

Expert Workshop on Developing the Capacities of the Health Sector for Climate Change
Adaptation to Protect Health from the Climate Change Effects on Freshwater Resources
Amman, Jordan; 19–21 April 2016

*Climate change and health in Egypt
Case study and recent trends for
adaptation*

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▶ *Adverse effects of Climate change in Egypt*

1 – Increase temperature and humidity

2 – Sea level rise

3 – Changes in the rainfall

Heat related disorders

A– Heat stress

B– Heat syncope

C– Heat stroke

D– Heat exhaustion

E- Heat rash (prickly heat)

F– Heat cramps

G- Heat edema


- ▶ Mortality and morbidity due to heat stress are expected to rise, especially among particularly vulnerable infant and elders (*Tolba and Saab, 2009*), and pregnant women.
- ▶ In Egypt, there is no researches or documentations on the incidence of mortalities due to high temperature and climate change.
- ▶ Because of lack of a clear case definition and the multiple factors that contribute to heat-related mortality, heat-related deaths may be underreported

▶ Communicable Diseases

▶ *Schistosomiasis*

- ▶ In Egypt, due to climate harming, the snails *Bulinus* and *Biomphalaria* moved from their habitats in Upper Egypt to avoid extreme temperatures resulting in an increase in *S.mansoni* and concomitant decrease in *S.haematobium* prevalence from the Nile delta into Upper Egypt (Ahmed et al., 2014).
- ▶ *S. mansoni* has almost totally replaced *S.haematobium* in Lower Egypt (Ahmed et al., 2014).
- ▶ Moreover, schistosomiasis is found to be emerged in new areas in Egypt; Sinai and Red Sea governorates. These two Governorates are away from the Nile water, and before 1990's no case was detected in these areas (Ahmed et al., 2014).

▶ *Malaria*

- ▶ Bassiouny (2001) and Hassan et al. (2003) reported that optimum temperature, relative humidity and the spread of specific anopheles vectors led to the prolongation of the malaria transmission season to 8 months a year in Fayoum Governorate in Egypt.
 - ▶ Since 2009 there was no reported indigenous malaria in Egypt, and the mortality rate due to malaria in children under 5 years was zero (World Malaria Report, 2012).
 - ▶ In the year 2014, there was re-emerging of new malaria cases, and MOH reacted quickly and proper control was done.
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▶ *Dengue Fever*

- ▶ The presence of vector and endemicity of dengue fever in the neighboring regional countries must be in mind of the Authorities in the Ministry of Health in Egypt

Re-emerging and emerging diseases

- ▶ Climate change and migration patterns may result in reemerging of old diseases, such as *tuberculosis (TB)*, due to changes in the epidemiology of regions and populations
- ▶ Currently, H5N1 virus does not appear to be transmitted easily among people and therefore the risk of community level spread of this virus remains low. Hence, the public health risk associated with this virus remains unchanged (WHO, 2013)

Re-distribution

- ▶ Saad-Hussein et al. (2011) detected a significant rise in the relative frequency of the eyes fungal infections during the period 1997 to 2007 in Greater Cairo
- ▶ This rise was correlated significantly with rises in minimum temperature and the maximum atmospheric humidity over the same period.
- ▶ Through climate change models, Saad-Hussein et al. (2011) predicted increase in keratomycosis with the predicted increase in CO₂ emissions and surface temperature in Egypt up to the year 2030

Occupational Vulnerability

- ▶ Outdoor occupations have been linked with disease and injury caused by heat waves.
- ▶ Indoor significant increase of fungal spores in the environment of different workplaces dealing with organic dust in Egypt: e.g.
 - ▶ In textile industry, high airborne counts of *Penicillium* and *Aspergillus* species were detected in the pre-spinning, spinning and weaving departments (Saad-Hussein et al., 2012).
 - ▶ Saad et al. (2006) found that *Penicillium* was the most dominant in the ceramic indoor environment followed by *Aspergillus fumigatus* and *Aspergillus niger*.
 - ▶ The concentration of *Aspergillus flavus* and *Aspergillus niger* were higher in bakeries than in the flour mill sections (Saad-Hussein et al., 2015).
 - ▶ The concentration of *Aspergillus* was also higher in furniture industry than in the flour mill and bakeries (Saad-Hussein project 2010-2013).

Sea Level Rise


Alexandrina beach



Recent trends for adaptation

Through

Increasing awareness of the public

- 1– Ministry of Health services
(Primary Health Care Centers)
 - 2– Bigger Hospitals
 - 3– Mass media
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Thank you