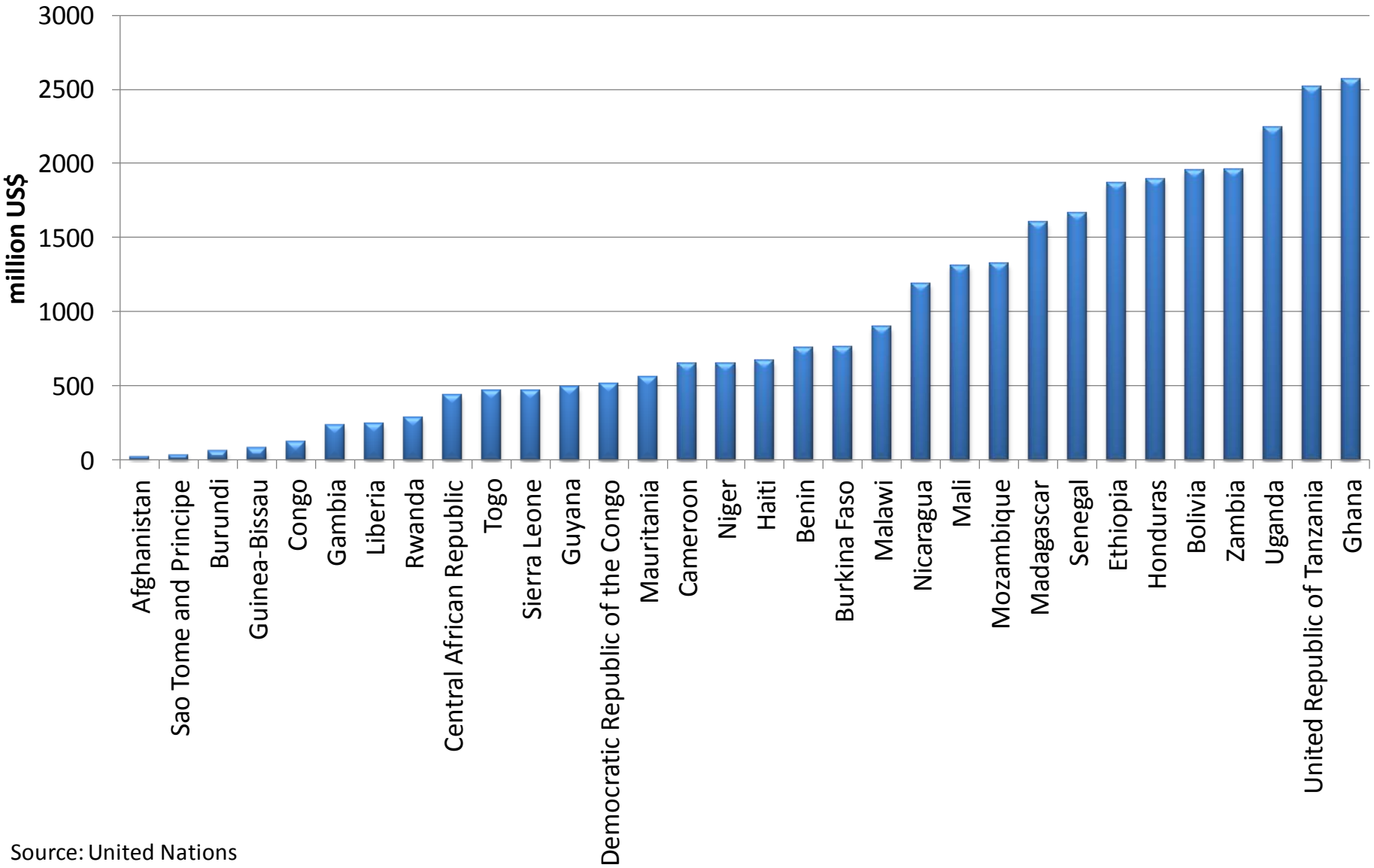
No progress or deterioration.

Missing or insufficient data.

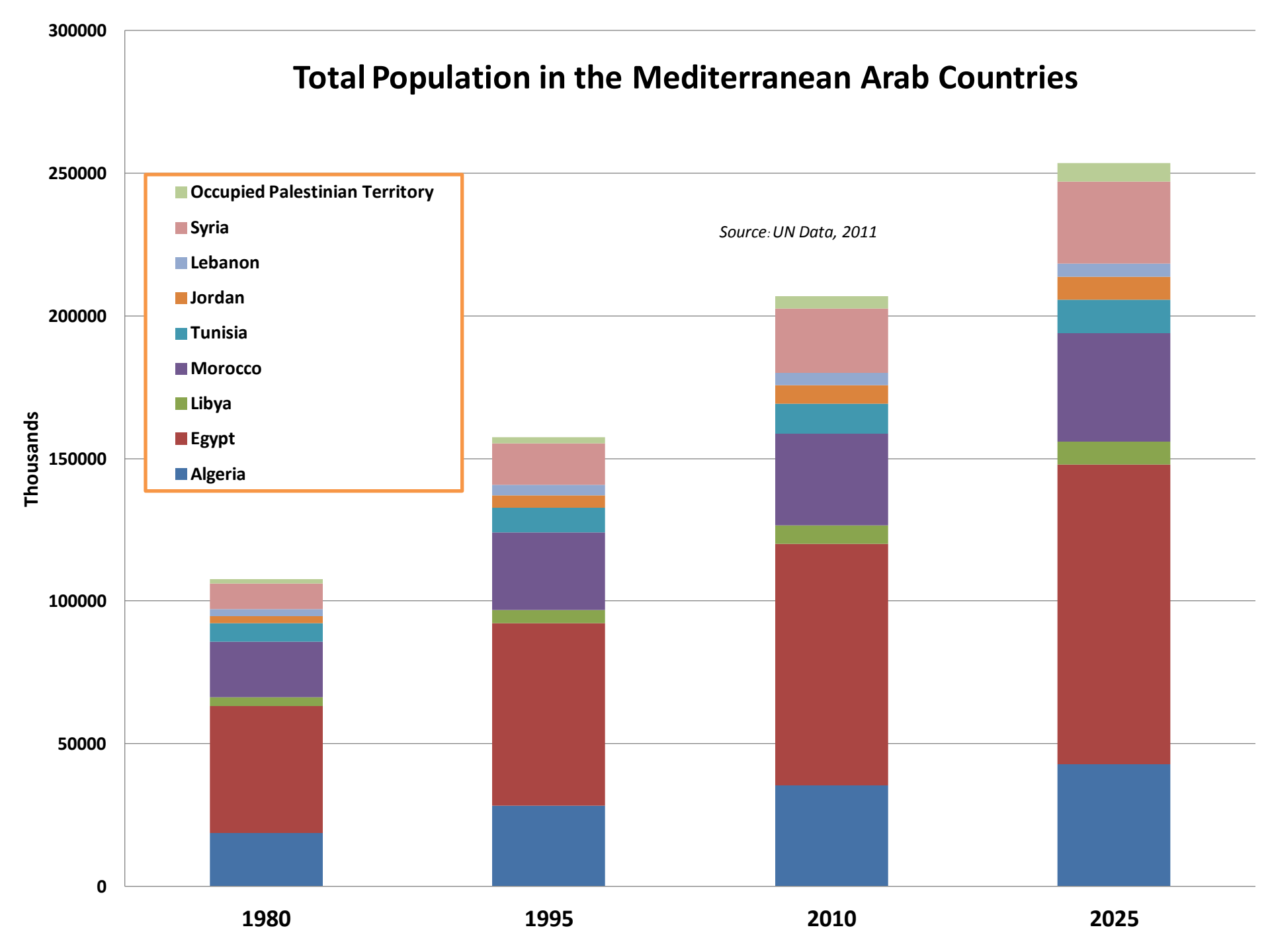
* The latest available data for most indicators are from 2009 to 2011

Source: United Nations

Debt relief delivered in full under MDRI initiative, cumulative million US$, 2011

