

A Strategy for adaptation to Climate Change in Israel

The contribution of GLOWA JR

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המשרד להגנת הסביבה
وزارة حماية البيئة
Ministry of Environmental Protection



שלום עם הסביבה

Relevance

A recent survey has found that while less than half of all Americans are concerned about global warming, around 80% of citizens in Africa and the Middle East worry about climate change .

Presentation Outline

- **Climate Change Implications**
- **Methodology for Preparedness**
- **Action Plan**
- **The Major Topics**
- **Contribution of GLOWA JR**
- **What Next**

Consequences of climate change on Israel

- Reduction in precipitation and recharge of water resources
- Increased incidence of extreme events (heat, floods)
- Increased demand for energy (cooling, desalination)
- Increased risk of forest fires
- Increased incidence of tropical diseases and of tropical and subtropical pests
- Increased agricultural pests, plant diseases and weeds
- Change in bio-diversity, (jellyfish, commercial fish stocks decline in the Mediterranean)
- Decrease in agricultural crops

The Target:

Integrate adaptation to climate change in the strategic planning systems of the various economic, social and environmental sectors

The Method:

Assess

- Implications of climate change
- level of exposure
- possible ways of adaptation

Integrate the Israeli R & D in assessing Implications of climate change

Encourage the participation of various stakeholders from the public

Mainstreaming

Action plan:

- Adoption of climatic scenario(s) for Israel
- Assessing vulnerability levels for Climate Changes
- Evaluation of economic damage
- Mapping the possible ways to reduce damage
- Estimation of adaptation costs
- Identifying major players and their contributions
- Analyzing required organizational changes

Major Topics:

- Climate and Models
- Water
- Agriculture
- Energy
- Drainage and erosion
- Biodiversity
- Public Health
- Economics
- Geo-political aspects

Horizontal issues:

- Implications according to global emission scenarios
- Identifying research capabilities, coordination between researchers
- Funding for research
- Preparation of central / local authorities
- Information and knowledge exchange
- Coordination between different sectors
- Decision making in a state of uncertainty
- Coping with misleading information

Horizontal issues (continued):

- Implications of climate change alongside other pressures (e.g. the water crisis, GHG emission reduction)
- Relationships with other policy issues (e.g. energy)
- Available implementation tools
- Raising public awareness; stakeholders
- Prioritizing
- Assimilation in infrastructure projects, especially resistance to extreme events

Actions for preparation

Water:

- Overall water resources management that considers implications of climate change and the use of models to forecast changes in water resources along with other stressors.

Example:

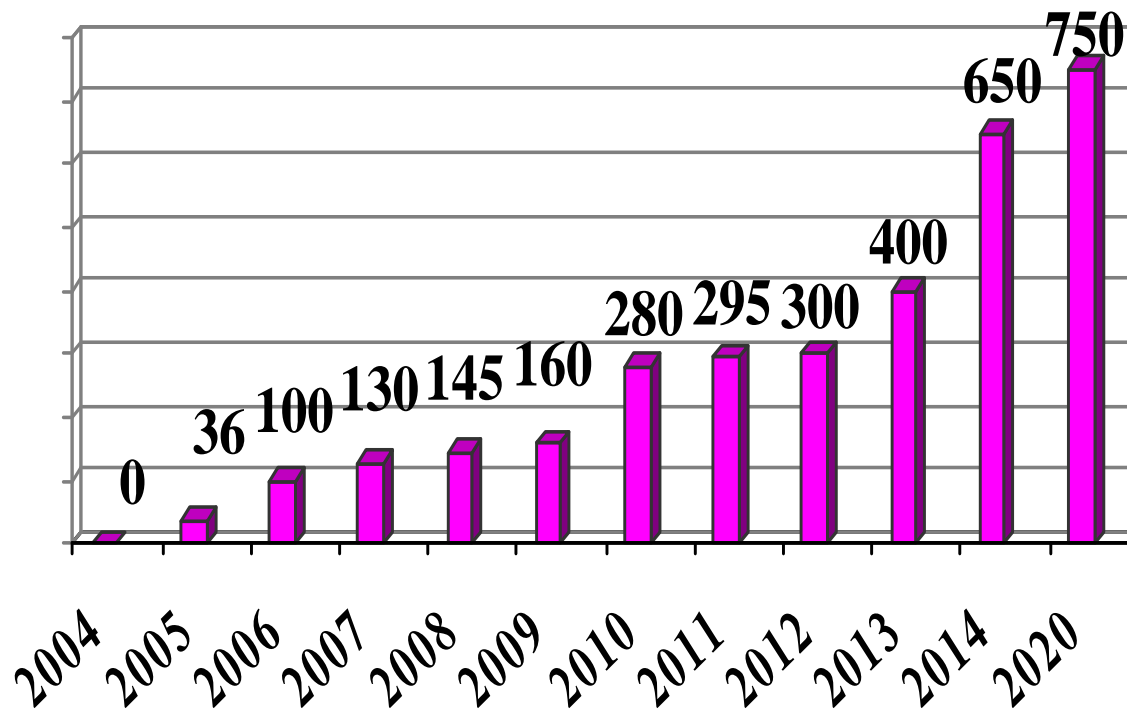
Large Scale Seawater Desalination
Increased by 15% for preparedness to
CC

(In toto ~50% of natural precipitation
by 2014)



Development of desalination capacity

| Location | Capacity MCM/Year |
|--------------|-------------------|
| Ashkelon | 100 |
| Palmachim | 30 |
| Sorek | 150 |
| Ashdod | 100 |
| Hadera | 100 |
| expansions | 160 |
| Total | 650 |



Agriculture:

- Extended Research effort :
 - Selecting crops adapted to climate and to new emerging pests
 - Changing times of planting and harvesting and a wider range of seasonal variety
 - Precision Agriculture (remote sensing)



Health:

- Border and import controls to prevent entry of new pathogens
- Increased environmental monitoring, detection and identification of various diseases and vectors of disease
- Warning of heat stress to sensitive populations

Forestry:

- Manage forests in accordance with anticipated threats (chance of droughts, floods and soil erosion)
- Preparedness for Increased risk of Forest Fire
(Mt. Carmel as a Case Study:
 - Less flammable species;
 - Thinning and pruning;
 - Fire breaks;
 - Fire-fighting infrastructure)



Where are we?

- Government resolution to prepare a national plan for climate change (***Science-based Policy***)
- Operating work groups (models and data, water, agriculture, health, economy, biodiversity, geo-strategic issues). **Initial results by late 2011**
- Adapted water supply (desalination) (further steps needed)
- Work initiated to reduce risk of forest fires
- Extensive R&D effort in Agriculture



Contribution of GLOWA:

- Since 2006, GLOWA results provide important input for the working groups
- Contribution to the thinking process preceding the Government Resolution on preparing for climate change
- Formation of a group of researchers dedicated to preparation for CC, creation of public awareness



Collaboration:

Most threats are not specific for Israel

Therefore,

multinational R&D collaboration and

coordination with other countries

is essential for reaching optimal objectives

A Regional Information and Knowledge Center

Function:

- ✓ Collection of information on CC in Israel and the Mediterranean region
- ✓ Development of strategies of adaptation to CC in Israel and the region
- ✓ Sharing of Know-how and Technologies

Israel and a regional knowledge center

- **Knowledge in research institutions, Government and Technical companies:**
 - saving and recycling water, implications of wastewater irrigation
 - crops resistant to drought and salinity
- **Technical knowledge:**
 - irrigation systems
 - urban water metering
 - resistant crops
 - forestation under arid conditions
 - advanced solar energy systems

Thank You

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