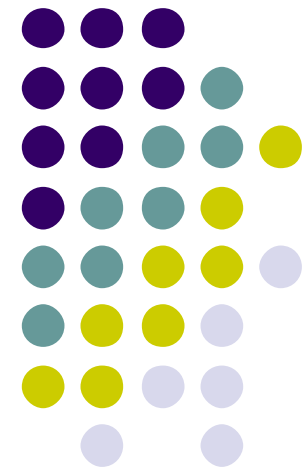


Becoming an EU Member and Adapting to Climate Change:

Case of Southeastern Europe

Ron Hoffer
Environment and Water Advisor
The World Bank
July, 2008

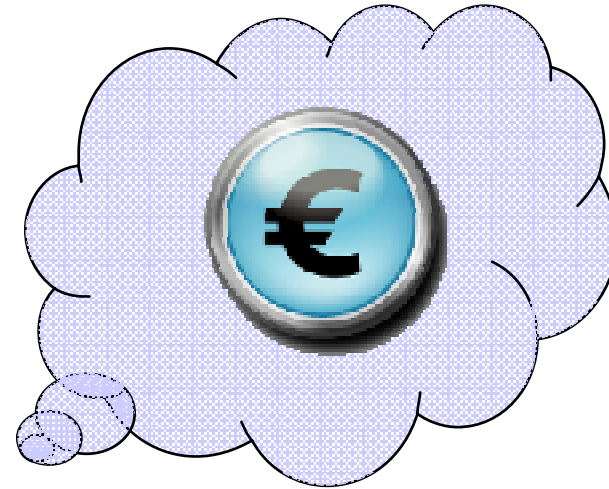


Discussion Topics



- 3 Key messages
- EU membership & environment
- Climate trends and projections for SEE
- Implications for investments
- Partnerships and lessons from Spain

Key Messages



...and climate change too?





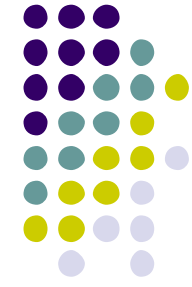
Mitigation

Adaptation

Innovation

Partnerships

SEE Countries & the EU



MEMBERS

Slovenia
Romania
Bulgaria

CANDIDATES

Croatia
Turkey
FYR Macedonia

POTENTIAL CANDIDATES

Albania
Bosnia-Herzegovina
Serbia
Montenegro



EU membership & environment



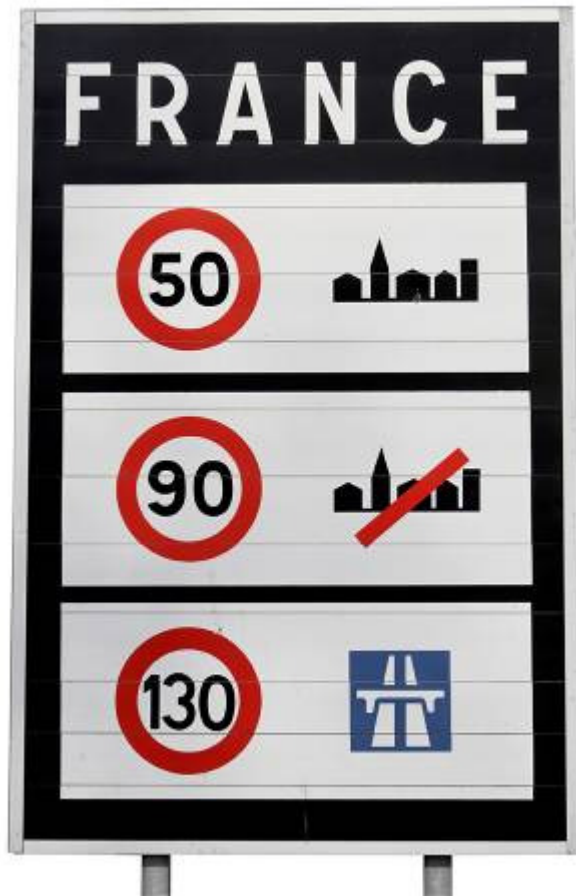
SECTOR 6



- ***Nature protection and biodiversity***
- ***Wastewater, drinking water, bathing water***
- ***Air quality: stationary & mobile sources***
- ***Waste prevention, recycling, reuse, disposal***
- ***Industrial pollution control***
- ***Chemicals and GMOs***



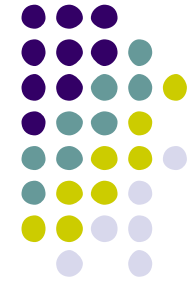
Not an easy job!