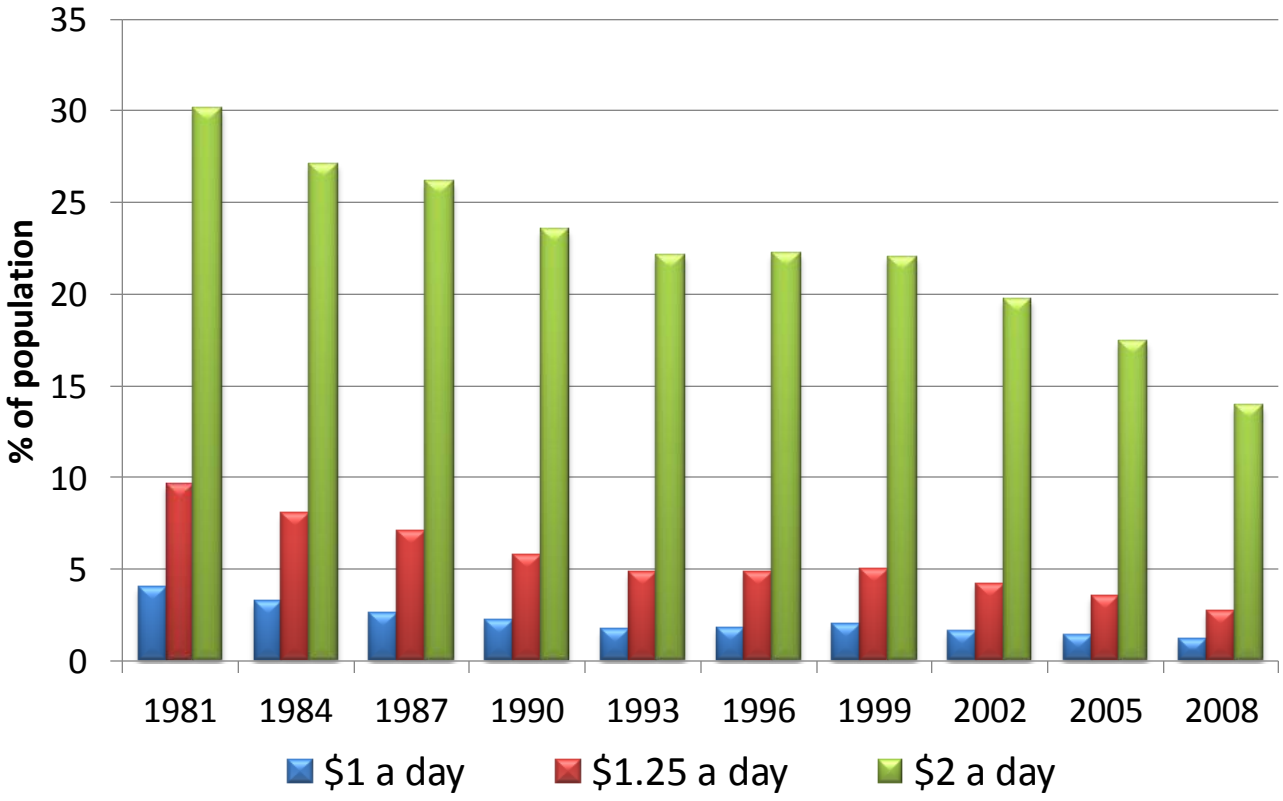


Source: United Nations


Total Population in the Mediterranean Arab Countries
Source: UN Data, 2011
Occupied Palestinian Territory
Syria
Lebanon
Jordan
Tunisia
Morocco
Libya
Egypt
Algeria
Thousands
300000
250000
200000
150000
100000
50000
0
1980
1995
2010
2025

Poverty Measures (Cont.)

% of Population below the 3 poverty lines in the Middle East and North Africa



Source: Global poverty Update 2012, The World Bank

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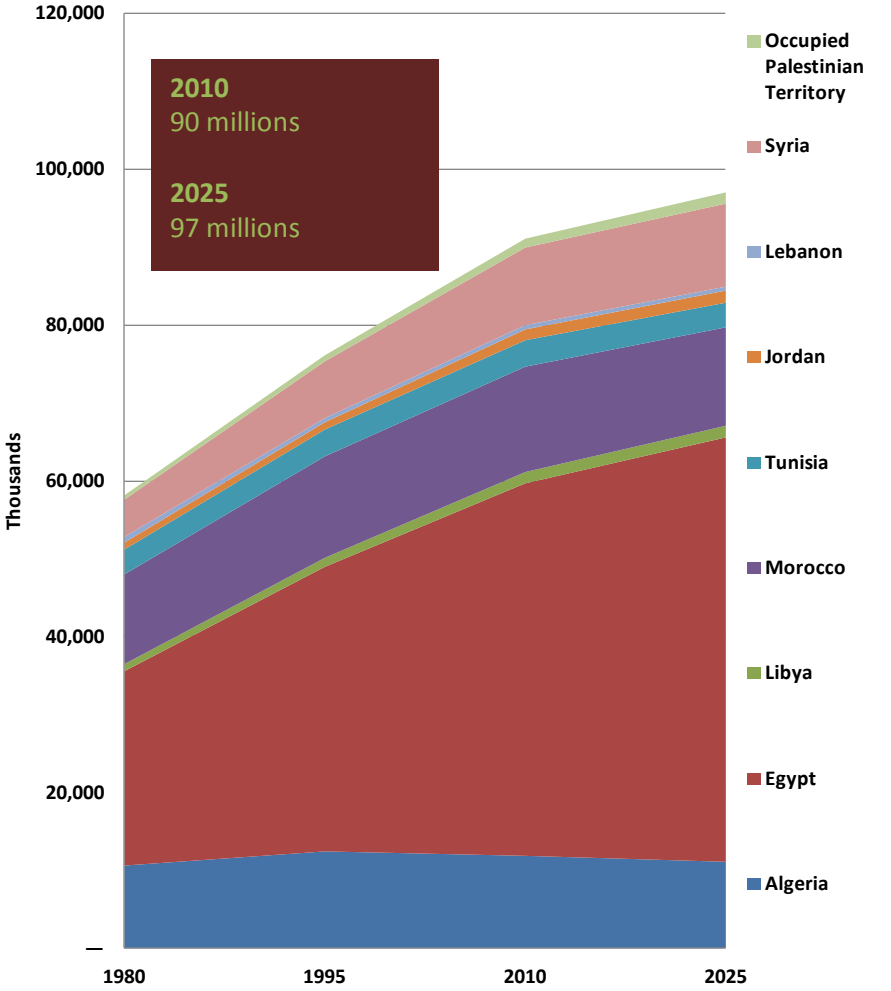
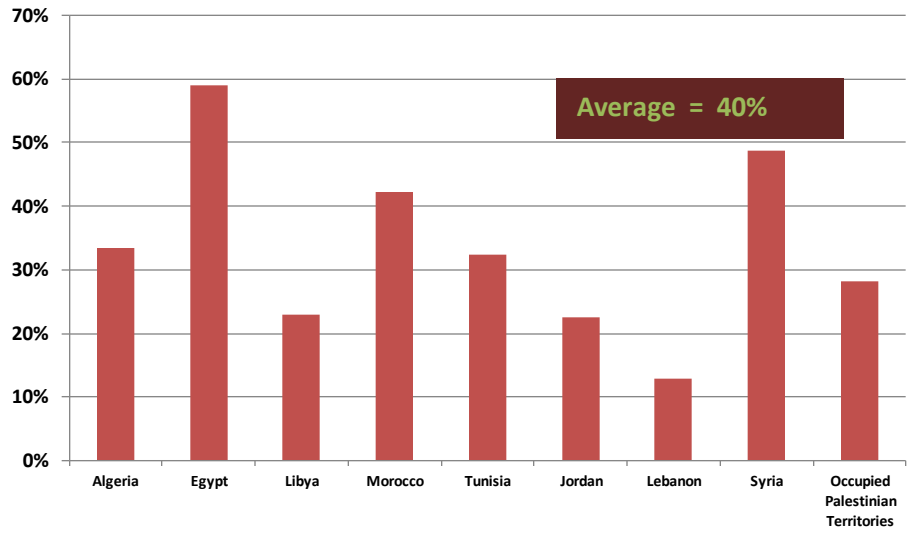
Agricultural and Rural Worlds in the Mediterranean Arab Countries

Rural Population in the Mediterranean Arab Countries (1980-2025)

