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Food Security and Trade under Climate Change Challenges for Arab States

Projections & Simulated effects of price and trade on food security with climate change

Sergio René Araujo-Enciso

Economist – Medium-term Outlook and Market Analysis

Trade and Markets Division (EST)

FAO

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OECD-FAO Agricultural Outlook

- 10 year horizon
- Global coverage
- Major temperate climate commodities
- Model based projection validated through global expert consensus
- Scenario analyses

Middle (Near) East and North Africa

Information for the following countries were considered in the chapter:

- Algeria
- Egypt
- Libya
- Morocco
- Tunisia

North Africa

- LDC North Africa (*Mauritania, Sudan*)

Least Developed

- Iran (Islamic Republic of)
- Jordan
- Lebanon
- Yemen
- Other Western Asia (*Palestine, Iraq, Syrian Arab Republic*)

Western Asia

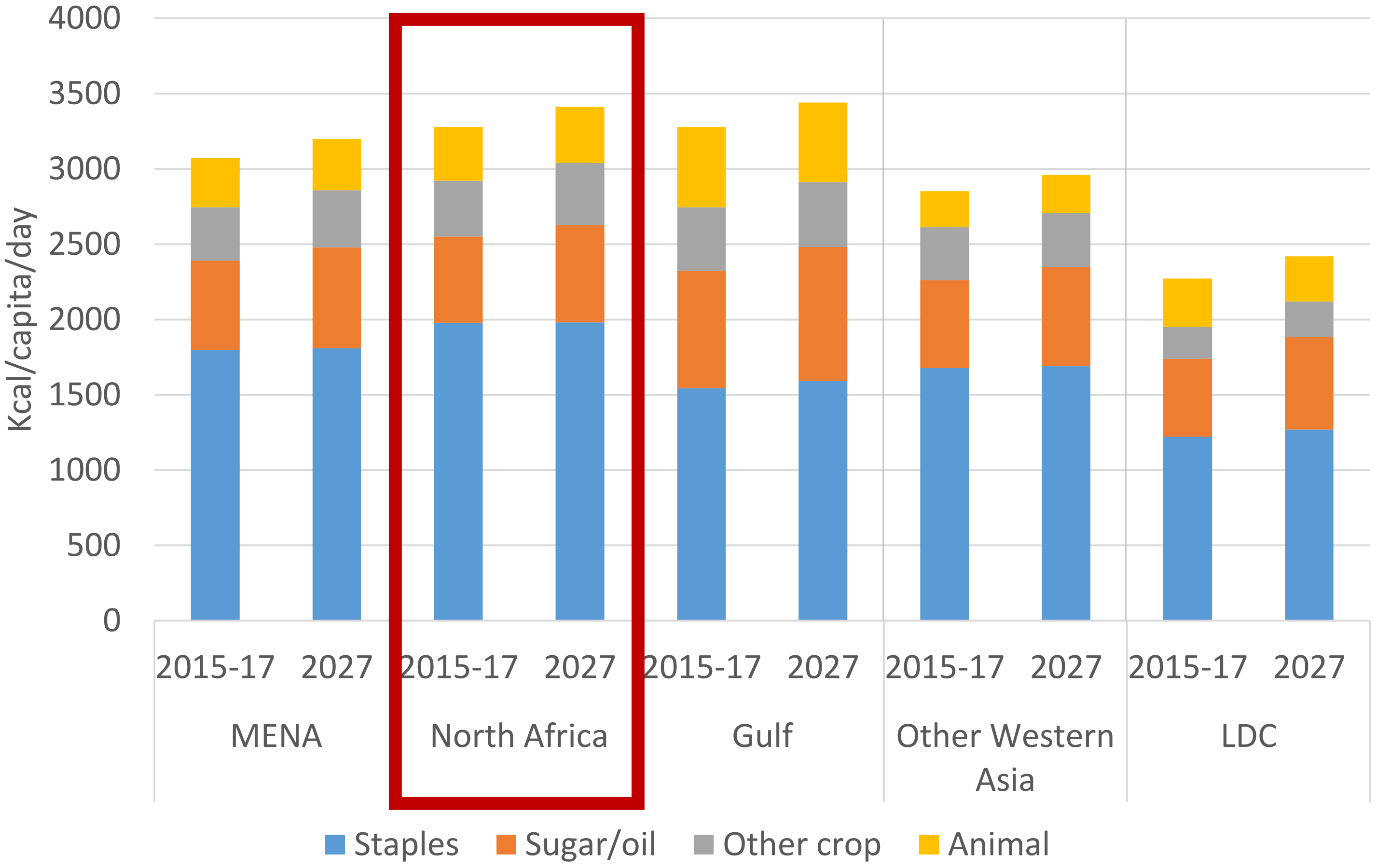
- Other Gulf States (*Kuwait, Qatar, Bahrain, United Arab Emirates, Oman*)
- Saudi Arabia

Gulf States

Projections and challenges

- **Rising and evolving food demand**
- Scarce land and water resources
- Low productivity and limited diversity
- Increasing import dependence for basic food commodities
- Food security threatened by conflict and political instability

Outlook for per-capita food consumption



- Average calorie availability per person in the region grows 0.4 % p.a.
- Vegetal sources continue to provide about 90% of calories.
- Sugar and edible oil consumption increases rapidly.
- Share of animal foods (protein) expands at a low rate.