Transposition

align national laws

Not an easy job!



Implementation

people & institutions

Not an easy job!



Compliance & Enforcement

Not an easy job!



% population connected to wastewater treatment plant:

0% Albania	4% BiH
23% Serbia	37% Croatia

of sanitary landfills:

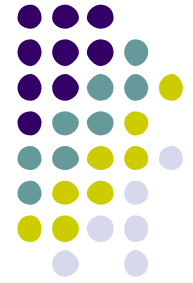
0 (of >12) in Albania
6 (of >100) in BiH

Costs to comply with EU acquis:

6 – 12 billion Euro for Croatia
34 billion Euro for Turkey:
12.7 B - drinking water
18.1 B - wastewater

Source: Regional Environmental Center; Oct 2007 on W Balkans; Turkish MoEF

EU energy policy

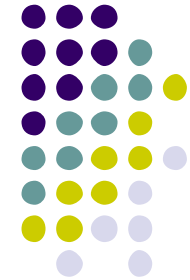


20-20-2020



E

Weather and climate



**Zaragoza
July 2008**

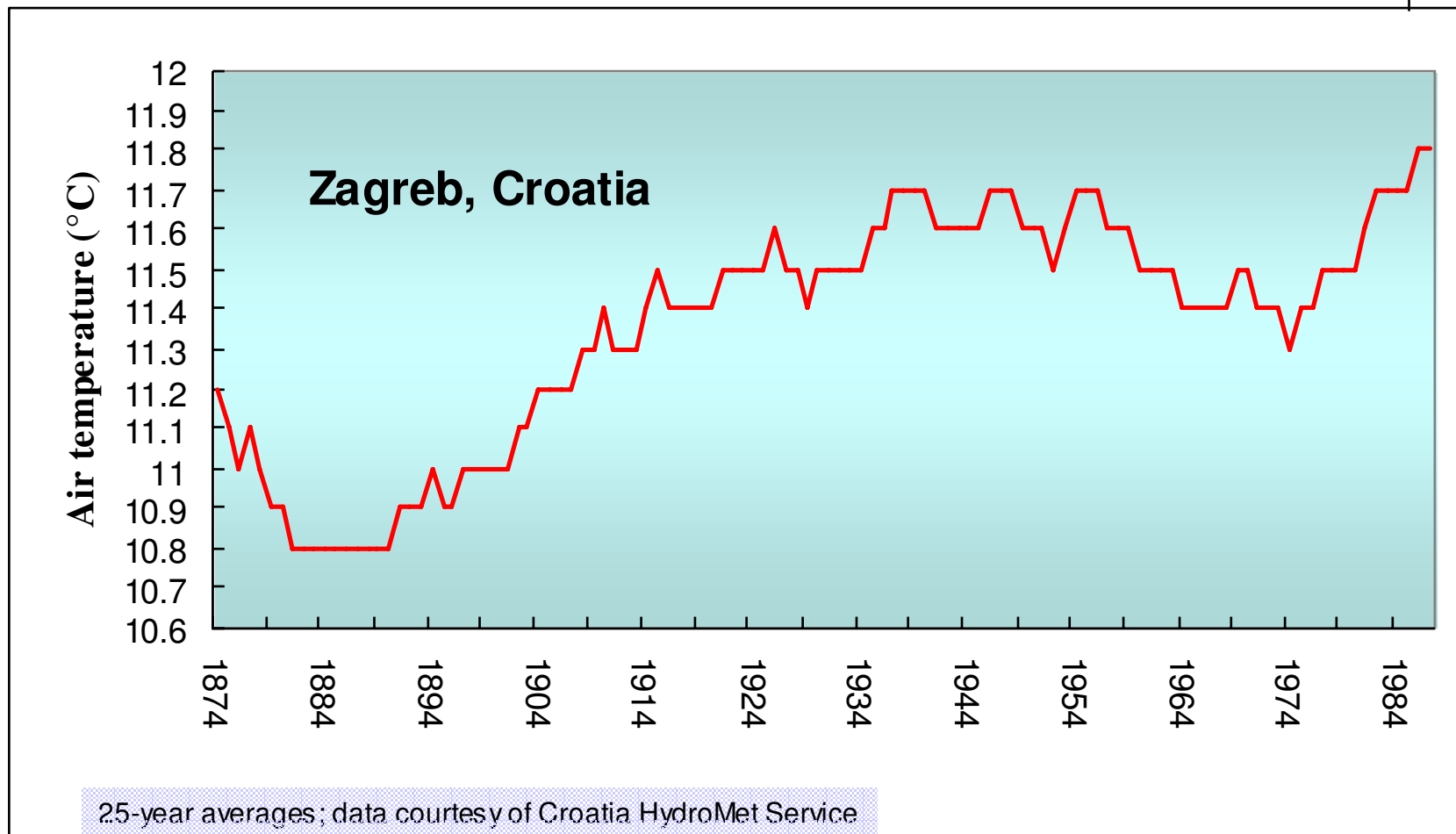


10,000 BC 1850 1955 1990 2009 2040 2100

paleoclimate - trends forecast - projections

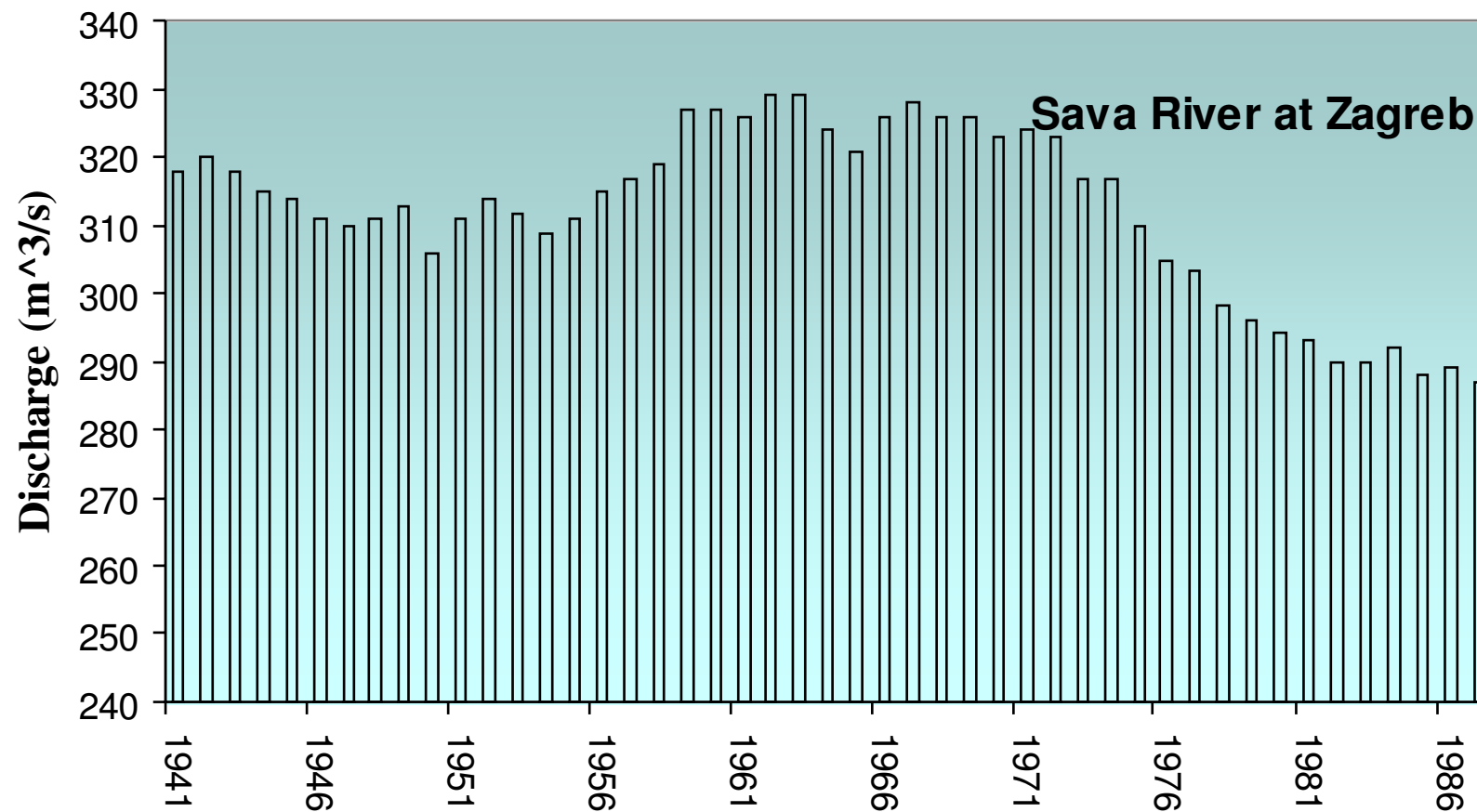
climate variability ----- climate change

