



وزارة الدولة لشؤون البيئة



جمهورية مصر العربية

# Vulnerability & Adaptation to Climate Change in Egypt

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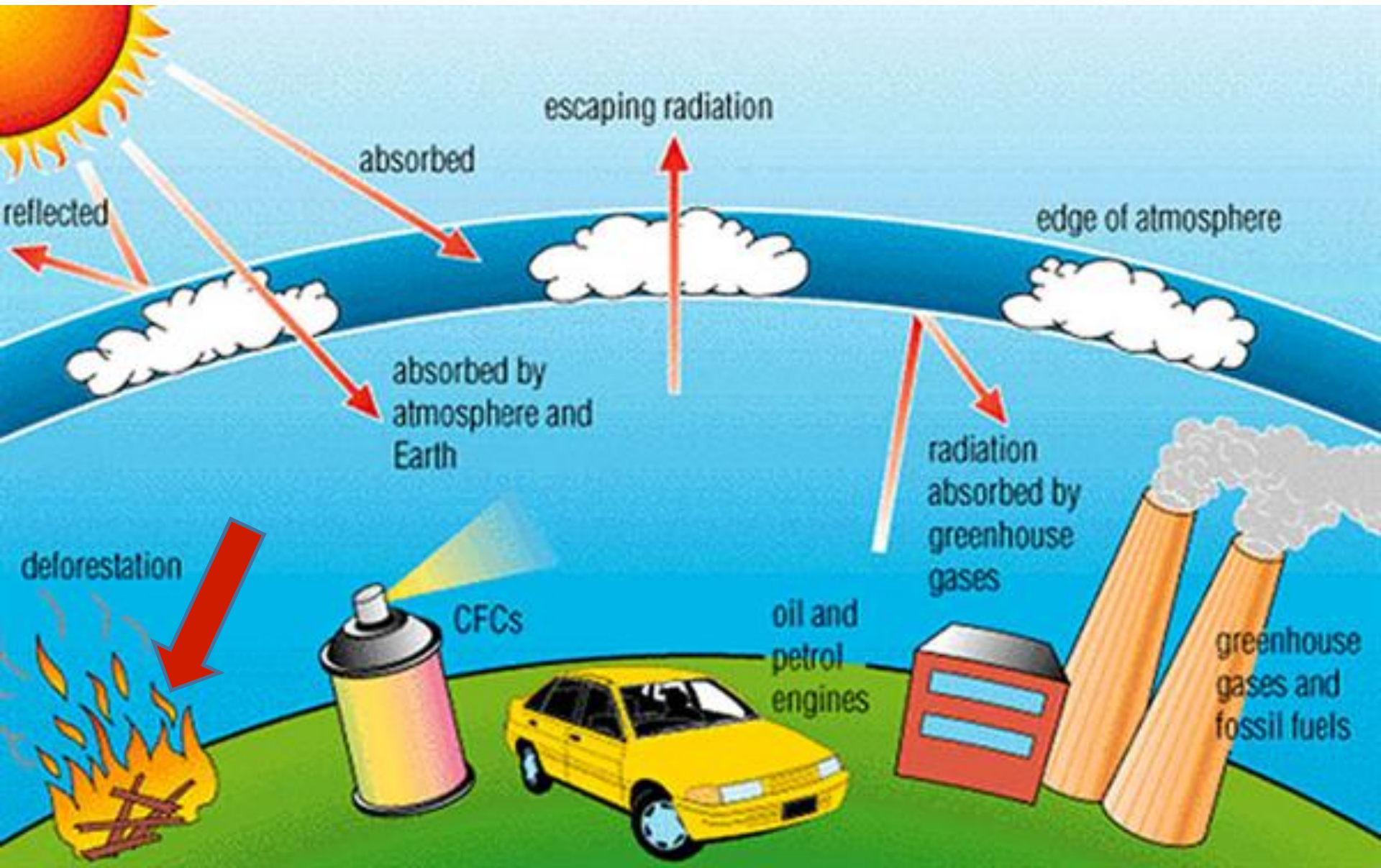
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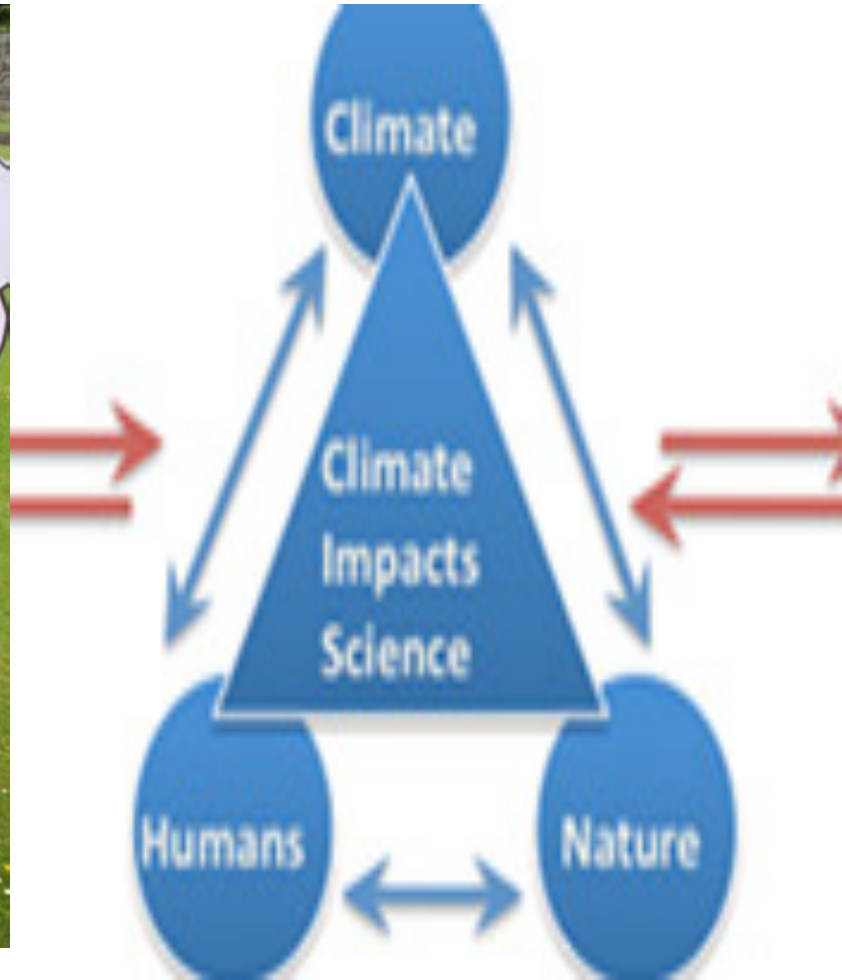
# Introduction