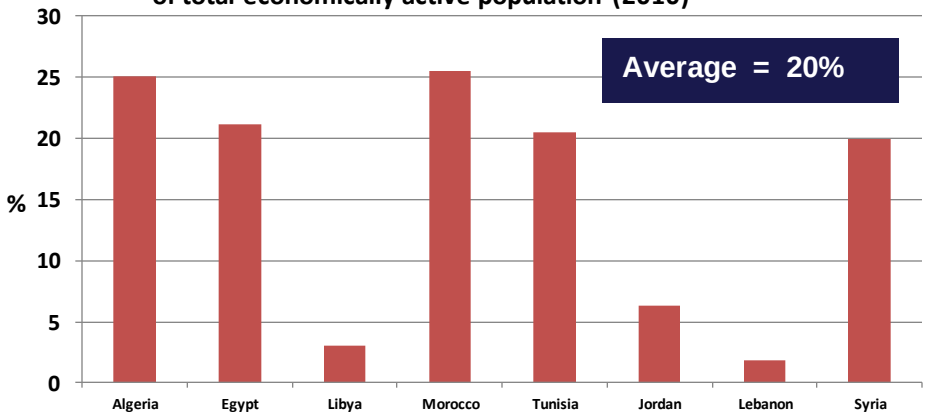


Source: UN Data, 2011

Share of the rural population (2010)



Agricultural Share of total economically active population (2010)



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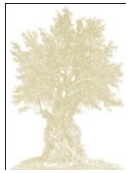
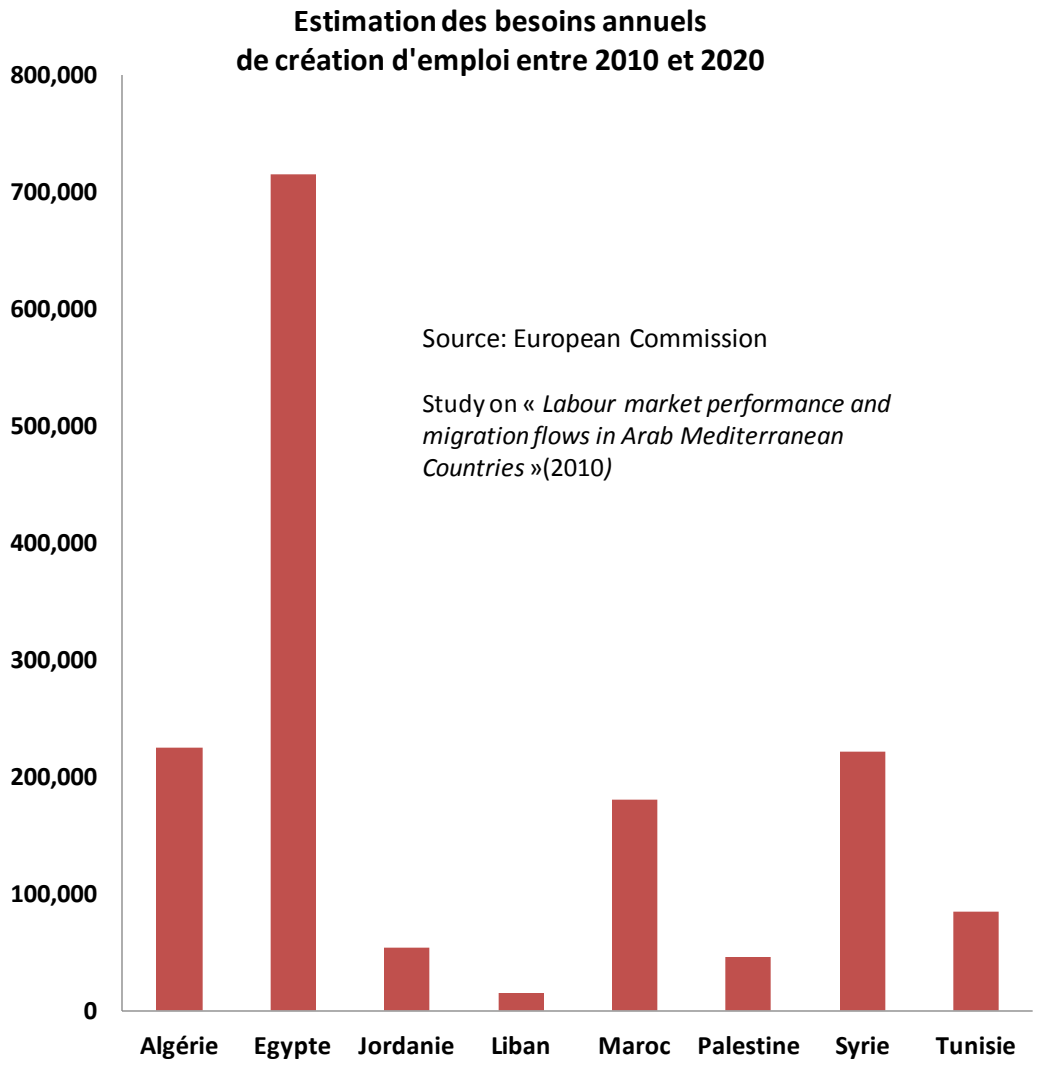
Employment and Migration issues





We need to create around 15 millions New Jobs
in the MACs from 2010 to 2020 (50% of them only for Egypt)

Total Working Age Population (15-64)
From 2005 to 2030

- ***+ 156 millions for MENA Region***
- ***- 24 millions for EU27***

In 2006, around 4,7 millions official emigrants
from MACs lived in EU27
(France, Italy, Spain, Germany, Netherlands, UK…)

In 2006, around 6,3 millions official emigrants
from MACs lived in the rest of the World

Total in 2006
= 11 millions emigrants from MACs in the World
= 5% of the total population of MACs

Now….

Strong evolution in the MACs and increase of migration pressure in the Mediterranean Basin ?

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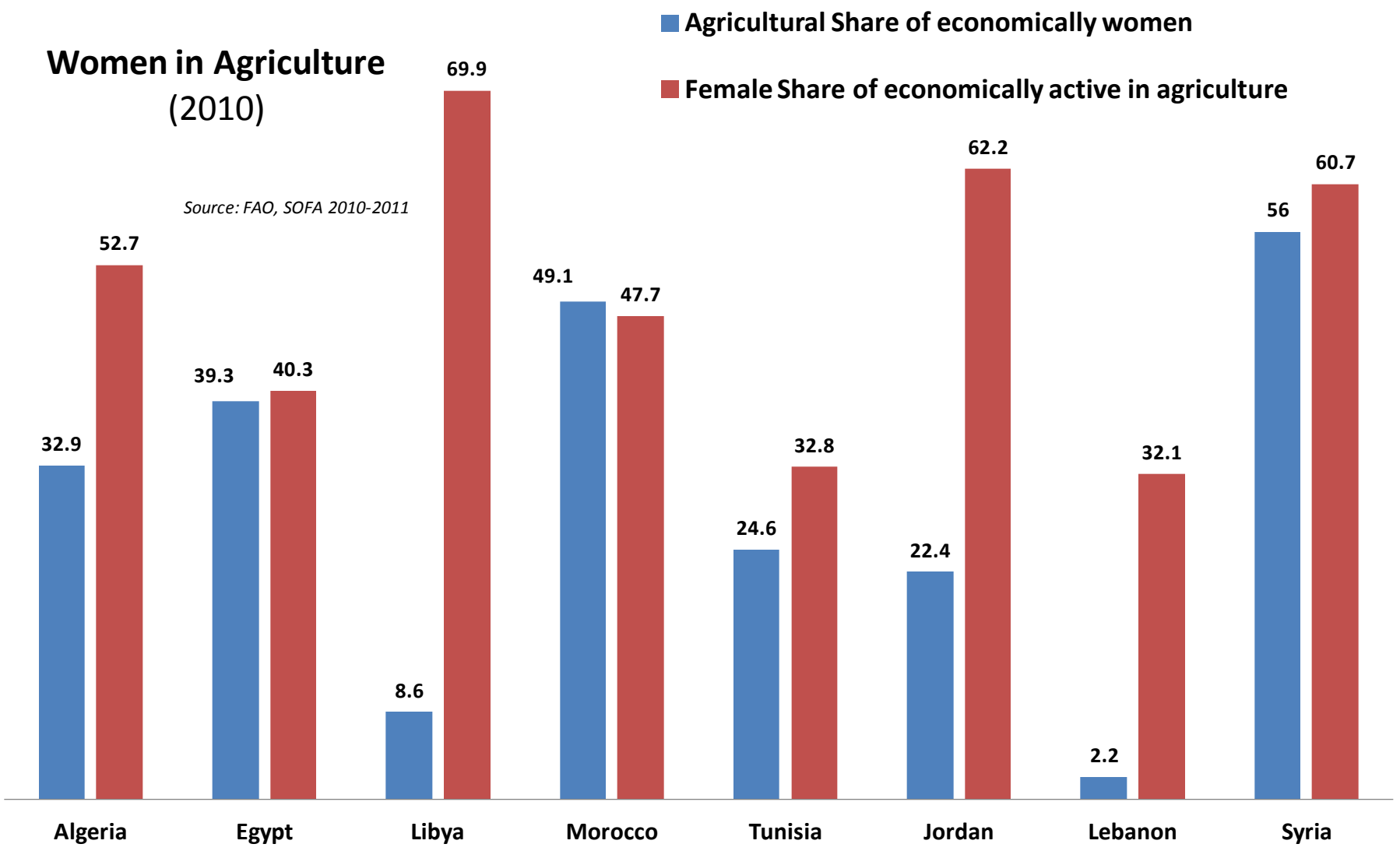
Women in Agriculture