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Projections and challenges

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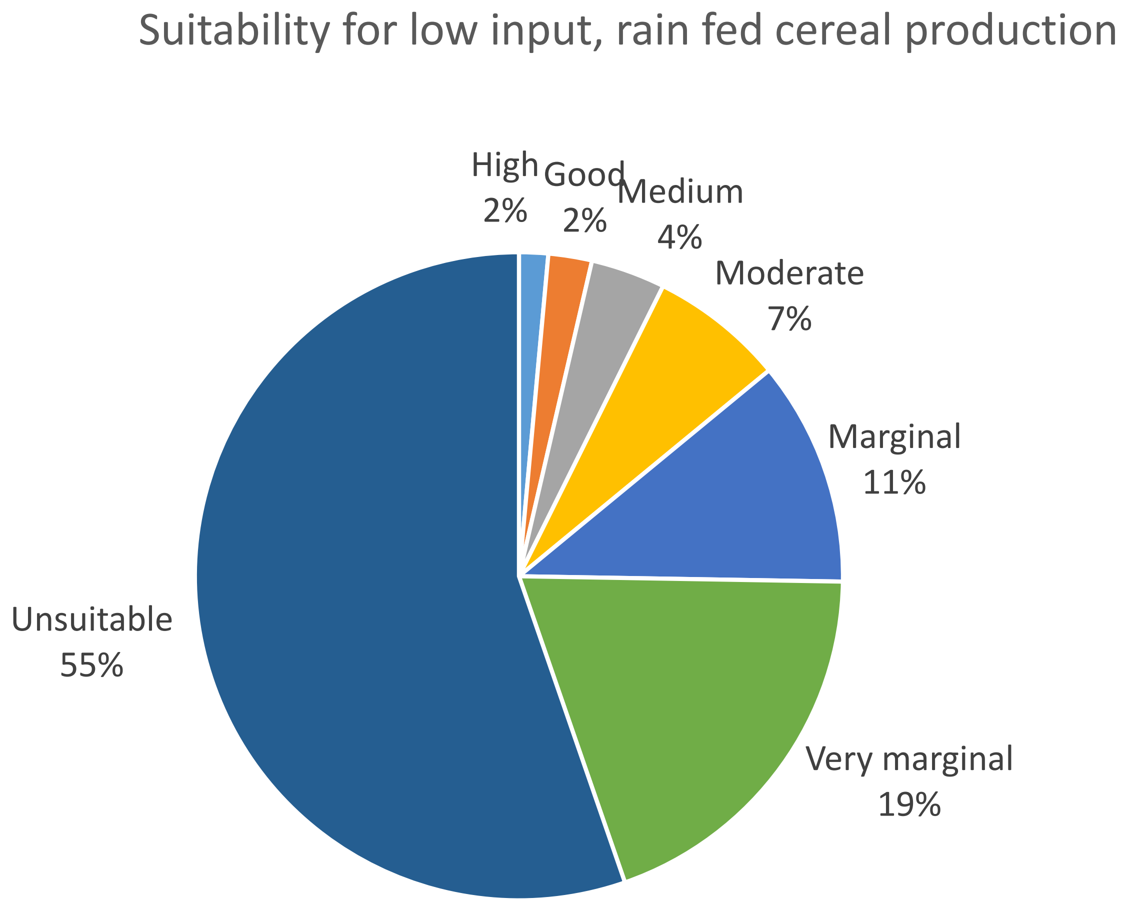
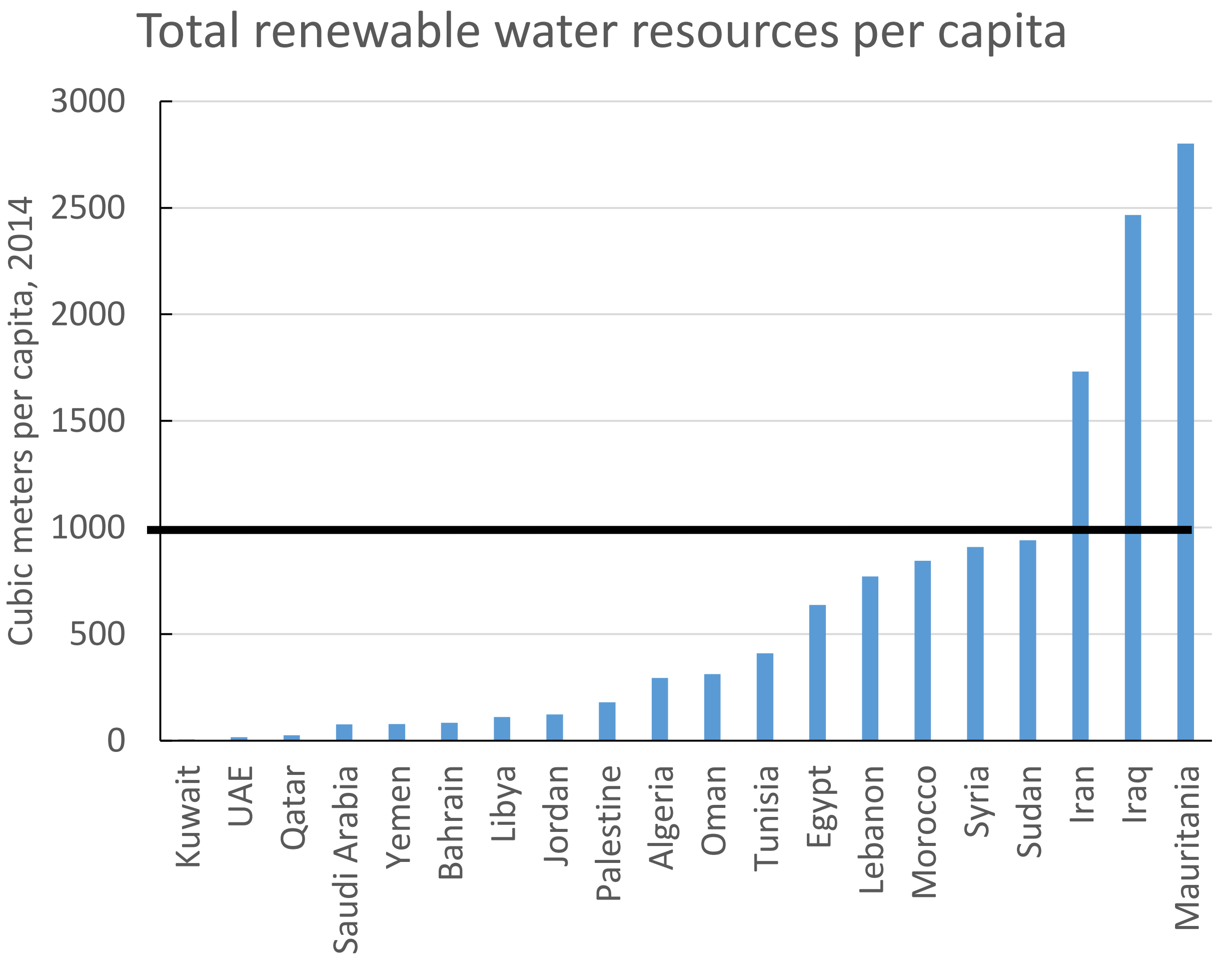
Projections and challenges
Land and water scarcity





Projections and challenges

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Projections and challenges
Diversity and productivity

- Low-yield agriculture in the MENA region is characterized by low diversity.
- Cereals occupy 65% of the crop area.
- They account for only 15% of the farm output value, the rest is contributed by livestock products and horticulture.