It has been getting hotter



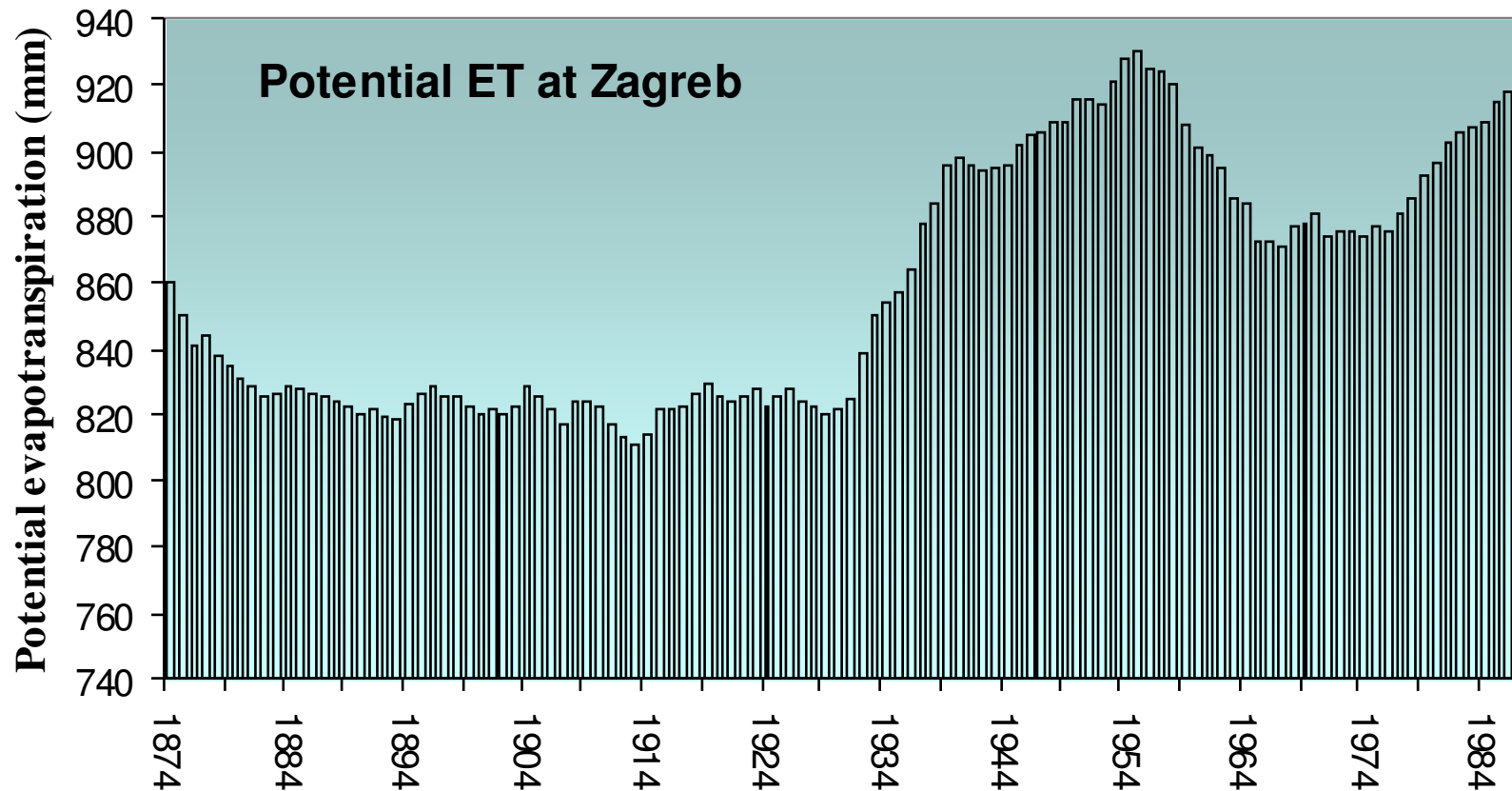


Runoff has been decreasing



25-year averages; data courtesy of Croatia HydroMet Service