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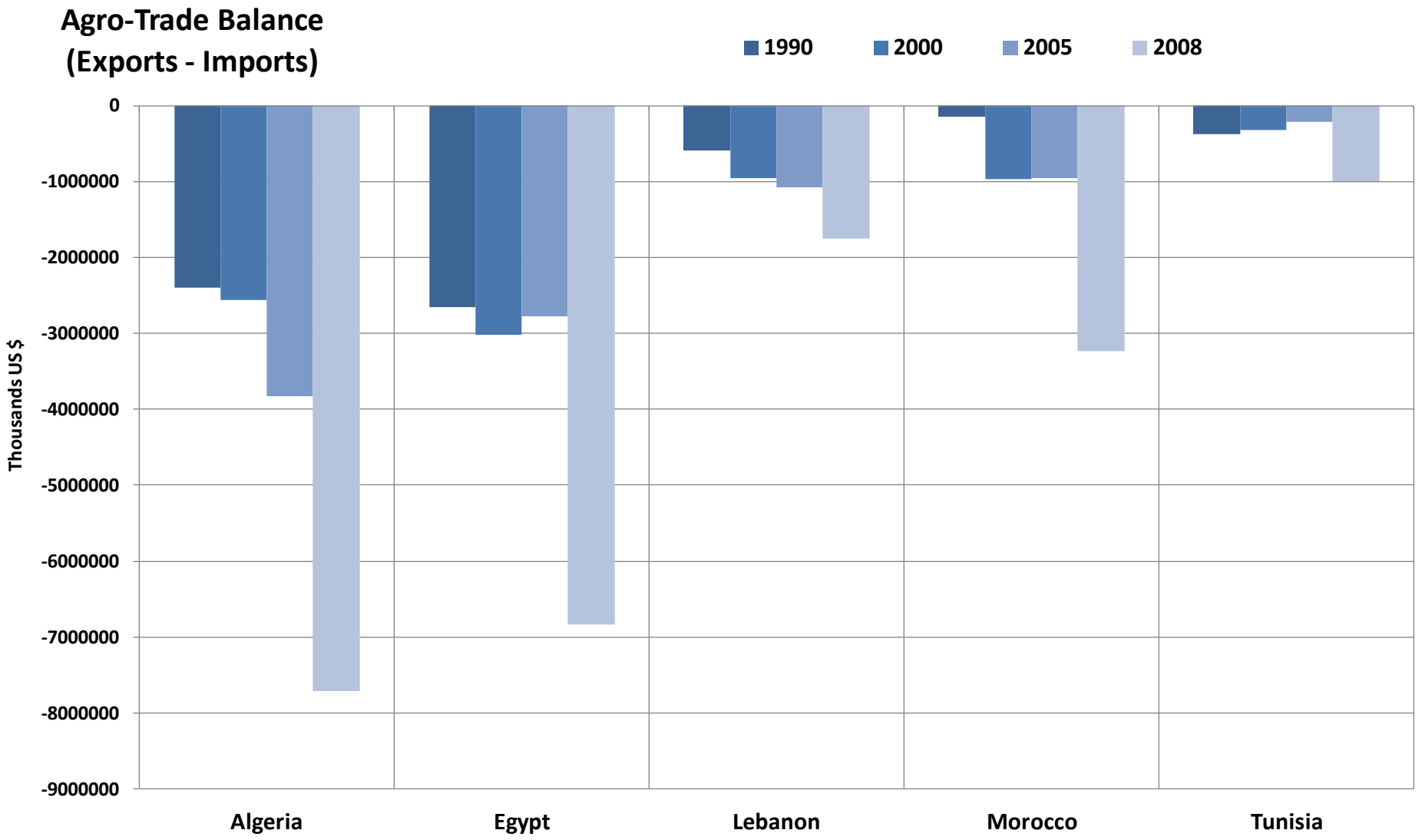
Food Insecurity



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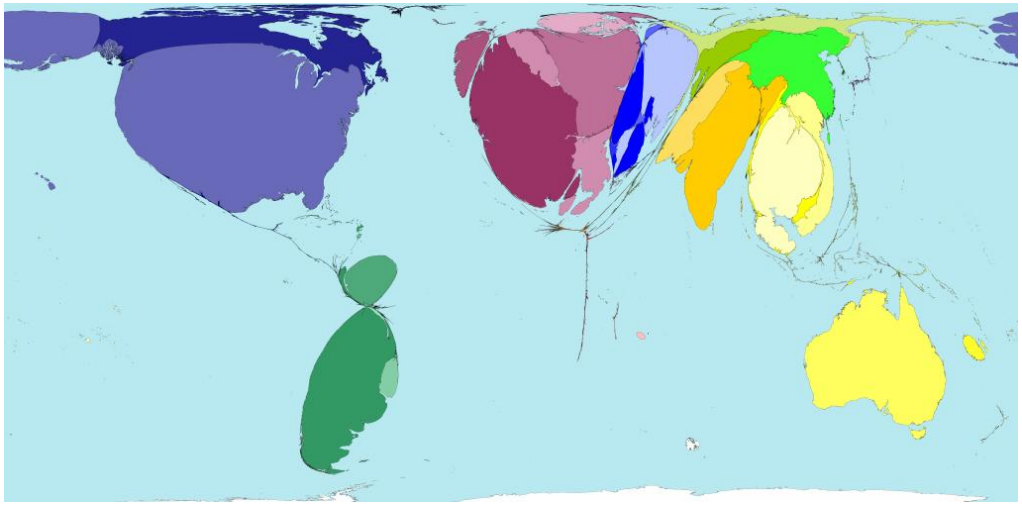
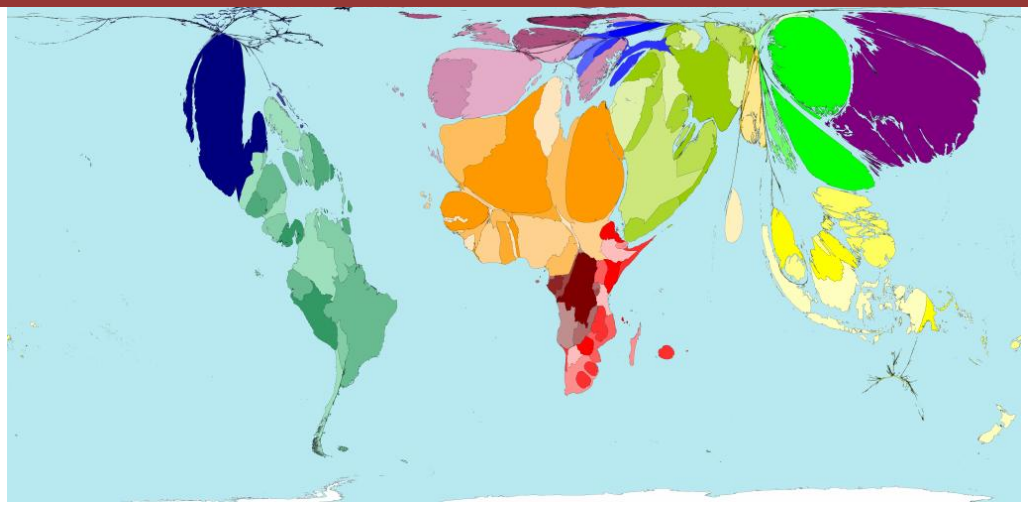
Cereals Tensions

