

# Climate Change

## 14- SOCIO-ECONOMIC IMPACT

### 14.1 THE PROBLEM

Given economic regional disparities, the climate change impact will vary widely among regions. Under served remote areas and suburbs, will suffer more. Consequences on economy and human health will be assessed.

### 14.2 EXPOSURE UNIT

The whole Lebanese population, stressing at times on the most vulnerable groups in the under served areas (remote agricultural regions and poor suburbs).

### 14.3 UNCERTAINTIES AND METHODS

Major causes of uncertainties are lack of data, transitional state of economy with rapid dynamic changes, regional peace process hesitations and international trade accords. In addition, it is difficult to use analogues and modeling; thus the field survey and expert judgment will compensate partially these uncertainties.

### 14.4 VULNERABILITY TO CLIMATE CHANGE

**Baseline and projection without climate change:** Income Disparities induce a strong rural-urban migration and a high rate of urbanization (87% in 1994 and 93% in 2015). Annual population growth rate is decreasing steadily.

The Lebanese economy is a liberal economy dominated by the service sector. The share of industry in the GDP is 19%, and whose of agriculture 7%. The imbalance is corrected by invisible earning (tourism, overseas Lebanese remittances...). Post war reconstruction implies high expenditures leading to a budget deficit. Nevertheless GDP continue to increase reaching 4800\$ per capita in 1998. Unemployment rate is only 14% despite more than 1 million foreign workers. Economy will continue to rely on services and invisible earnings. This general view masks the severity of the problem in the agricultural remote areas where the low income and unemployment will lead to migration.

Tourism assured 20% of GDP before 1975. This sector is able to regain importance and consequently to contribute to the development of some regions, some other economical sectors and employment.

Coastal activities show very limited fisheries and an over urbanization. Average annual losses du to natural events are 35 millions dollars in 1983, particularly in the low-laying coastline settlements.

Water problems affect agriculture and health by mean of quantity or quality. The deficit will remain in 2021 even if adequate measures are taken. Quality of water is also a matter of concern (contamination of aquifers and networks by sewage, salt intrusion secondary to over pumping, fertilizers, and lack of treatment and filtering, old

network...)

Agriculture represents now 10% of GDP, 7.8% of labor force, 12% of population and 19% of exportation but Lebanon still import 80 % of foods. Already in bad shape, agriculture will continue to decline and is going to be less and less competitive, even on the local market. Despite its slight share in economy, it will hit severely the rural areas, mainly due to the fact that they are not able to shift towards other activities because of unskilled labor. This will lead to more poverty, more exodus to the poor suburbs of the big cities.

In the same way health services are unequally distributed with consequent disparities in the unsatisfied basic needs index and unemployment, which are the highest in the peripheral areas and the suburbs of Beirut. Vicious circle of poverty is closed with high household size (6,5 to 7), low income and unskilled young people. The cost of health care is one of the highest in the world. It is insured mainly by the private sector and reached 11.8% of the GDP in 1995. The preventive component is very weak. Disparities are evident. Most vulnerable groups to diseases are infants, children, elderly, malnourished and non-immunized. Three categories of diseases are relevant: Water borne diseases (diarrhea, typhoid and hepatitis-A are a real problem), Vector borne diseases (conditions of outbreak of Malaria are still present), Acute respiratory illness which is one of the most causes of infant mortality.

In addition to vaccination annual campaign, MOH launched recently a program to prevent and treat diarrhea and respiratory illness.

Water shortage, pollution and poverty will lead to an increase in these diseases.

#### **14.5.CLIMATE CHANGE IMPACT**

Some sectors are more vulnerable such as agriculture and human health. Fishery is already very limited, and coastal activities will witness doubling of the losses in 2020 unless deliberate adaptation is applied.

Impact on tourism is variable: ski season will be shorter, sandy beaches will be eroded and inundated without great economical effect. Estival activities in the mountains will increase. Thus, Developing tourism may balance losses in other sectors.

Agriculture will know high cost production leading to lack of competitiveness. Despite a limited impact on economy as a whole, rural population will highly suffer.

Human health will be affected in the same under served areas by climate change. All above-mentioned diseases will find a favorable physical and sociological medium. Increase in temperature and humidity will allow anopheles to breed and Malaria parasite to mature. Diminishing of precipitation will increase air pollution and consequent respiratory effects mainly in the suburbs of Beirut. Adaptative and preventive measures are very important.

The whole economy is weakly vulnerable, because it doesn't rely in agriculture and coastal activities, there is no big natural catastrophe, presence of many geoclimatic regions and alternative sectors. The profile of Lebanese economy is thus closer to U.S.A. one (1% of loss) than to India (4.6 %). Meanwhile, it is mandatory to consider disparities among regions.

#### **14.6.ADAPTATION**

Prevention measures	Alternative measures
<b>BEHAVIORAL</b>	
Reduction of household size  Acceptance of vaccination and other preventive measures.	Rural exodus Improvement of tourism products Lebanese Diaspora tendency to return sporadically or permanently to Lebanon
<b>DECISIONAL</b>	
Focused health services for less advantaged and vulnerable groups Easier accessibility to primary health care  Extend medical insurance all over the country  Enhance vaccination and other preventive programs  Health education  Epidemiological surveillance	World class tourism promotion  Preparing tourism workforce  Strategic economical choice  Stimulate productive economic activities  Sustained development policy for rural regions with alternative productive sectors.  Integrated rural development