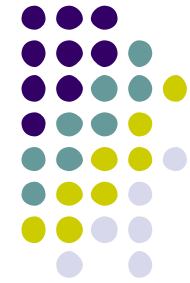
Less moisture available to crops



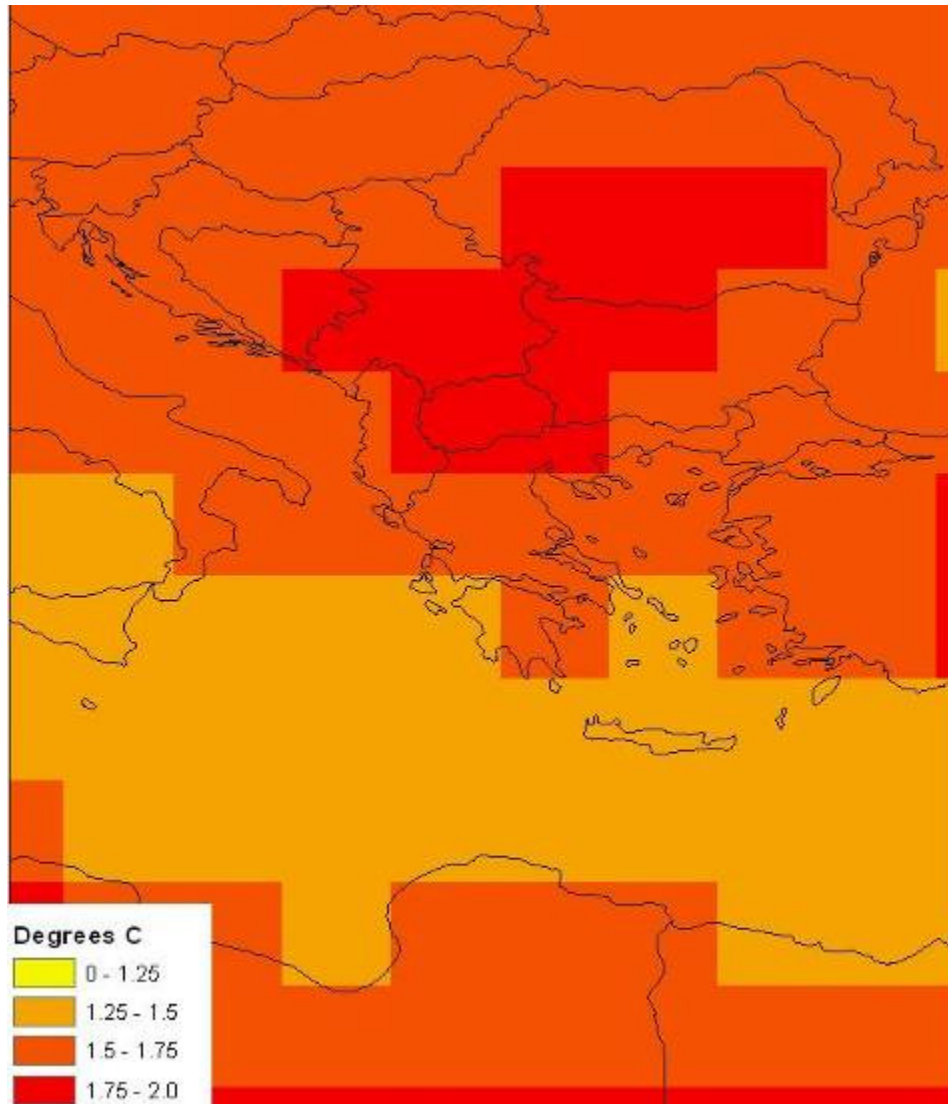
25-year averages; data courtesy of Croatia HydroMet Service