Value of gross production per ha of agricultural land
(constant 2004-2006 prices in thousands of international dollars per year)

	1961-70	1971-80	1981-90	1991-00	2001-14
Western Europe	1,284	1,541	1,810	1,878	1,962
North America	261	326	375	449	540
Latin America and Caribbean	138	169	213	258	373
Sub-Saharan Africa	55	67	79	104	146
MENA	85	111	142	162	226

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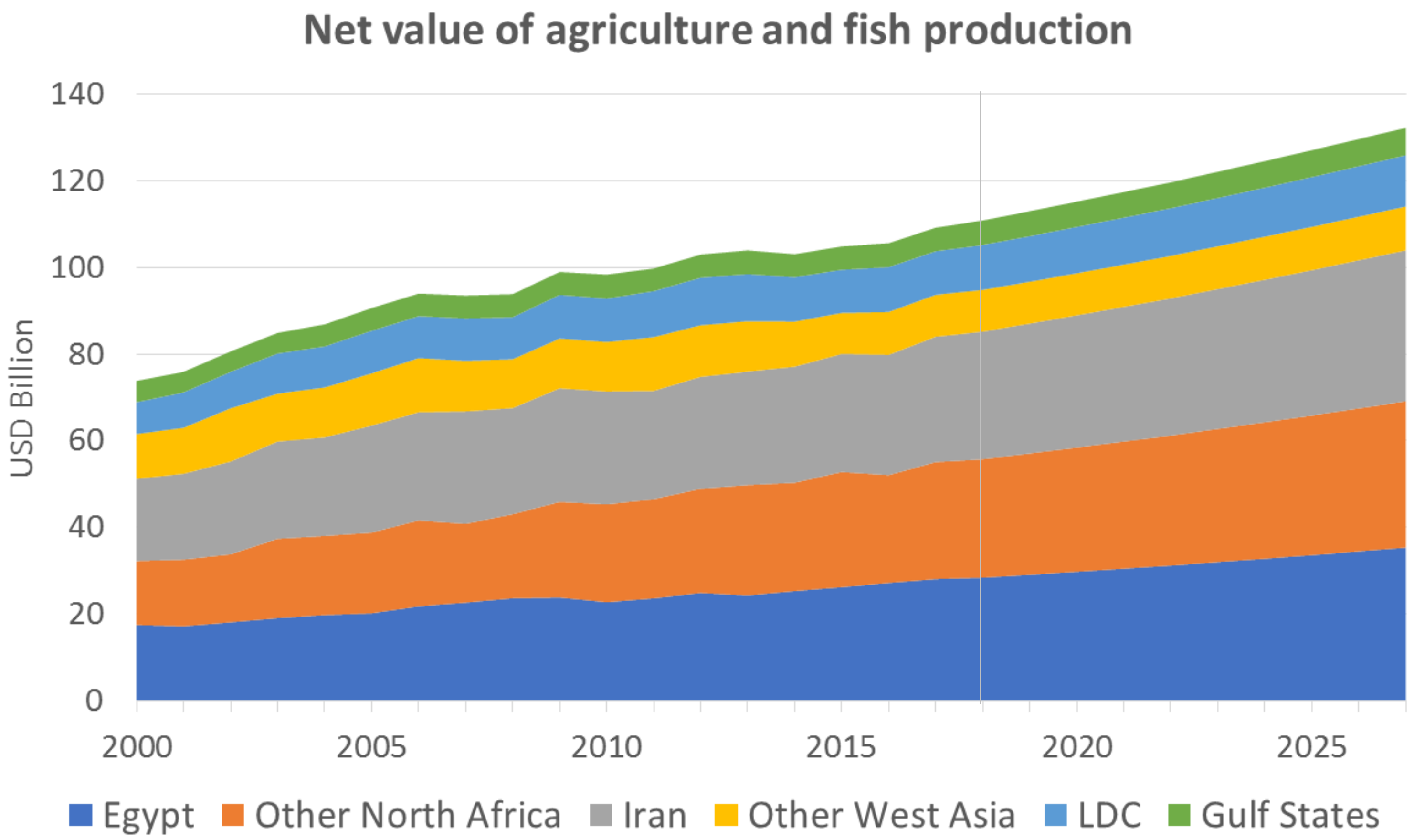
Outlook for agricultural and fish production



- Agriculture remains dominated by crop production, particularly cereals.
- Total production is projected to recover and resume growth
- Cultivated land is projected to remain unchanged
- Meat production is projected to grow, with poultry production increasing faster
- Aquaculture production to increase by another 50%.