Cereals Exports

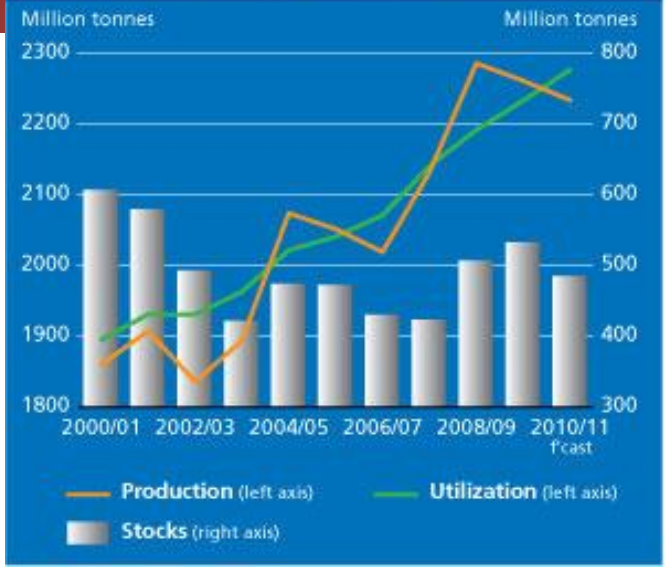


Cereals Imports



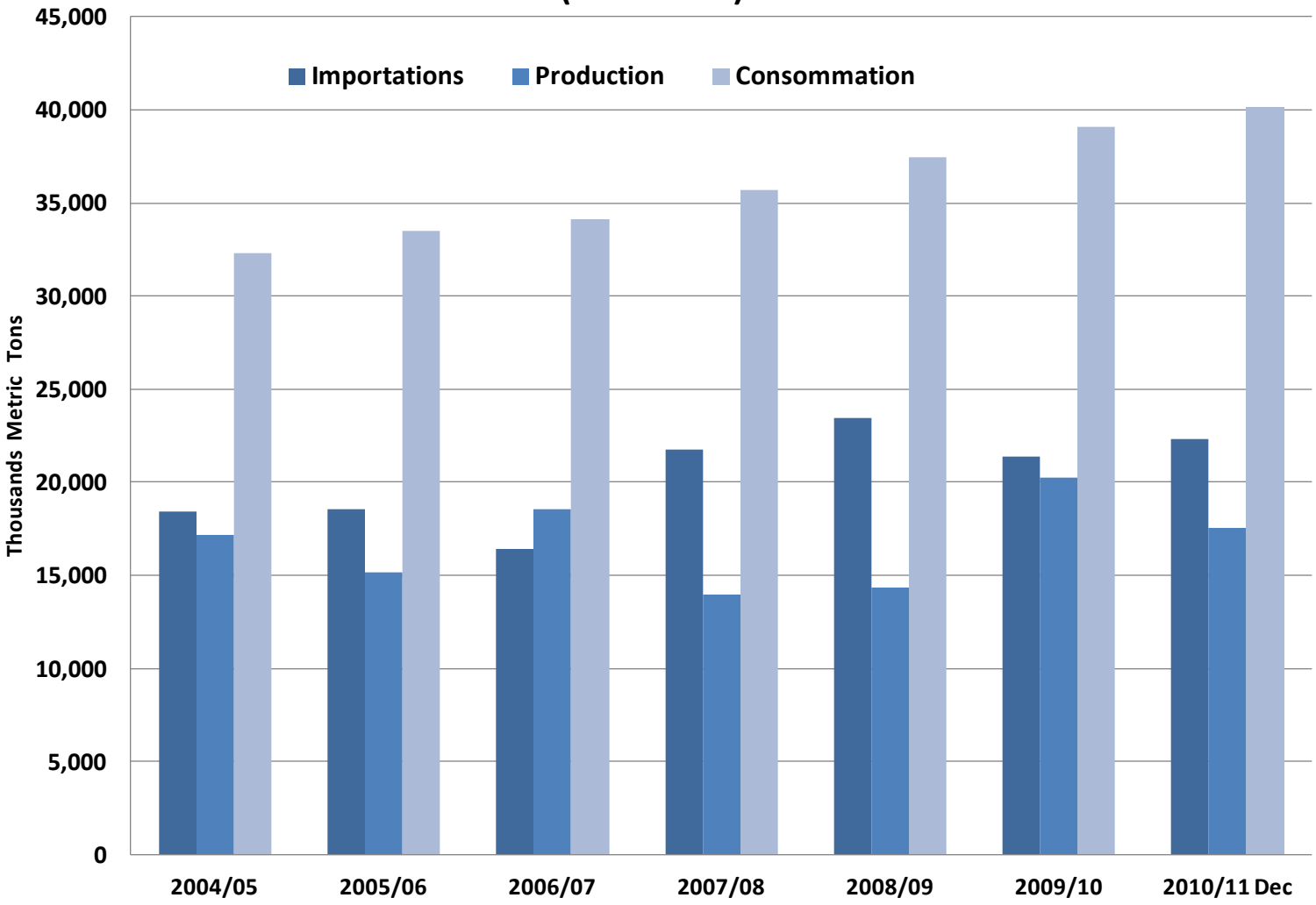
FAO Food Price Index

Cereal production,utilization and stocks



Cereals dependency

Imports, Production and consumption of wheat in North Africa (2004-2011)