**Egypt's large and dense packed population makes the country extremely vulnerable to climate change. Egypt does not produce enough food to feed its current population. Its water resources also are rather limited. Moreover, The studies have indicated that the following areas are the most vulnerable in order of severity and certainty of results: agriculture, coastal zones, aqua-culture and fisheries, water resources, human habitat and settlements, and human health.**

# Climate change phenomenon

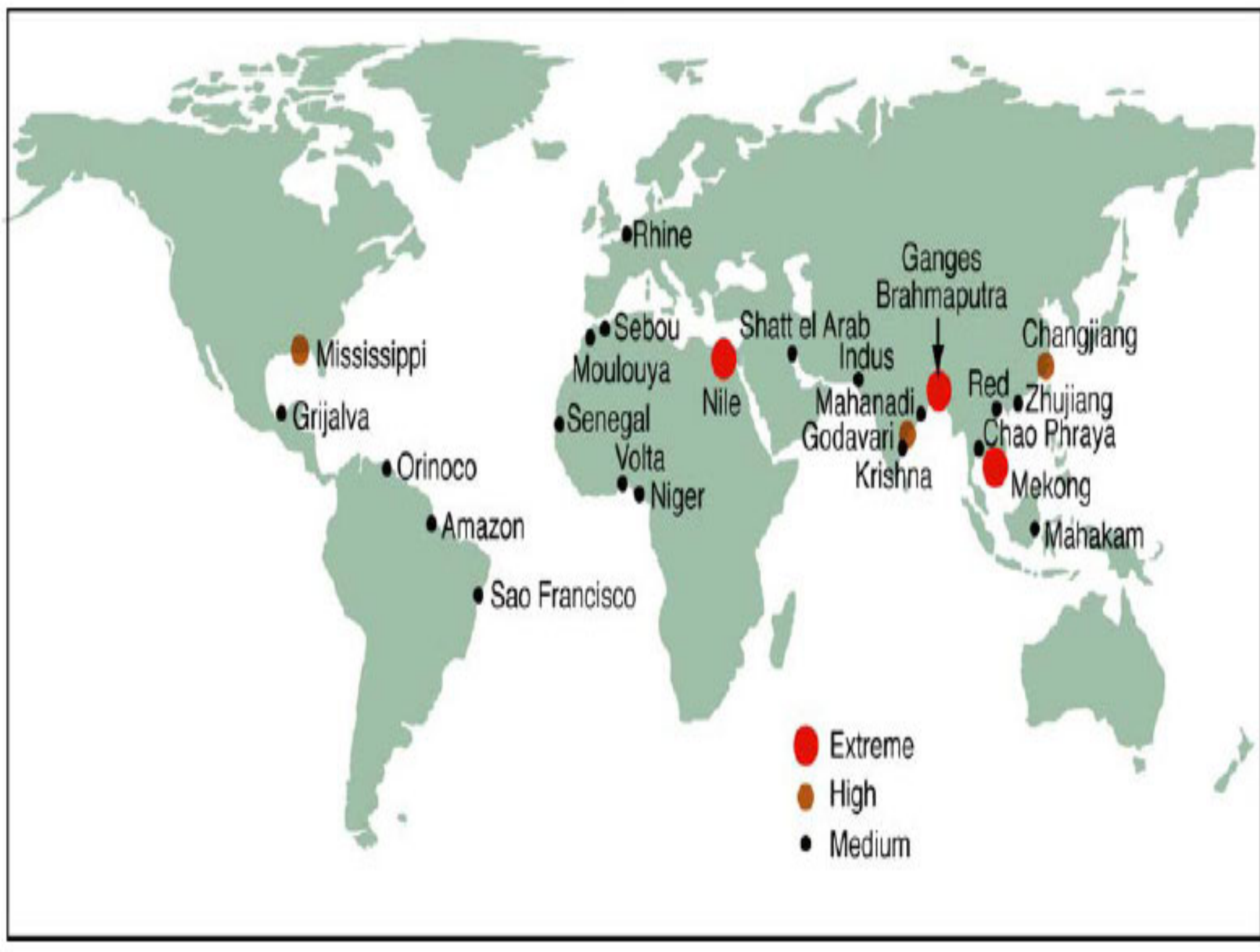








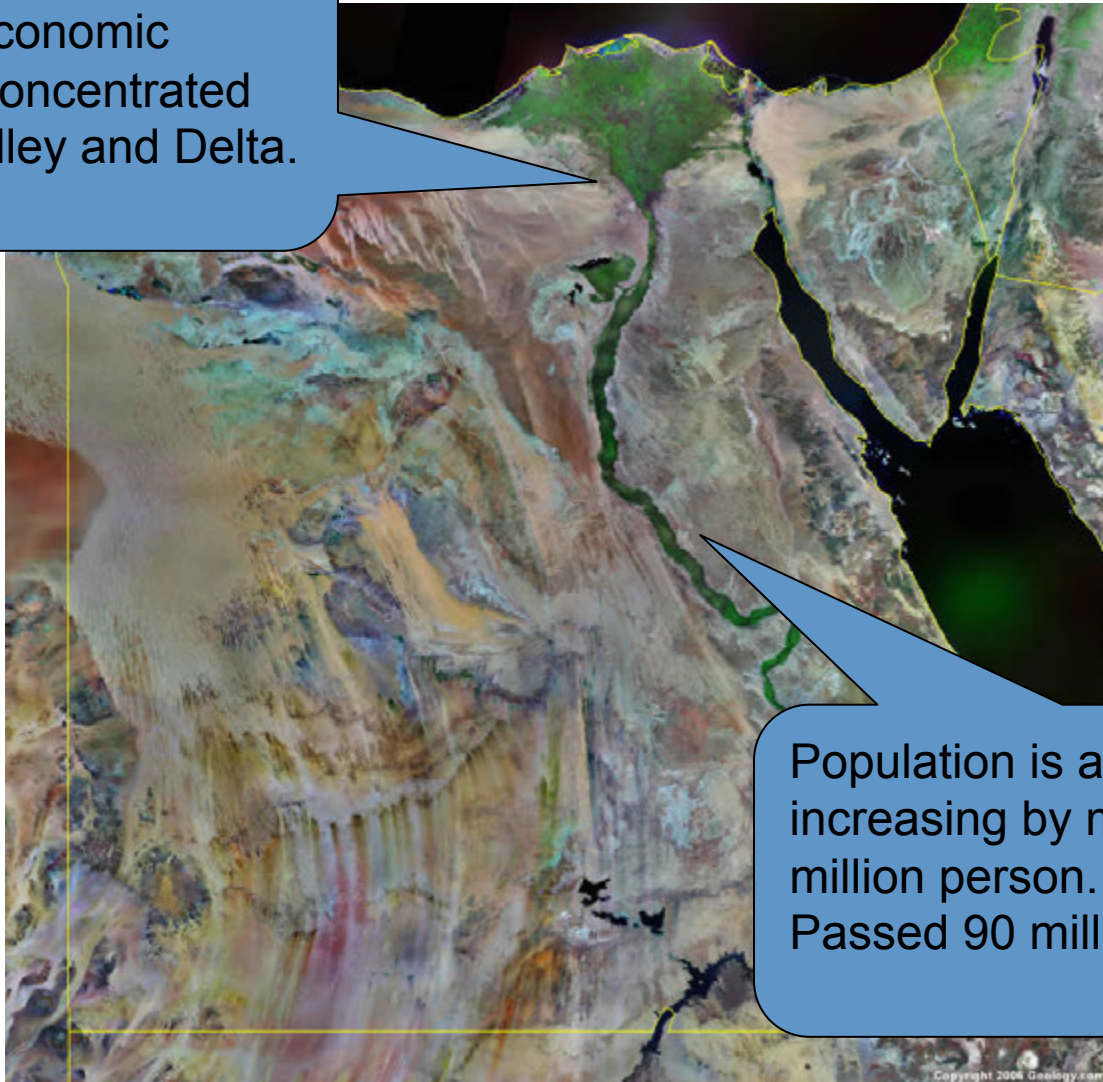
# **Vulnerabilities**





# ***Egypt***

Population, land use and agriculture and economic activities are all concentrated along the Nile Valley and Delta.