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Projections and challenges

- Rising and evolving food demand
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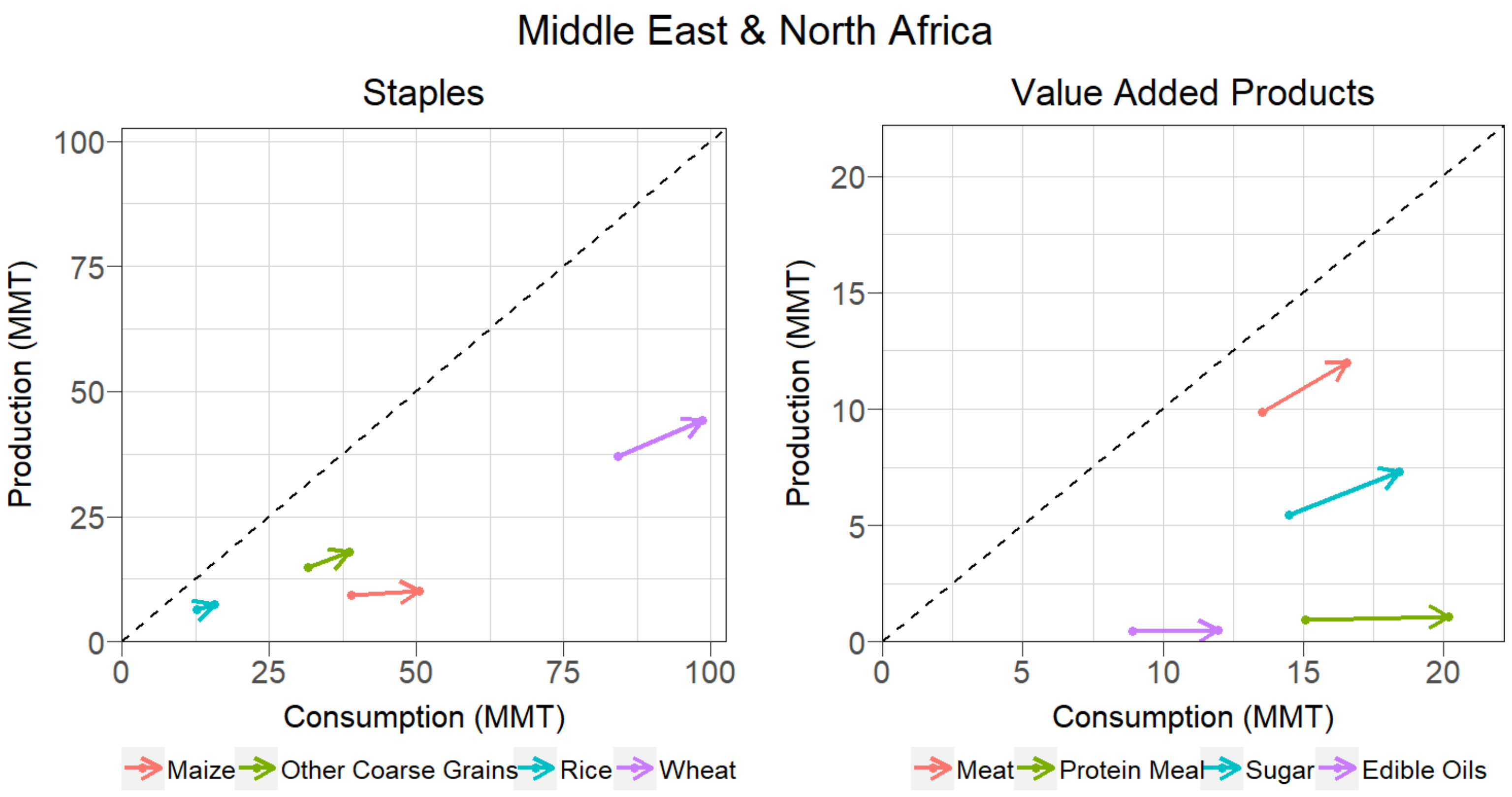
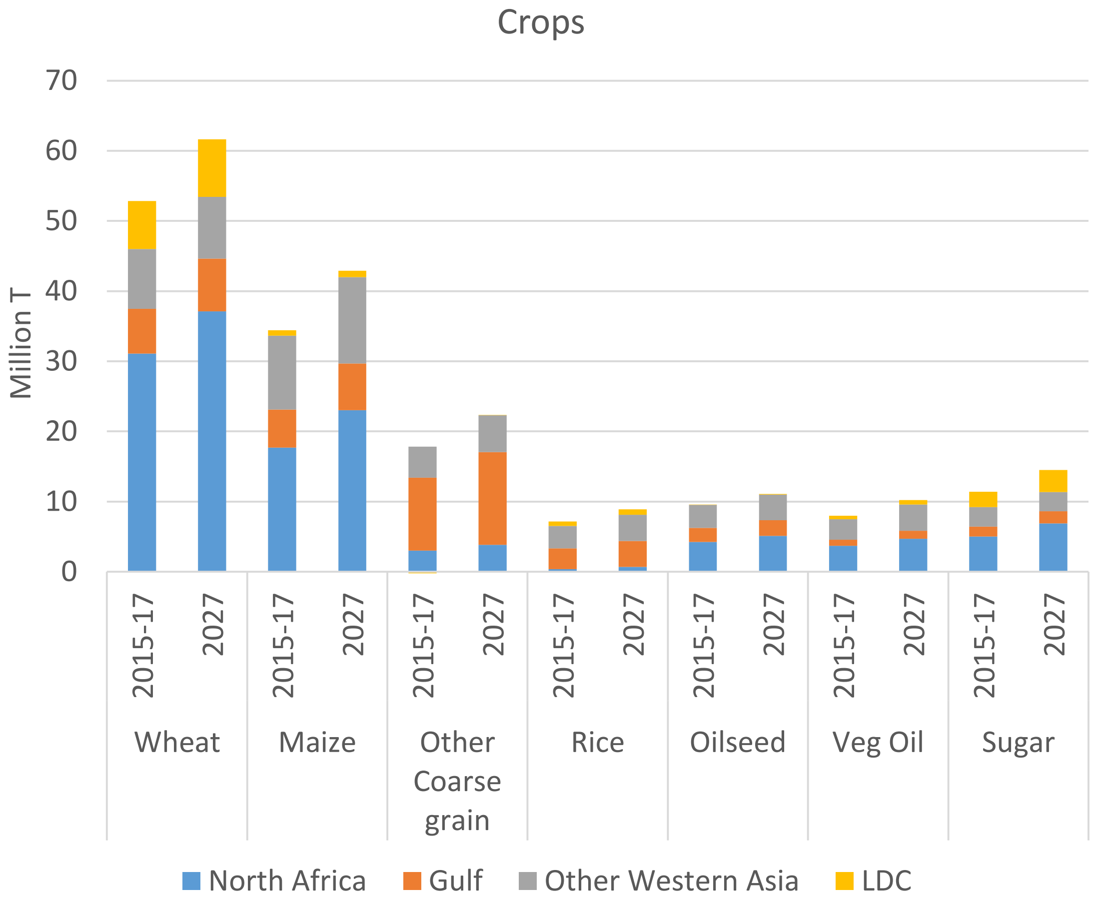
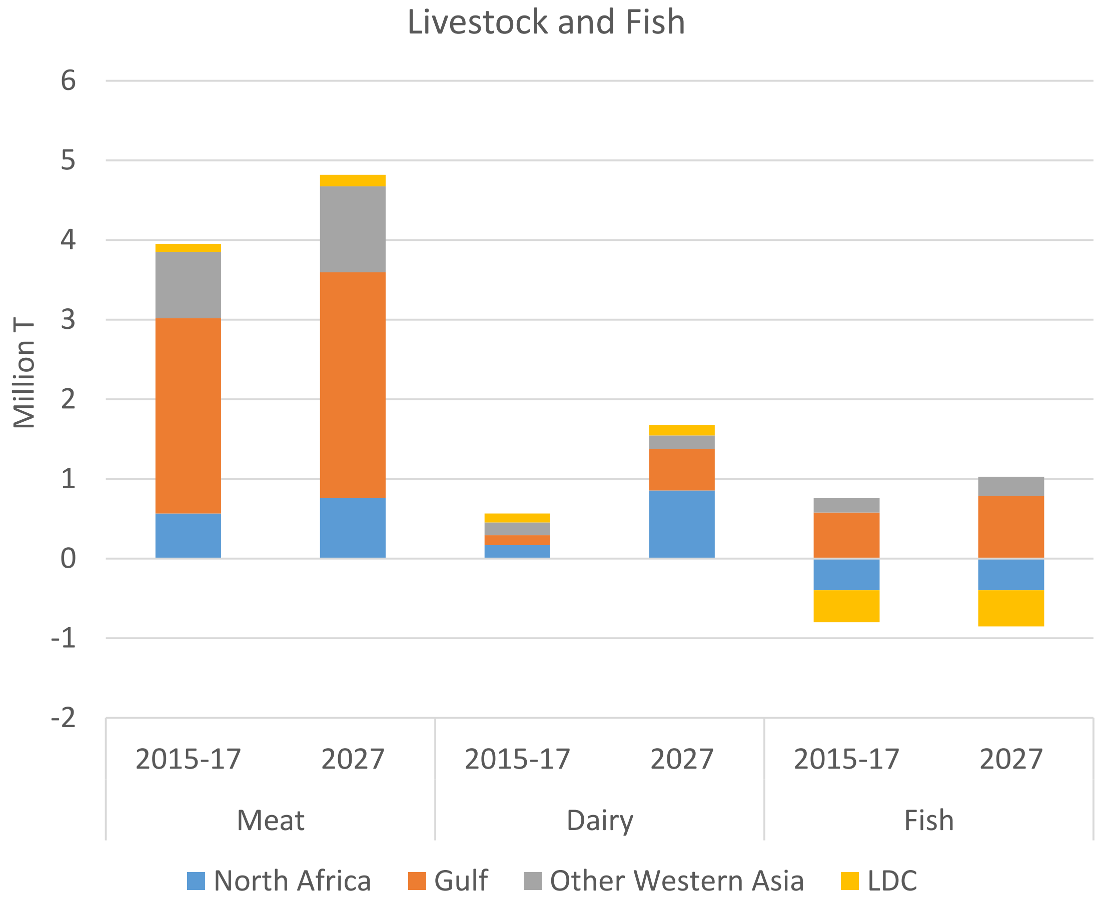
Outlook for agricultural net trade