Expo Zaragoza 2008

Projecting future climate



Temperature projected to increase by mid-century

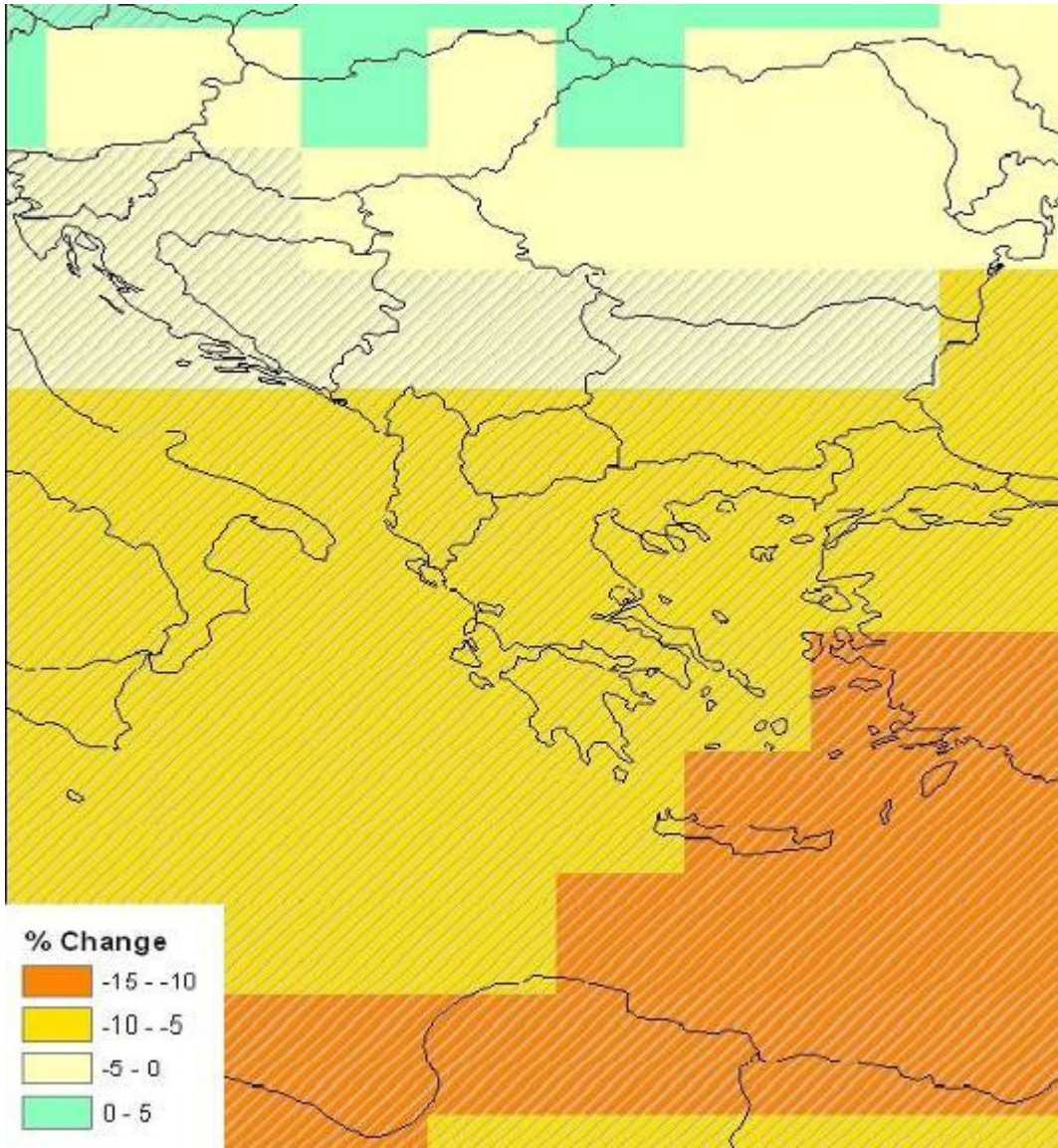
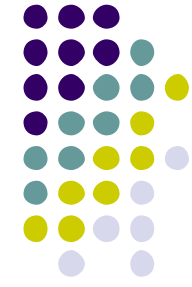


