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Resilient nations.*

# Climate Change Adaptation in Bosnia and Herzegovina

Belgrade 22 April 2013



Energy and  
Environment

# Significant improvement made in BiH



- Up until 2009 BiH was amongst last 4 countries in the world regarding level of fulfillment of UNFCCC commitments
- 2009 – prepared First BiH National Report in accordance with UN Framework Convention on Climate Change (UNFCCC)
- 2010 – established first designated national authority (DNA) for implementation of clean development mechanism (CDM) projects of Kyoto Protocol
  - Up until now 3 CDM projects = investments in value of 350 mil. €
- 14 cities and municipalities in BiH signed “EU Covenant of Mayors” – 44.57% of BiH population committed to European targets “20-20-20”
- With UNDP and GIZ assistance prepared “Sustainable Energy Action Plans” (SEAP), energy management systems (EMIS) and implemented EE



and RES pilot projects  
Environment

# On-going activities...



- Final phase of preparation of new strategic documents in the area of climate changes:
  - Second national report of BiH to UNFCCC (SNC)
  - Localized model of climate changes for BiH – developed through work on SNC
  - Strategy to climate change adaptation and low carbon development (LEDs&AS)
  - Development of measures for climate changes mitigation (NAMAs) for prioritized sectors/areas
- Preliminary energy audits of buildings in public sector (Cantons 1 and 7, schools and health centers in RS)
- Pilot project of electricity supply from renewable sources for families who returned to places with no access to the network
- Result: BiH is now among the developing countries that are progressing in along with global trends in the area of climate changes and holds strategic position to be able to take advantage of prospective financial mechanisms

# SNC – Observed climate changes



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As a part of preparation of SNC, comparison of values in the period 1981-2010 and values from the period 1961-1990 was conducted and the following trend observed:

- Increase in medium annual temperature by +0,4 to +0,8°C, in time of vegetation even by +1 °C
- Biggest increase in so called “cities as heat islands”: Mostar +1.2° C, Sarajevo 0.8° C and Banja Luka 0.7° C.
- Annual quantities of precipitation slightly increased, however localities and structure of precipitation changes
- Threatening trends:
  - Fewer average number of days with precipitation
  - More days with intensive precipitation



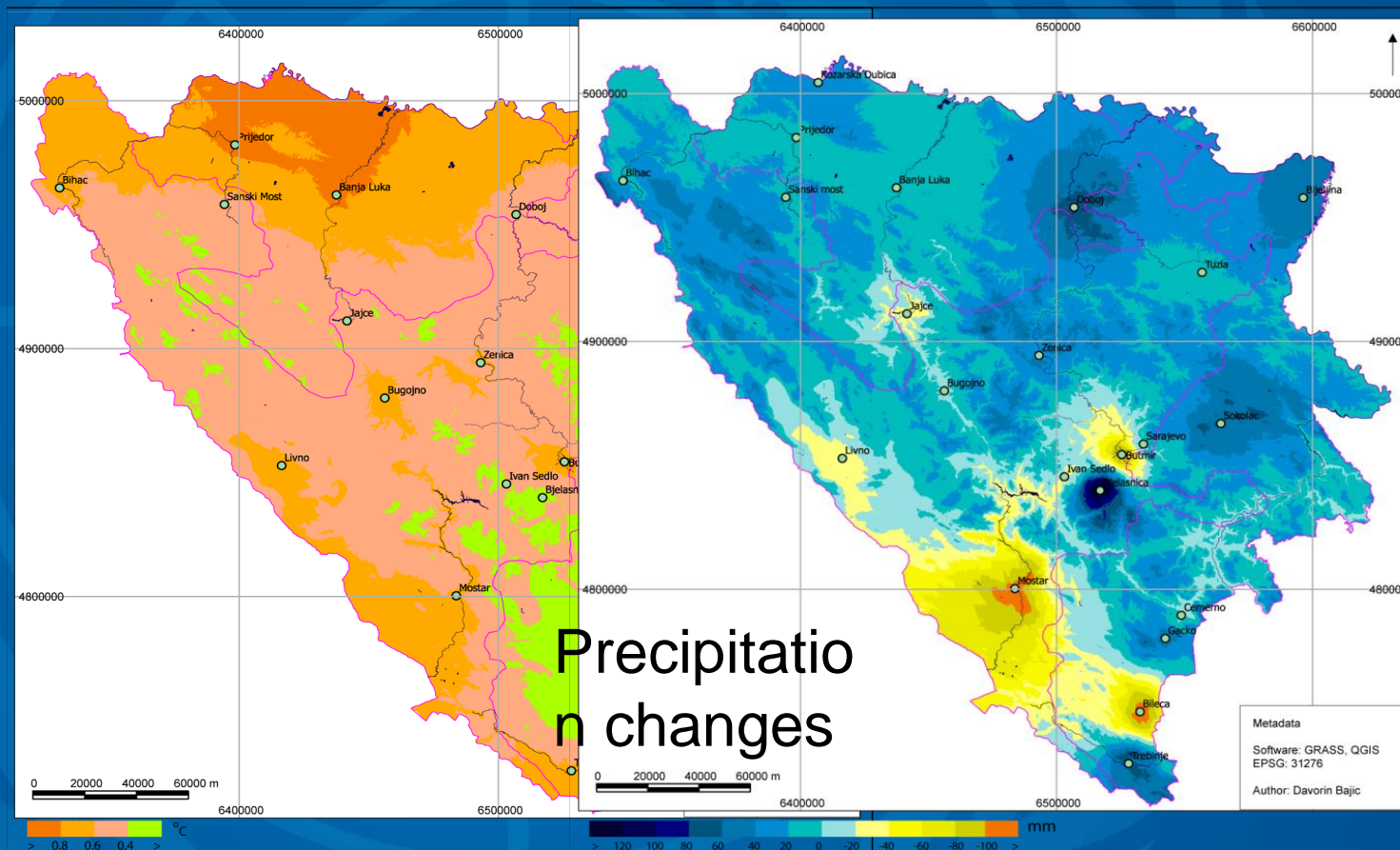
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# SNC – Observed climate change