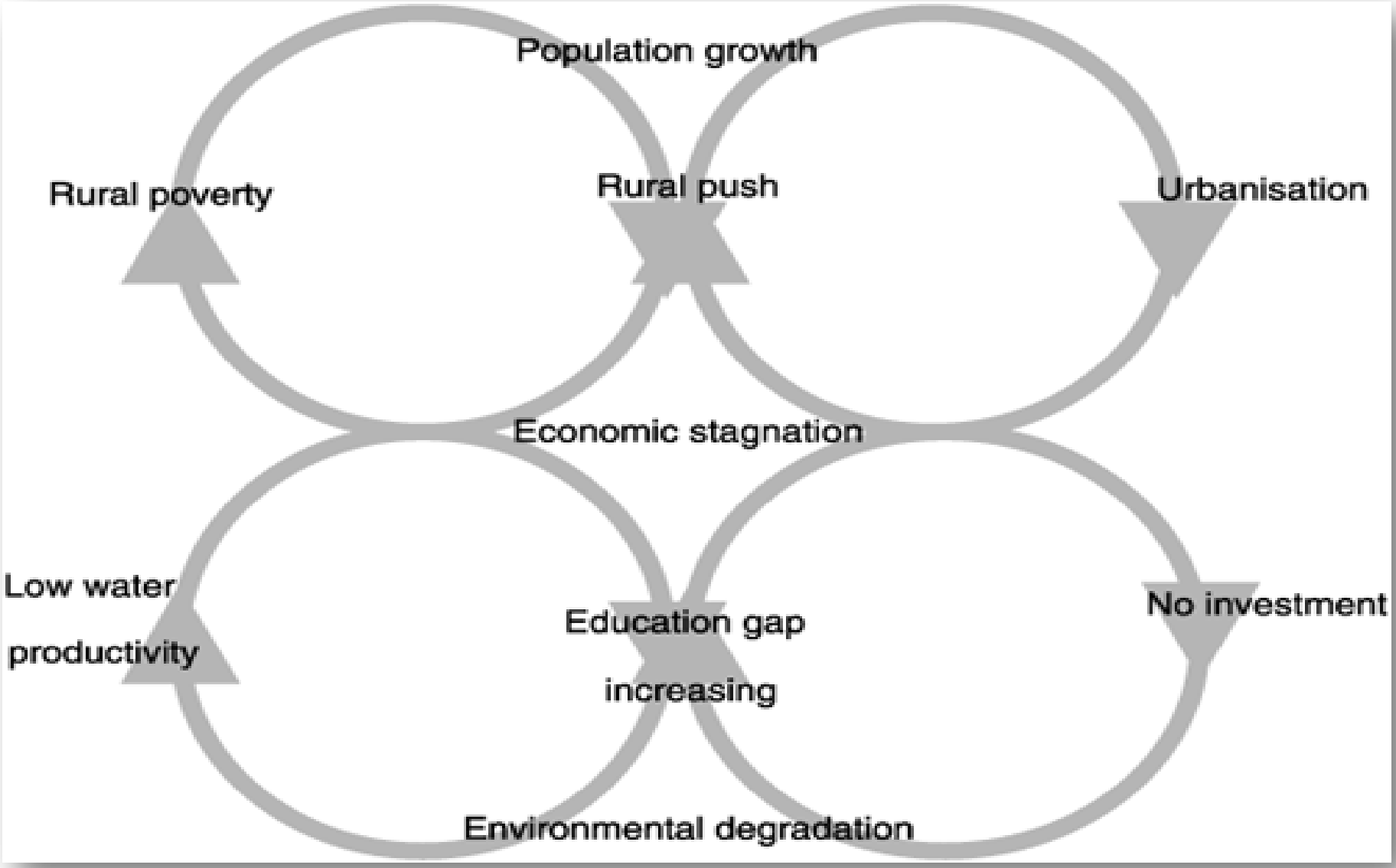


Bread Baskets

Per capita wheat consumption, in pounds per year*

Tunisia	478
Algeria	464
Egypt	409
Iraq	288
EU	244
U.S.	177
Thailand	32

*2010-2011 forecasts (food use)
Source: Food and Agriculture Organization

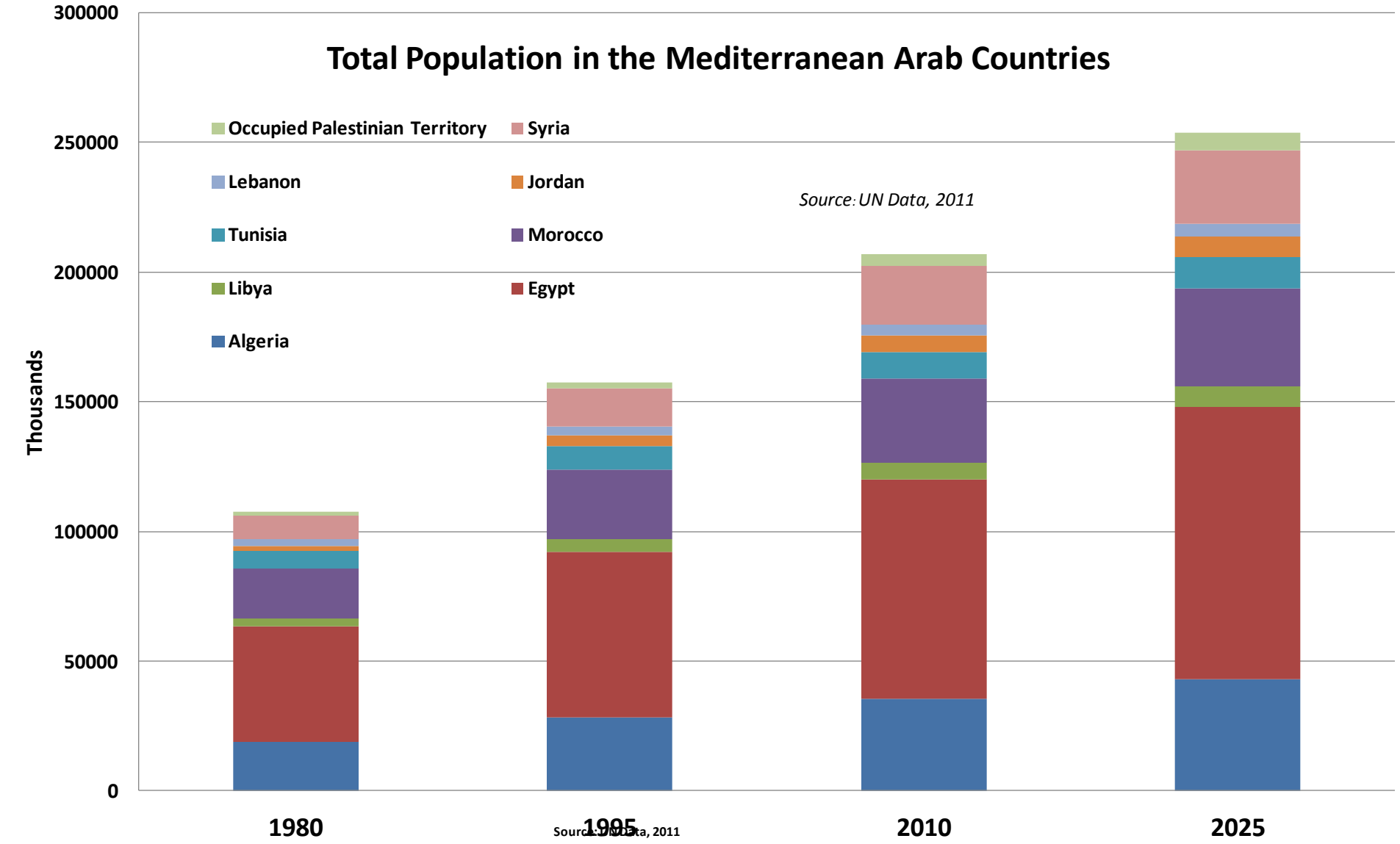


The tendencies of the MENA region constitute a complicated context for the water sector

* http://www.idrc.ca/

CIHEAM
www.ciheam.org

Demographic Dynamics



CIHEAM
Historical Background

The **I**nternational **C**entre for **A**dvanced **M**editerranean **A**gronomic **S**tudies (CIHEAM)
was founded in 1962
under the auspices of the OECD and the Council of Europe

It is an **intergovernmental organisation**
comprising **13 member countries** from the Mediterranean Basin.

It has 3 central missions that are Interlinked:
training, research and cooperation

CIHEAM develops its activities in the fields of agricultural and rural development, food issues and sustainable management of natural resources.

The CIHEAM is structured around a Secretariat based in Paris and four Mediterranean Agronomic Institutes (Bari, Chania, Montpellier and Zaragoza).

CIHEAM
www.ciheam.org

Human Development and Mediterranean Trust

Providing supplementary education (Economic as well as technical)

Developing a spirit of international co-operation among agricultural personnel and professional organizations

Enhancing Development and raising prosperity in the Mediterranean region.

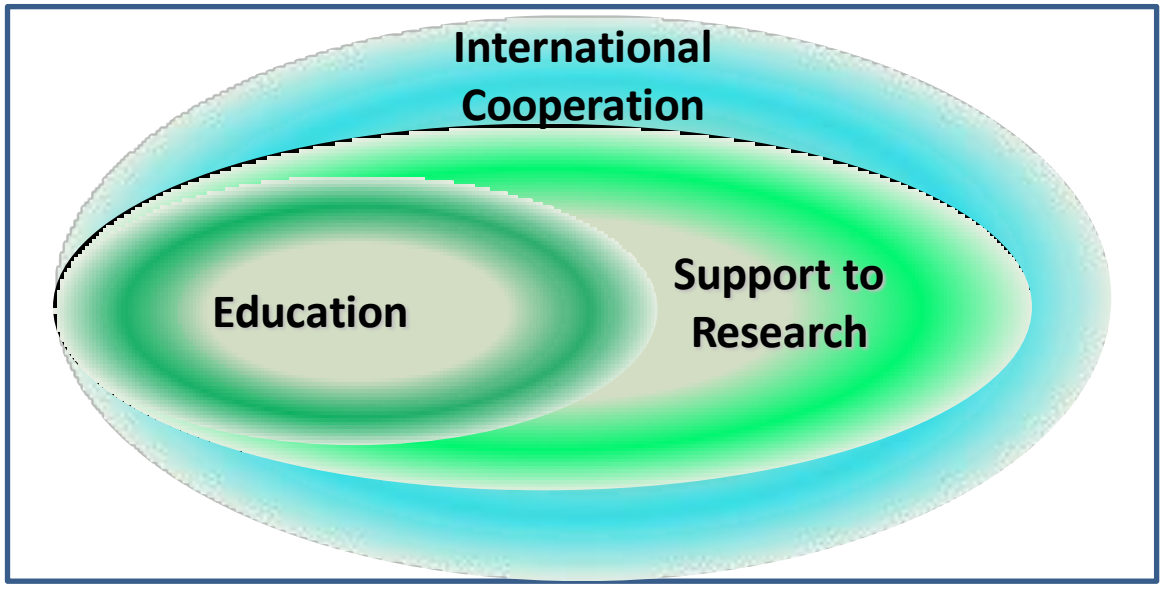
Last 5 years (2005-2010)