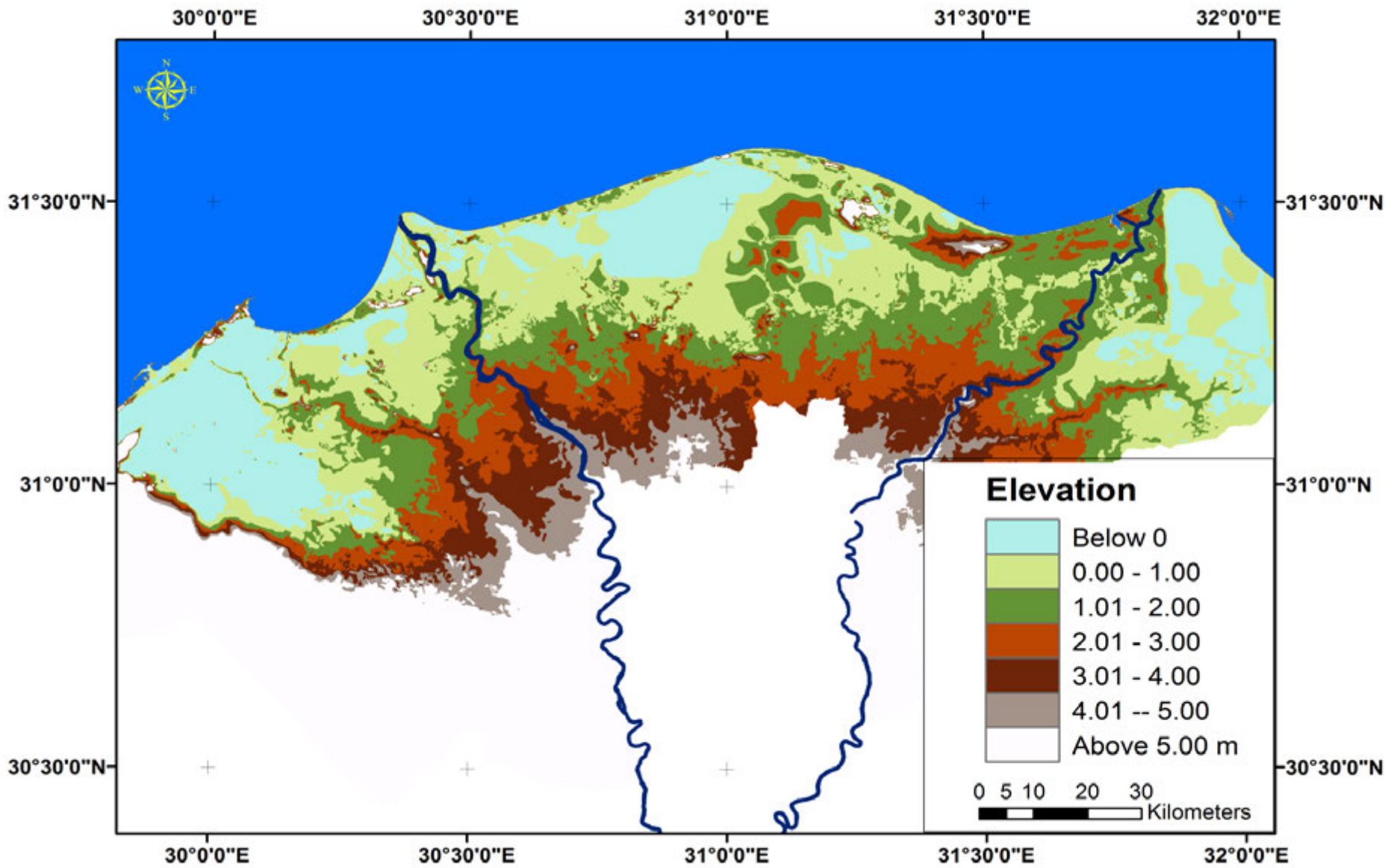


Population is annually increasing by more than 1 million person.  
Passed 90 million this year.

# Some coastal low lying land could be inundated in the Nile Delta.

Population: 6 100 000  
Cropland (Km<sup>2</sup>): 4 500







# Inundated area

Governorate	Inundated area %		
	A1FI (59 cm)	Rahmstorf (50 – 140 cm)	Pfeffer (80 – 200 cm)
Al Dakahliya	15.74	36.95	47.01
Al Behairah	18.72	29.34	33.32
Alexandria	23.75	25.91	26.69
Damietta	32.65	71.76	94.79
Kafr Al Sheikh	27.08	57.27	67.81
Port Said	38.86	61.95	74.75



# Inundated land use/ land cover

Land use	Area (%)		
	A1FI	Rahmstorf	Pfeffer
Built-up Area	4.39	3.75	3.73
Cultivated Land	41.96	60.66	63.95
Undeveloped Land	12.62	10.71	10.88
Wetlands	41.03	24.88	21.44
Total	100.00	100.00	100.00

# Inundation by land subsidence

<b>Governorate</b>	<b>% of Governorate area</b>
<b>Al Dakahliya</b>	<b>12.44</b>
<b>Al Behairah</b>	<b>12.90</b>
<b>Alexandria</b>	<b>21.41</b>
<b>Damietta</b>	<b>29.74</b>
<b>Kafr Al Sheikh</b>	<b>17.19</b>
<b>Port Said</b>	<b>17.08</b>

# **What to expect ... As a result of climate change??!!**

- **Although it is difficult to predict the effects of high temperature and sea level rise in the specific area, but there are many expectations:  
Flooding large areas of the coastal plains, which is considered one of the best agricultural land in the world.**
- **Floods for some cities as some islands may disappear, and in some cases, small island developing States and forever.**
- **Vulnerable the coastal installations (Coastal Constructions) such as bridges, water barriers and Utilities also will increase the erosion of beaches.**
- **Saltwater intrusion (Saline Water Intrusion) to aquifers (Aquifers) and scarcity of water resources. Will increase the number of people who suffer from a shortage of drinking water within 50 years from 5 billion to 8 billion people.**

# What we expect also?

- Reduction in agricultural crop and thus shrinking food stocks.
- Eliminate a lot of Forests .
- You'll also find some species they are in an environment where the environment not having enough time to adjust.
- Declining soil fertility and worsening as the erosion change citizen of plants and increased drought and changing rainfall patterns will lead to the exacerbation of desertification.
- A lot of disorder ecosystems (Ecosystems) and Biodiversity.  
Spread of pests (Pests) and disease-carrying insects (Mosquitoes) that transmit malaria



# Drought.

**1995 was the  
warmest year since the  
start of global records  
in 1856**



# Where the Climate Change More Affect ?

- The developing countries more vulnerable to climate change than the rich countries (Developed Countries), where the poor people in poor countries are the ones who will be exposed to greater risks due to increased volatility and sudden climatic patterns (such as floods, droughts, and do not have the ability to