- Comparison of values in period 1981-2010 with period 1961-1990 -



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Temperature  
change

Precipitation  
changes

# SNC – Observed climate change

## Threatening trends:

- Increased number of days with summer ( $>25^{\circ}\text{C}$ ) and tropic ( $>30^{\circ}\text{C}$ ) temperature
- Decreased precipitation in western and south-western parts of the country
- Increased precipitation in autumn and winter
- Decreased snow cover
- Longer drought periods – average annual water deficiency in soil 125 mm

## Result:

Increased variability leading to more frequent occurrence of extreme weather events – hot and cold waves, floods, droughts...

# Extreme weather conditions in recent years...

Since 2000, the following was observed in BiH :

- 5 drought years
- 4 years with great floods

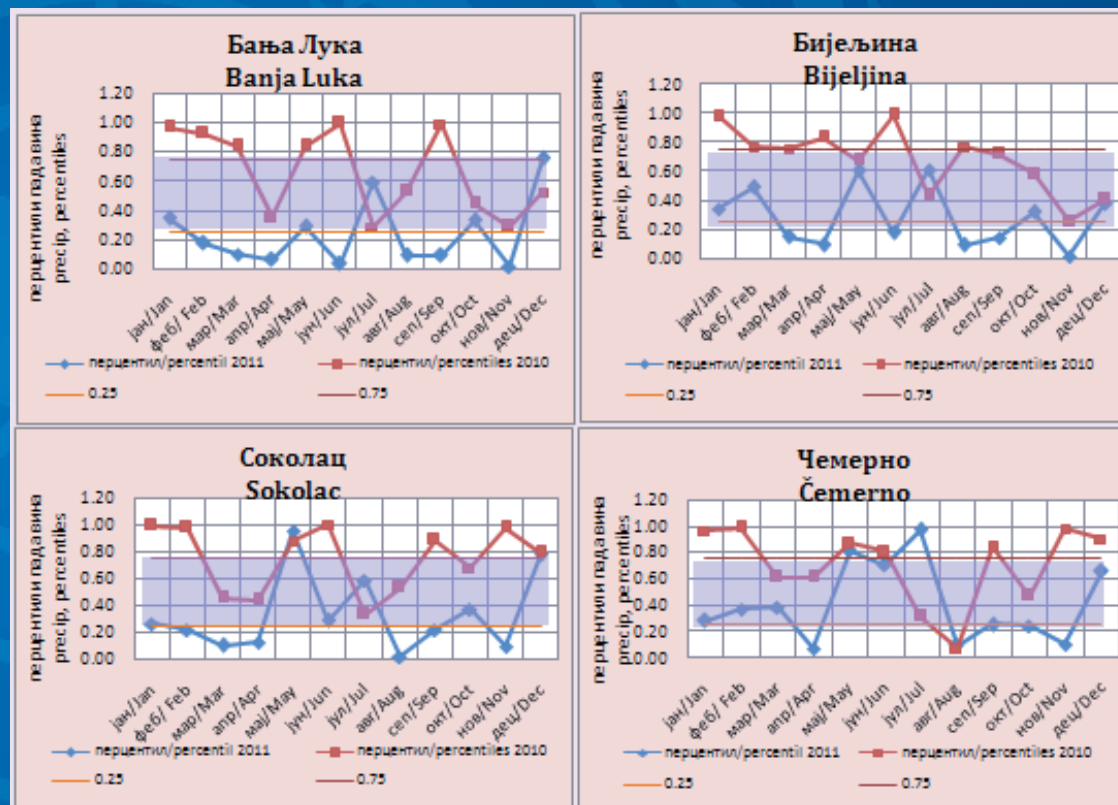
Last 4 years (2009-2012) were all characterized by extreme weather conditions:

2009 – floods

2010 – floods

2011 – drought and high temperature

2012 – cold wave, drought and high temperature, wind strikes



Charts present levels of precipitation in two extreme condition year: 2010 (red) and 2011 (blue).

# In real figures...

## 2010

- Flood caused damage in 2010 around €200 Mio
- Floods in 2010 – Drina River at a level 11 times higher than normal

## 2011

- Bad hydrological situation in 2011 – decreased electricity generation from hydro plants by 45%, and for HE on the Neretva river by 75%

## 2012

- Drought and high temperature – estimated losses about USD 1 billion in agricultural production, 70% lower harvest of vegetable and corn
- Lower production of electricity from hydro plants by 25%



# Conclusion



- Climate changes are a vital socio-economic problem not only a matter of nature protection
- BiH is very much exposed to negative effects of climate changes
- BiH is highly sensitive to these effects due to great importance of “climate sensitive” sectors of economy and their share in GDP:
  - agriculture,
  - energy industry
  - forestry...
  - water management...
- Human and material resources in BiH are not sufficient for the country to alone face these challenge, and available financial assistance (including EU assistance) is very limited.
- A priority is to integrate the climate change effects in sectoral policies.