Master Degree

Graduated: 1915
Scholarships: 1389

Specialized education
(short courses)

Participants: 5279
Scholarships: 2690



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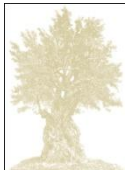
Confidence building for regional cooperation



- **Focusing on strategic themes of common interests** (pragmatism)

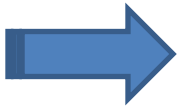
  Trade (convergence of standards) / Water and Sustainability / Education / Scientific cooperation / Innovation and Industrial development / Agriculture and rural areas / Employment *(cf. Euromed 2030 Report)*

- **Euromed New Deal**

  - Pooling the means, integrating policies and actions
  - Mobilizing all actors (private sector, local civil society, cities...)
  - Informing and raising awareness in the area
  - A more proactive role and a deeper financial engagement of the MPCs
  - An ambitious and stronger Europe

- **Prerequisites**

  - A forward looking approach
  - Responsible attitudes and values
  - Multilateralism, union in adversity, confidence
  - Europe: not to be a mere player but a real partner



Avoiding the worse scenario: **a "Mediterranean without Europe"**

Strive toward Success

- Developing Rural Infrastructure:

  In **Tanzania**, the Agricultural Sector Development Strategy (ASDS) and the recent Kilimo Kwanza (Agriculture First) initiatives build rural roads, irrigation and grain storage facilities. For instance, the Road Fund led to a **27% increase** in good roads, which helped link farmers to food markets.

  Food poverty in Tanzania has fallen by 11% between 2001 and 2007.

Strive toward Success (Cont.)

- Innovative Financing Schemes are proven to enhance the ability of farmers to access input markets.
  - In **Nigeria**, National Special Programme for Food Security was followed by a near **doubling** in agricultural production and farmers' income.

    Farmers were able to buy inputs using interest-free loans to be repaid following harvest.

  - In **Bangladesh**, $107 million is to be distributed in the form of Agriculture Input Assistance Cards, targeting poor households.

    Of the total 18.2 million farmers in Bangladesh, **9.1 million** marginal, small and medium farmers are eligible for the cash subsidy.

Lack of Support to Smallholders as a driver of Hunger

Key Challenges

- Insufficient aid to agriculture
- Failing to meet aid effectiveness commitments: Agricultural aid programmes are particularly **poorly coordinated** among donors.
- Insufficient spending on agriculture by developing countries
- Africa's failure to meet spending commitments
- Failure to spend on supporting sustainable smallholder agriculture and other services targeting the poorest

- Agriculture expenditure **halved** in Asia and sub-Saharan Africa and **declined by two-thirds** in Latin America.
- In India, where the largest number of hungry people reside (over 200 million) **agriculture** receives just **3.7%** of government spending.

Agricultural Spending:

- In 2010, **only 8 African countries** had met the 10% target of CAADP.
- 14 African countries spend less than 5% while 16 countries spend between 5% and 10%.
- Countries in **Asia** increased their spending to an average 8.5%-11%.
- FAO notes that the countries with the least hunger tend to have higher expenditures on agriculture whereas the countries enduring most undernourishment tend to spend less.

Conditions to Support Smallholder Agriculture

- **Focus their agricultural spending overwhelmingly on women farmers.**
- **Reverse the decline in extension services:**

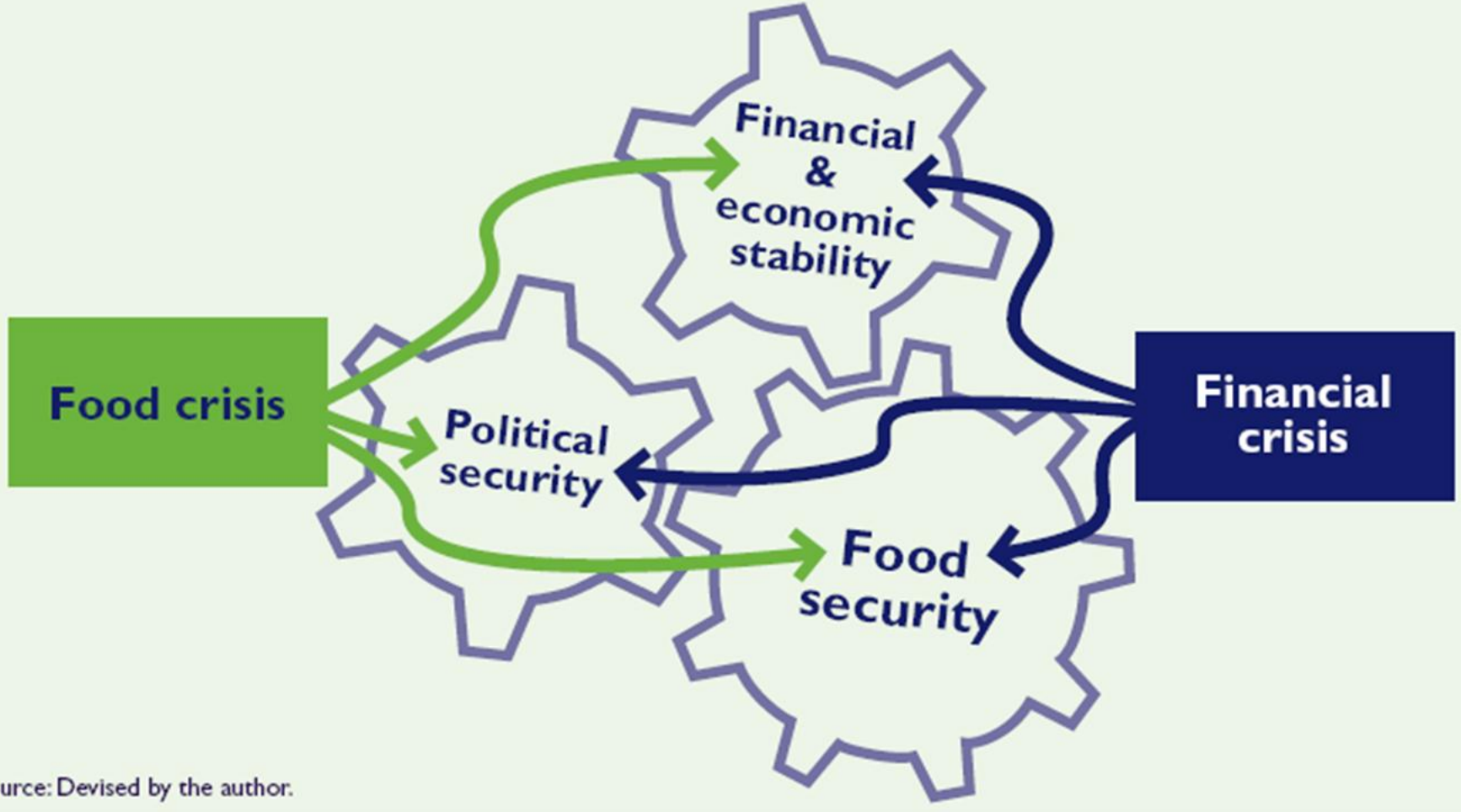
  Extension services are vital in helping poor farmers to improve food productivity by accessing training or information on the best farming techniques.
- **Provide credit to small farmers.**
- **Spend more on agricultural research.**

  *Public ARD funding in **developing countries** amounted to around **$5 billion** in 2008; IFPRI has called for this to double to **$10 billion by 2013**. If this investment were targeted at the poorest regions of the world – sub-Saharan Africa and South Asia – **282 million people** would be lifted above the poverty line by 2020*
- **Ensure farmers have much greater access to key inputs, seeds, water harvesting, land, organic fertiliser etc.**

Solutions… MDG 1 Rescue Packages

- Massively increase global spending on food security by at least $40 billion per year.
- Develop national MDG 1 ‘rescue plans’ with donor support as part of costed, time-bound strategies.
- Shift agricultural spending towards the services which support smallholder agriculture and the rural poor.

