

Egypt under Climate Change Conditions



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Our situation regarding agriculture sector

Climate Change Impacts

Over the next decades, billions of people, particularly those in developing countries, face shortages of water and food and greater risks to health and life as a result of climate change. (UNFCCC, 2007)

Developing countries are the most vulnerable to climate change impacts because they have fewer resources to adapt: socially, technologically and financially. (UN 2007).

Egypt is one of the most vulnerable countries in the world to Climate Change. Changes in temperature are likely to put stress on agricultural production, reducing food supply, increasing vulnerability and causing loss of employment. Climate change will also have a negative impact on irrigation and drinking water availability as a result of changes in the flow of the river Nile. (<http://unjobs.org/>).



Egypt

Impact of sea level rise on the North Nile Delta

Nile Delta
Potential impact
of sea level rise



Sources: Ugo Simonett, UNEP/GRID Geneva; Prof. G. Sestini, Florence; Remote Sensing Center, Cairo; DIECKE: weltwirtschaftsallias.

This means:

***Egypt may loss more than 15% of its most fertile soil in north of the delta by sinking.**

****The following part of the north strip of the delta will suffer from increase underground water and salts from sea water.**

*****More than 3 million persons will had to move from delta to other places losing their work , home and ownership, this by 2050.**

This number will jump to 6 million by 2100.

Potential Impacts on Fish & Livestock Production



Impacts on Fish

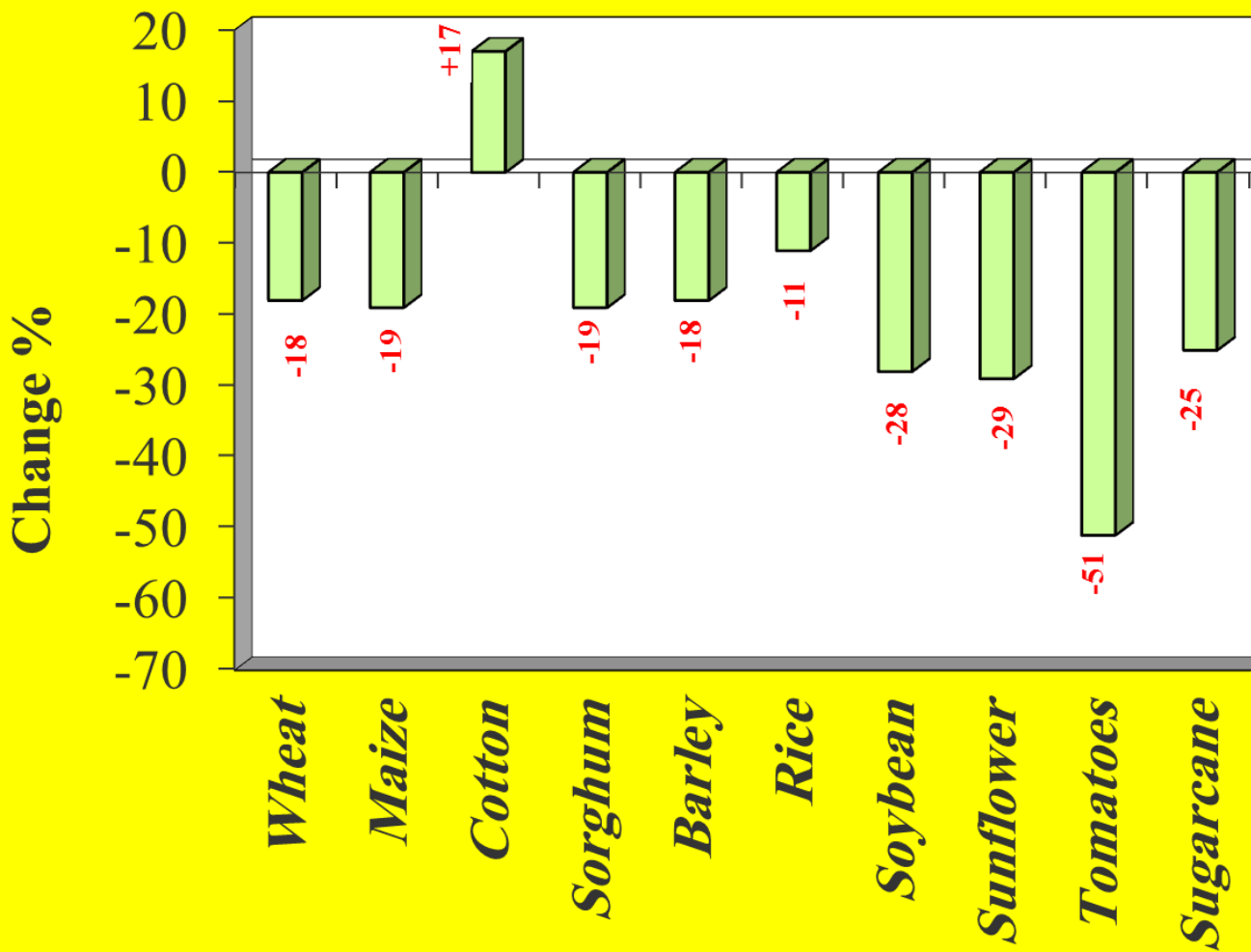
1. Change in annual round fish
2. Changes in fish distribution
3. The new environmental conditions could allow increasing the type of fish at the expense of the other