- Region remains largely dependent on global markets to secure domestic consumption.
- Cereals imports reach about 30% of global trade.
- Meat and fish imports go mostly into the Gulf region.
- North Africa dominates cereals, sugar and vegetable oil imports.

Outlook for agricultural net imports





Projections and challenges

- Rising food demand
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Projections and challenges
Undernourishment and conflict

- Food security driven mainly by conditions that affect families’ ability to access safe food.
- The largest disrupter in the region is conflict, which divides the region into two distinct categories.

Prevalence of undernourishment in the MENA region

	1999-2001	2001-2003	2003-2005	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	2014-2016
Conflict countries	29.0	28.4	28.9	29.1	28.5	26.6	25.3	26.1	28.2
Non-conflict countries	6.3	6.4	6.5	6.3	6.0	5.5	5.0	4.7	4.7

Note: Conflict countries are Sudan, Libya, Yemen, Syria and Iraq.

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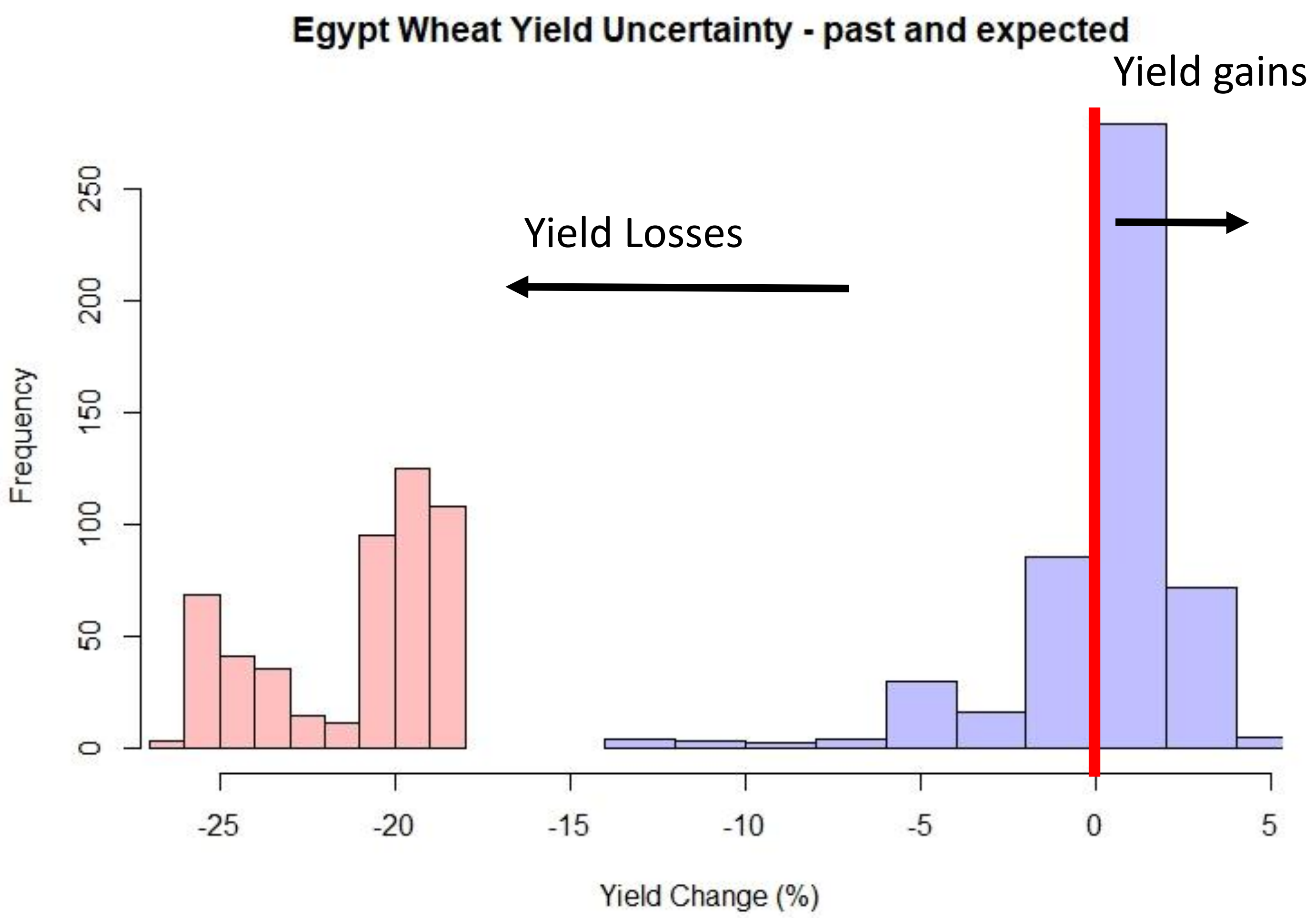
Climate Change
Uncertainty



- Extreme events could become more frequent in the future
- Observed past yield variation could not only increase, but be more extreme because of climate change
- Yield losses could not only more frequent, but more severe

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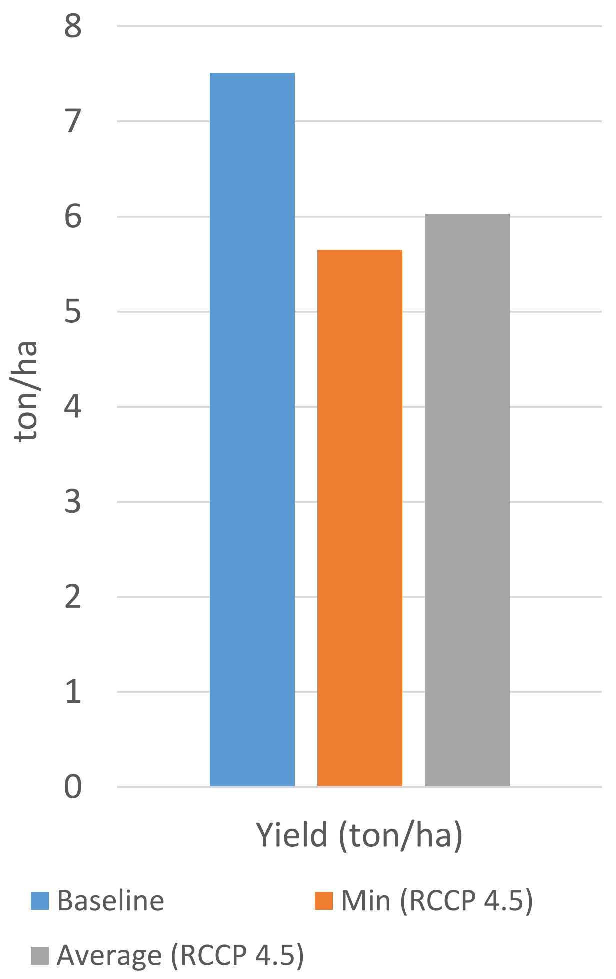
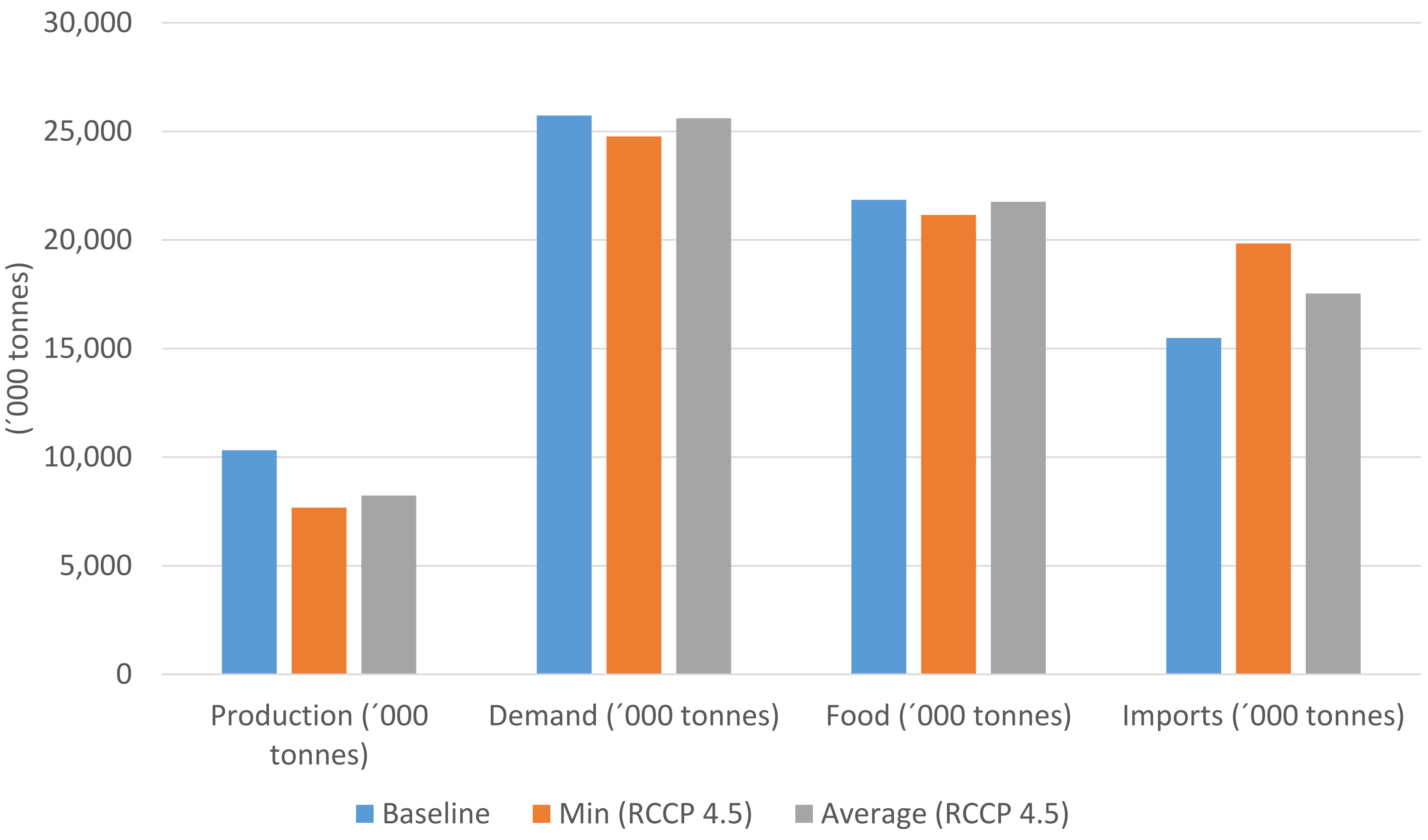
Climate Change
Changes on market balance trough yields