# Adaptation

# Proposals for combating climate change

- Logical solution optimized to address climate change is to stop emissions significantly (solution includes matters related to the global economy).
- **Forestry and changing agricultural practices.**
- Reduce dependence on fossil fuels as the primary source of energy and seek forward to providing clean energy sources (renewable energy production from wind, water and sun).
- Recycling & walking and the use of mass transportation and reduce consumption (Turning Down) and lights-out time of departure (Switching Off) and change



# Preventive measures

- **First: To reduce the risk of flooding and reduce the pace of this matter requires speed to take the necessary measures to control high groundwater levels are as follows:**
  - immediately stop of domestic exchange in groundwater in all the villages of the provinces of the Delta and the work covered drainage systems to reduce groundwater levels and all coastal cities.**
  - Reduce leaching rates of irrigation water to groundwater through the use of modern irrigation methods alternative to flood irrigation methods or a few crops farming water consumption with improve networks of agricultural drainage.**
  - Expansion in groundwater use the alternative to surface water in irrigation operations.**
  - The use of groundwater to irrigate landscaping Channel and Delta cities.**
  - Water re-use and recycling to reduce waste and reduce its negative effects.**

# Preventive measures

- **The expansion in the construction of waves walls along our coasts especially in North low of them and in front of the watercourses and the Nile Delta will not be with the effectiveness meaningful protection from flooding coastal areas unless it is to control the continuing rise in groundwater levels to those areas which may increase the problem complex to include flooding the coastline groundwater**

# Forestation in Egypt

- **The need for a national policy official forest in Egypt , and appropriate legislation governing the cultivation and harvesting where Egypt lacks any regulations or rules in this regard .**
- **That the development of a national policy official and a clear strategy for forests in Egypt command would contribute to the social, economic and environmental conditions in Egypt, where it contributes both directly and indirectly in the total domestic production in Egypt.**
- **In addition to the value of the environmental , where more than a windbreak of crop productivity , especially in the reclaimed land , as well as it's to provide local timber materials needed for agricultural and boat building and the production of wood particle board and coal in addition to**

# Forestation in Egypt **Cont.**

- **Now we try to maximize the benefit from the treated wastewater in agriculture and forest green belts and improve the conditions of the environment in terms of climate and increasing biodiversity within these forests, as well as the reclamation and add new areas of the territory of the desert areas and the establishment of new communities near these forests, while providing a portion of the timber product locally instead of full import from abroad, as well as the creation of industries, wood and add new sources of**

# Forestation in Egypt

Cont.

- **Due to the lack of rain, the natural forests do not exist.**
- **Currently grown on the treated water is estimated by 15 thousand feddans**



# Why are forests important

Forests deliver multiple environmental and social benefits:

- CLIMATE CHANGE : Slowing tropical deforestation is bound to play a much larger role in Adaptation & mitigating climate change.
- BIODIVERSITY: Forests harbor over 60% of all terrestrial plant and animal species.
- LAND DEGRADATION: Forests provide livelihoods and vital



ACT against CLIMATE CHANGE

تحرك ضد تغير المناخ

indyACT

# First Of All

Realize that THERE IS CLIMATE CHANGE.

Wag kayong in denial. :D





# SECOND

## Personal Efforts

- At home
- At school
- At work



Turn off lights  
and other  
appliances

Lesser air con

Walk instead of  
drive

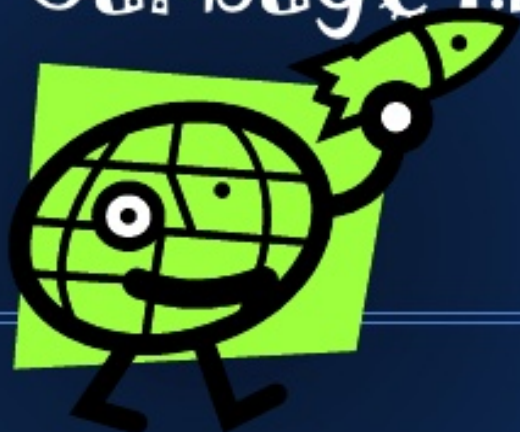


# THIRD

Nation wide effort

Urban Planning

Garbage management





# FOURTH

Global Effort

Alternative Fuels

Co2 reduction

World Peace :>



# This Our Life



Our Nature  
Is Our  
Source of  
Life

Euikyun Carlo Jung  
(Missionary Society of St. Columban)



**Thank You**