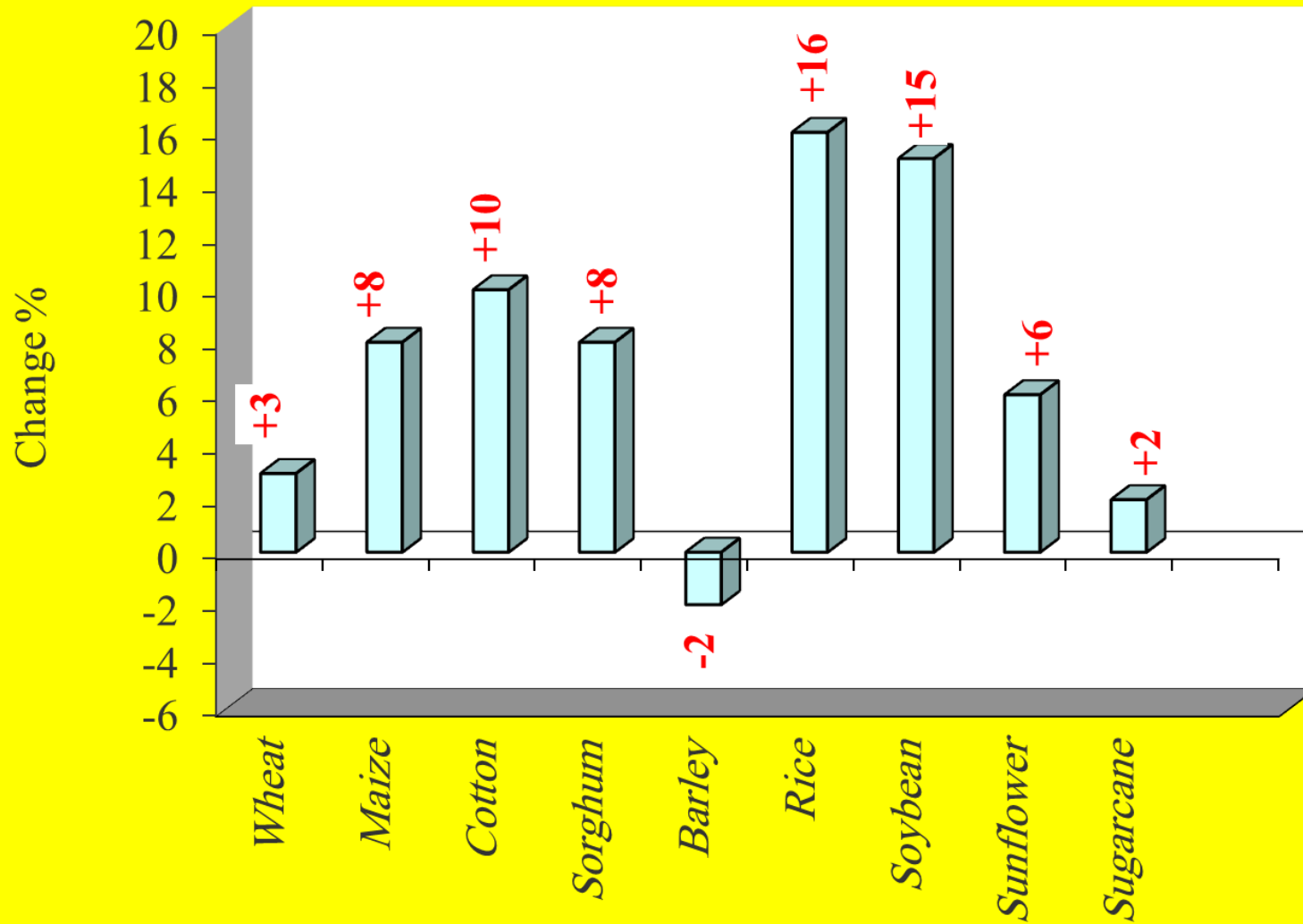
Impacts on Livestock

1. High temperature reduces the yield of milk
2. As well as, low efficiency of livestock production and the high costs of production with low feed available

Change percent in major crops production (excess or deficit) in Egypt by the year 2050 due to climate change.



Change percent in crop evapotranspiration (ET_{crop}) for major crops in Egypt by the year 2050 due to climate change.



Impact of climate change on food security

self-sufficiency in the main food commodities in Egypt
under current conditions

Main food commodities	Prod. (1,000 tons)	Requirements (1,000 tons)	Self-suf. (%)
Wheat	7388	13591	54.4
Rice	4553	3273	139.1
Maize	6300	11900	53.2
Sugar	1487	1933	76.9

- Source: Sustainable Agricultural Development Strategy Towards 2030. (2009)

Impact of climate change on food security

Self-sufficiency of some major commodities under future climate conditions, (with fixed population)

Main food commodities	Prod. (1,000 tons)	Requirements (1,000 tons)	Self-suf. (%)
Wheat	6058	13591	44.6
Rice	4052	3273	123.8
Maize	5103	11900	42.9
Sugar	1115	1933	57.7

Impact of climate change on food security

Self-sufficiency of some major commodities under future climate conditions, (with increasing population growth)

Main food commodities	Prod. (1,000 tons)	Requirements (1,000 tons)	Self-suf. (%)
Wheat	6058	25208	24.1
Rice	4052	6071	66.8
Maize	5103	22071	23.2
Sugar	1115	3585	31.1

So, by the mid of this century, Egypt may imports **about 75%** of its food from abroad

General policy options for adaptation to climate change in the Egyptian agriculture sector:

- 1. Changing practices applications (optimum sowing date, cultivar, water and nitrogen amounts).**
- 2. Reducing the area under cultivation with high water need crops (i.e. rice and sugarcane).**
- 3. Scheduling of irrigation for different crops using the evaporation pan method (accumulative evaporation) or through the computer software programs which will improve both the technical water application efficiency and the agronomic water use efficiency.**
- 4. Promote awareness of the potential risks of climate change for all levels.**
- 5. Breeding of heat-tolerant, salinity tolerant, drought-resistant and water conserving crops,**

what we need

Thank You