Change in mean annual temp
projected to 2030-2049
from 1961-1980

Suite of GCMs

Source: World Bank

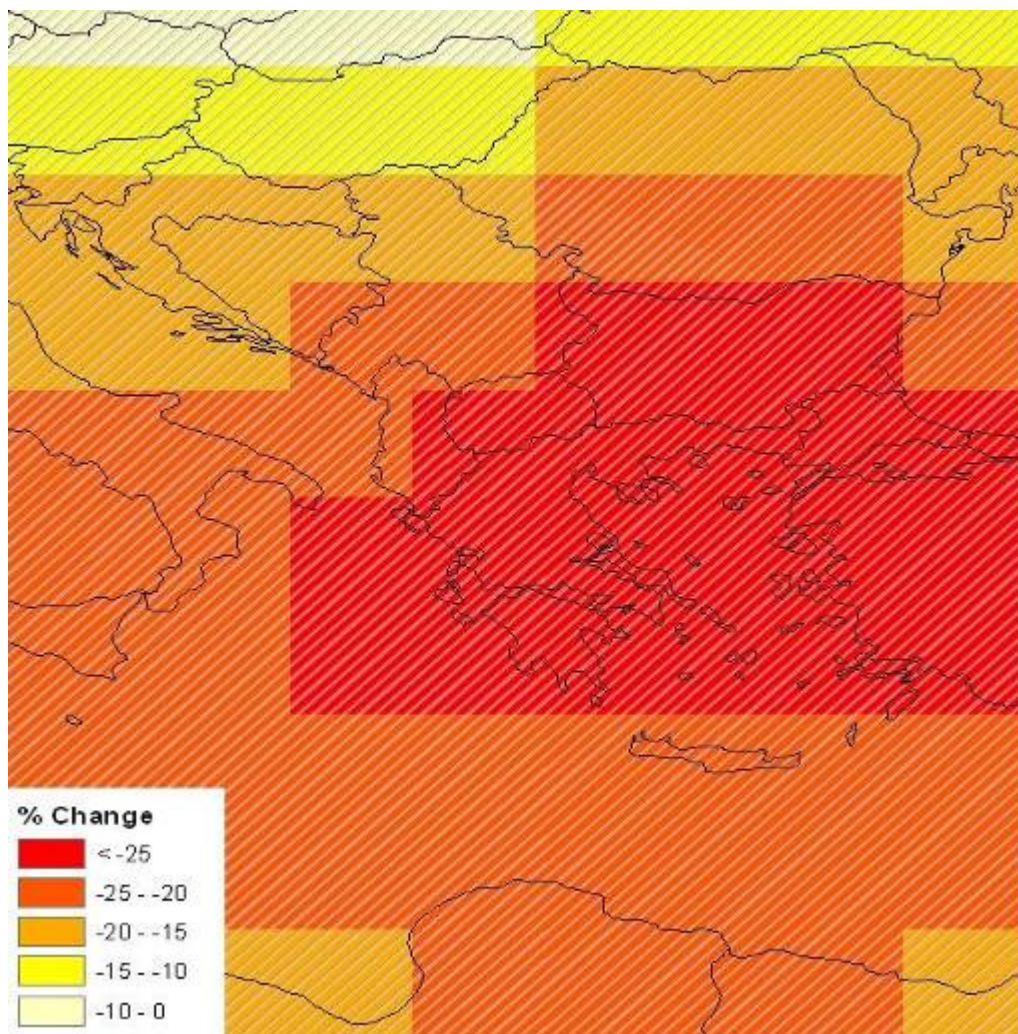
Precipitation likely to decrease by mid-century



Change in mean annual precipitation projected to 2030-2049 from 1961-1980
Suite of GCMs