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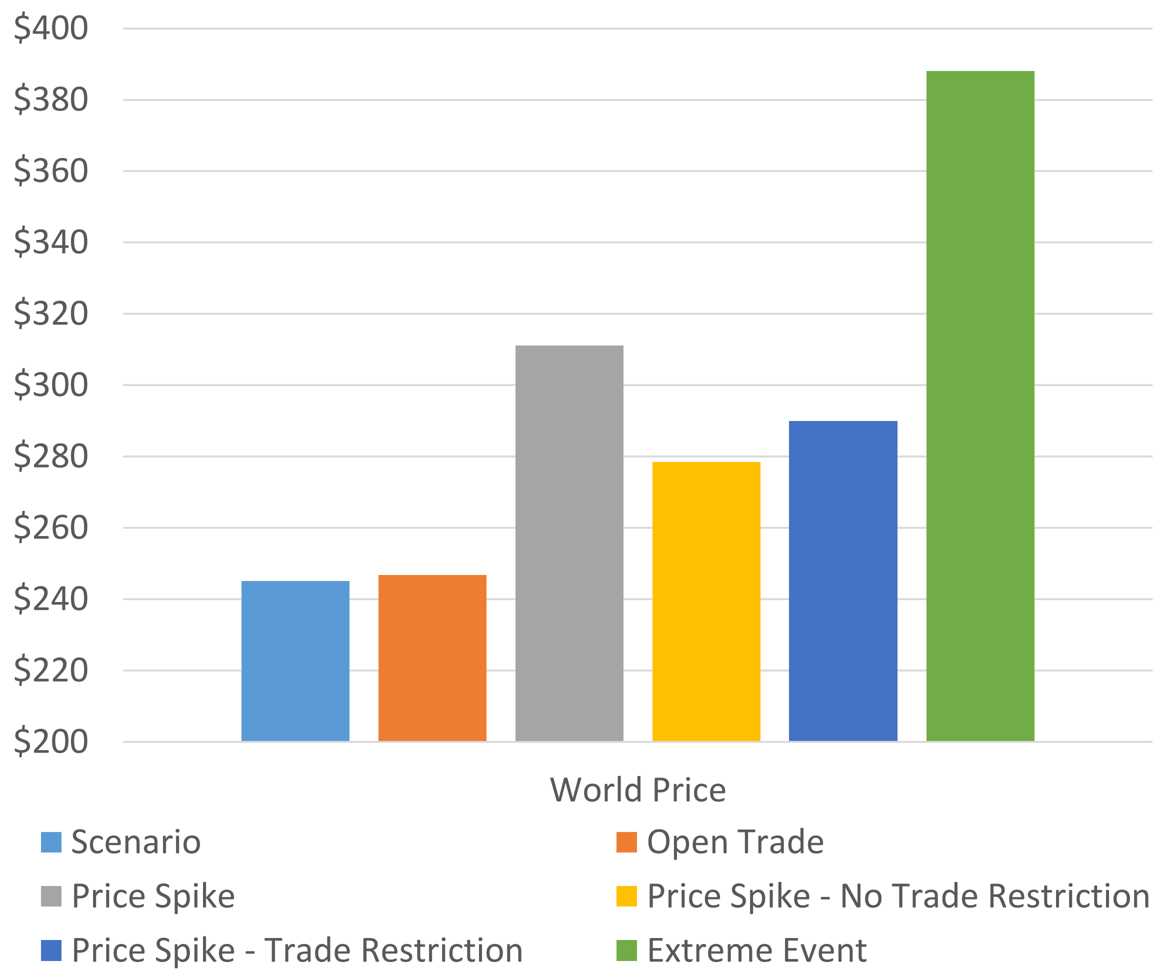
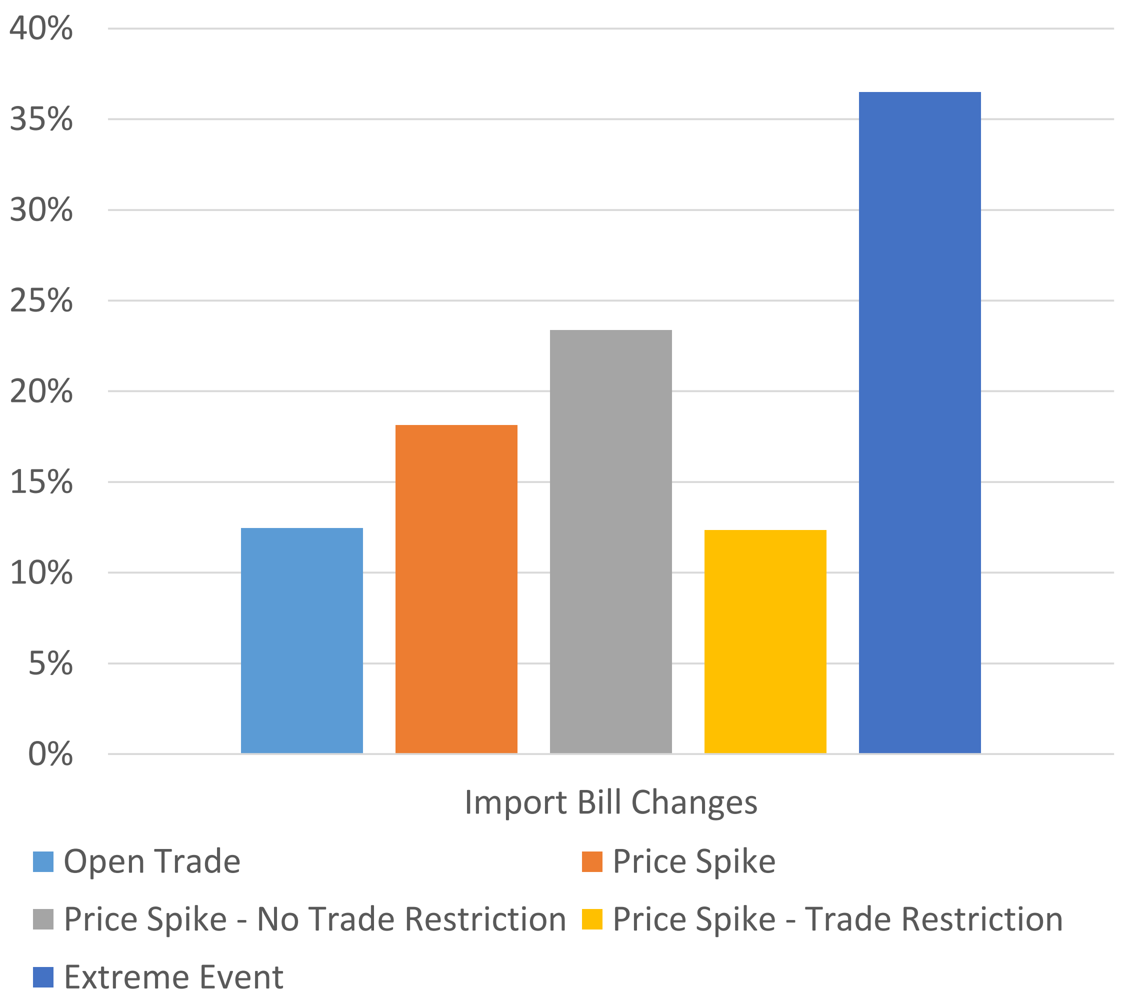
Scenarios
Main effect on Net Trade