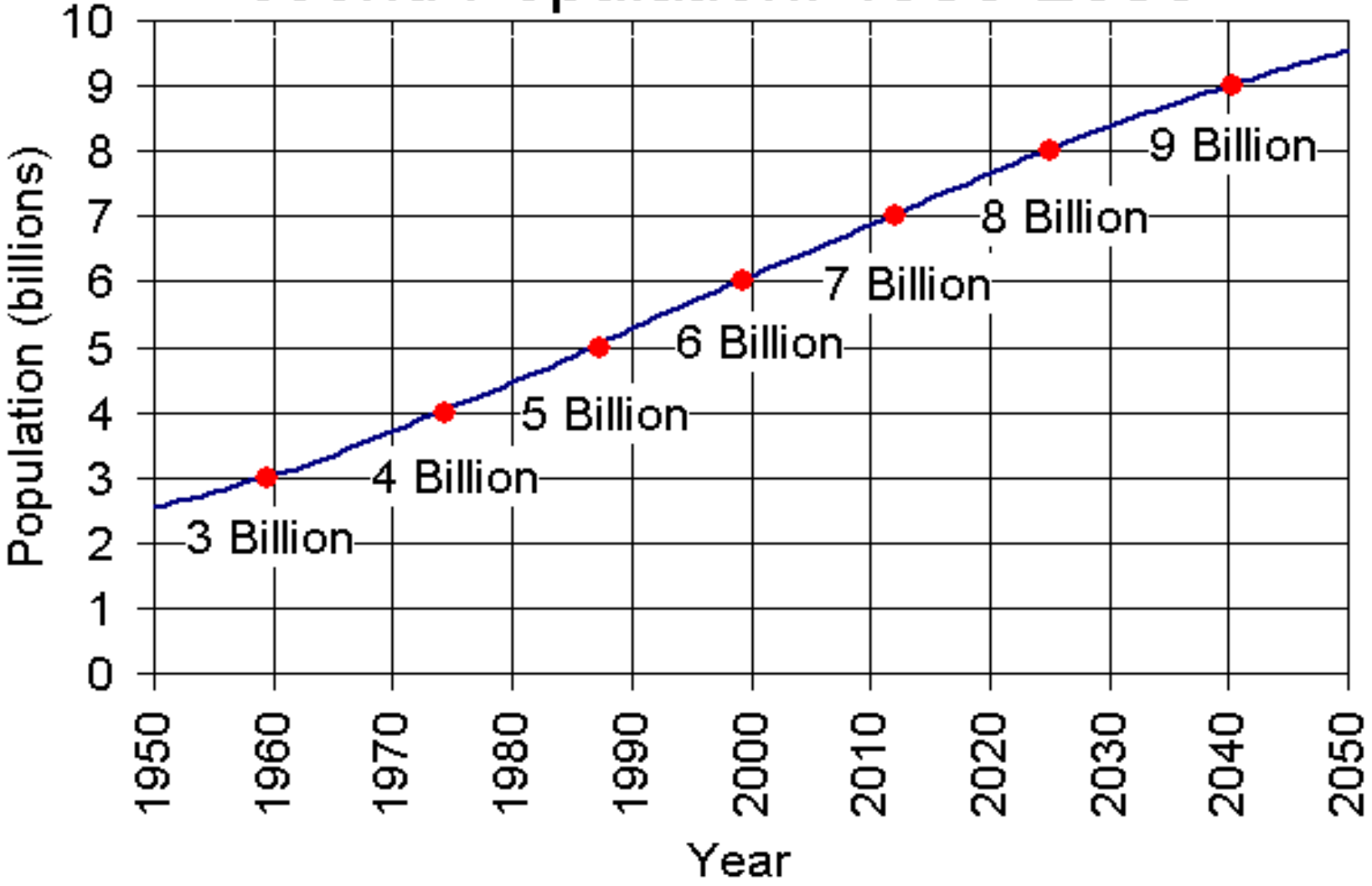
Figure 1—Linkages between the food and financial crises



Source: Devised by the author.


Sustainable Agricultural Development
Water Resources
Legislations
Policies
Technology
Technology
Human Resources
$ Funding $
Land Resources
Prof. Adel El-Beltagy, Copenhagen, COP15

World Population: 1950-2050



Source: U.S. Census Bureau, International Data Base, December 2008 Update.

MDG 2015 **and Beyond???**

The Millennium Development Goals

Eight Goals for 2015

Eradicate extreme poverty and hunger

Achieve universal primary education

Promote gender equality and empower women

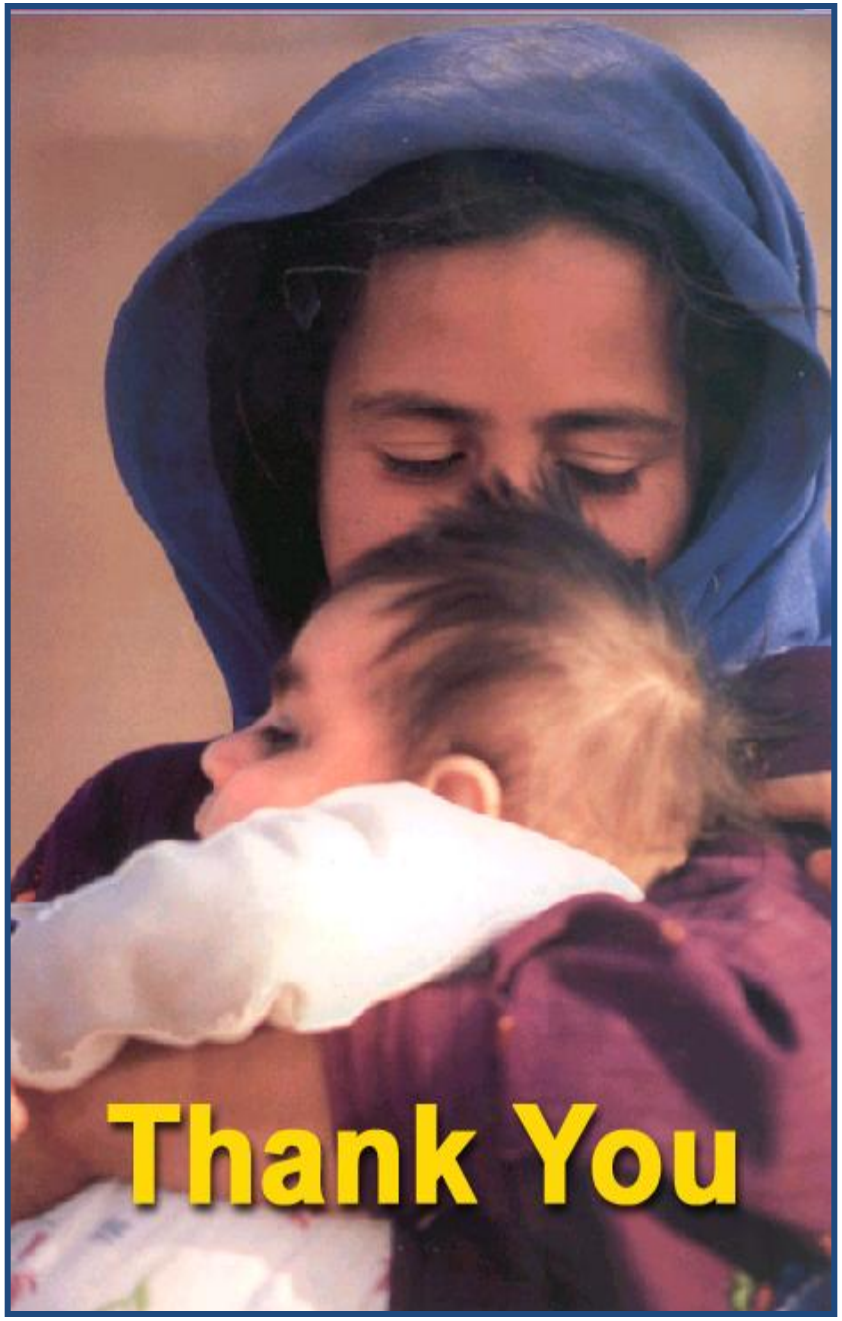
Reduce child mortality

Improve maternal health

Combat HIV/AIDS, malaria and other diseases

Ensure environmental sustainability

Develop a global partnership for development


Thank You