Source: World Bank

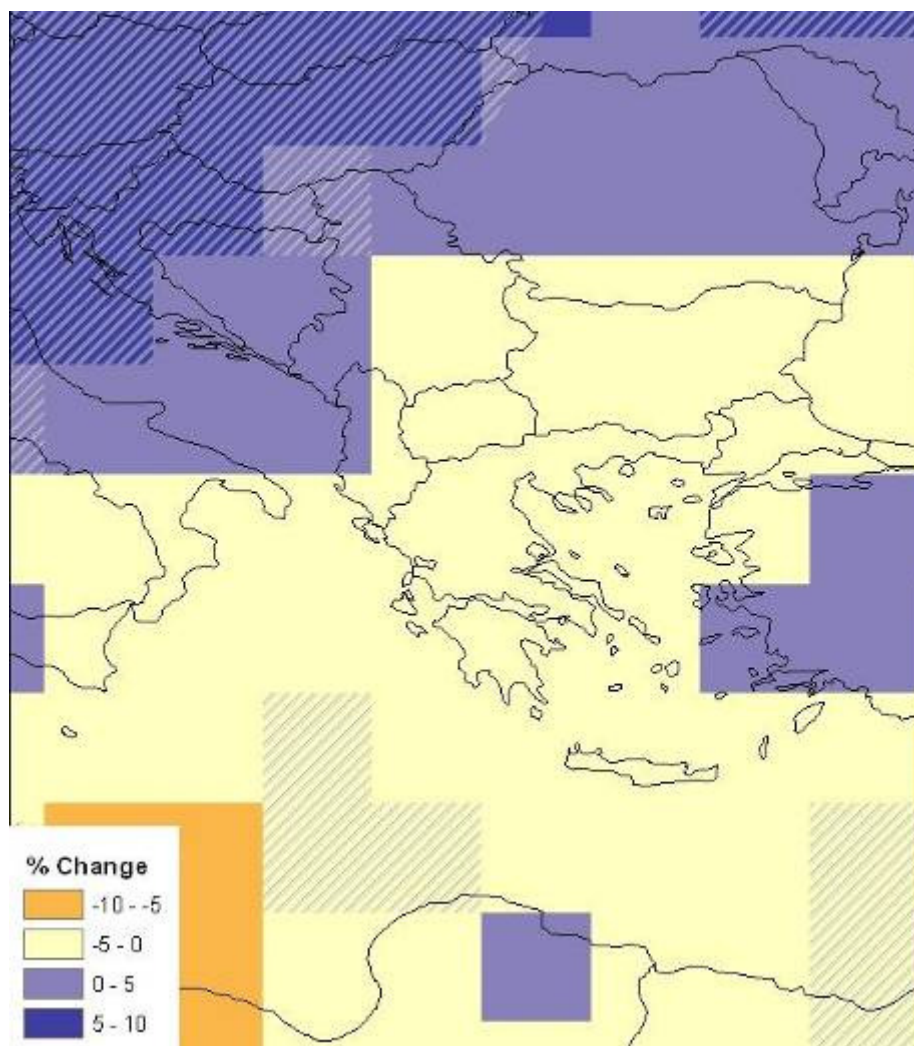
Water available to rivers projected to decrease by mid-century



Mean annual runoff
projected to 2030-2049
from 1961-1980

Source: Milly et al. (2005, 008)

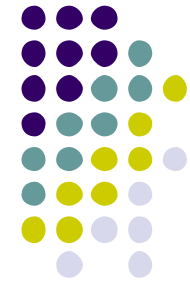
Storm intensity likely to increase by mid-century



Change in maximum 5-day precipitation projected to 2030-2049 from 1961-1980
Suite of GCMs

Source: World Bank

Implications on investments



Energy strategy?
Enough precipitation?
Reservoir size?
Environmental needs?



Adaptation: Simple or Complex?

- Expand planting of drought-tolerant crops
- Introduce more efficient irrigation technologies
- Enlarge storage reservoirs at hydropower plants
- Strengthen flood control dykes; shift to non-structural
- Expand health surveillance
- Resettle population and agriculture from drought stricken areas
- Expand programs for biodiversity protection beyond park boundaries



World Bank Interest – SE Europe

Knowledge Products

- Pilot assessments of impacts & adaptation

Example Investment Projects

- Energy community of SE Europe
- Irrigation and drainage rehabilitation
- Renewable energy
- Trade and transport
- Integrated ecosystem management
- Watershed management
- HydroMet service improvements
- Regional disaster risk management

Strategic Framework for Climate Change and Development



Integrate climate in development strategies

Innovative and “concessional” finance

New market mechanisms

Private sector resources

Technology development and deployment

Research, knowledge and capacity

Partnerships