- Production and food demand response to the shocks are low in comparison with net trade effects
- Offsetting effects on the different policy options
- Stocks serve as a buffer, these results are conditional to the stocks levels

Scenarios
World price will impact directly import bill





Summary and conclusions

- Medium-term trends for food demand, supply and trade in the region will generally follow past patterns, with dependency of world markets increasing
- Climate change in combination with policies could affect negatively the import bill in the region
- Policies should promote healthier eating habits and at the same time provide incentives to the agricultural sector to make the necessary investments to produce them efficiently.
- It is of great concern that conflict has drastically affected food security and caused hunger to rise in the Near East.

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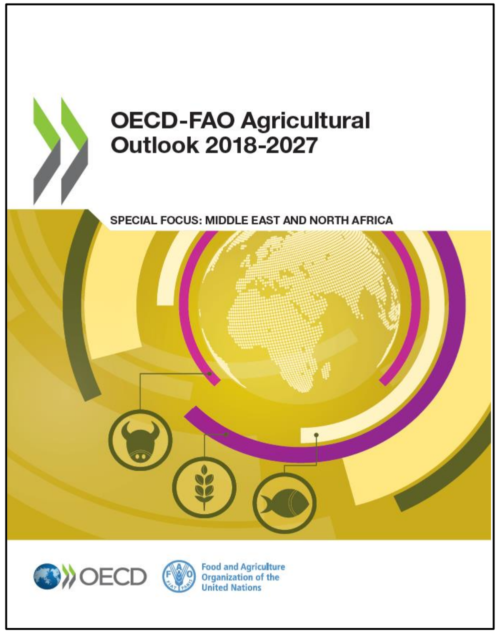
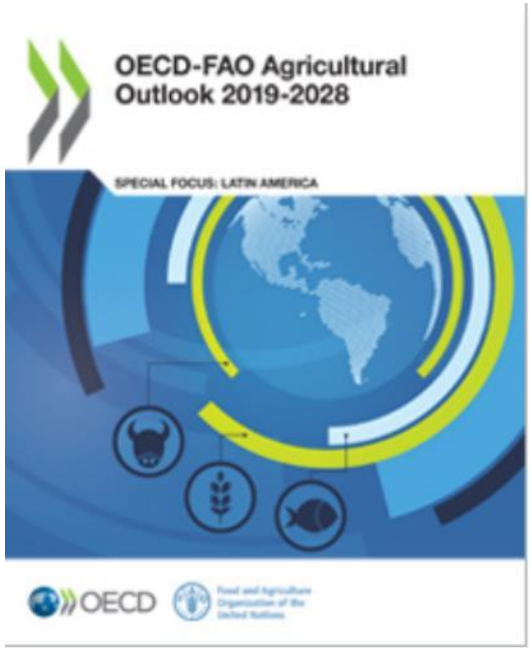
Thank you for your attention

See the full OECD-FAO Outlook at

www.agri-outlook.org





For more details on the MENA region see: **www.unescwa.org**