

Fourth International Conference on Climate Services (ICCS4)

Upgrading weather, climate and water information services to enhance food and water security in Yemen



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Background of Yemen

- **Cultivated area** = 1,411,929 ha out of a total of 1,609,484 ha. (CSO 2011)
- **Population:** 23,832,569 (CSO 2011). More than half of the population works in the agriculture sector.
- **GNI per capita:** US\$ 1,070 compared with an average of US\$ 2,321 for lower middle-income countries. (WB 2010).



Background continued

Main water resource: rain (seasonal)

Average annual rainfall:

Coastal areas and desert: 50-100mm

Mid highlands: 200-400 mm

Western slopes of the mountains: > 800 mm

Annual water consumption: estimated as 3.2 billion m³

Annual renewable water: estimated as 2.5 billion m³

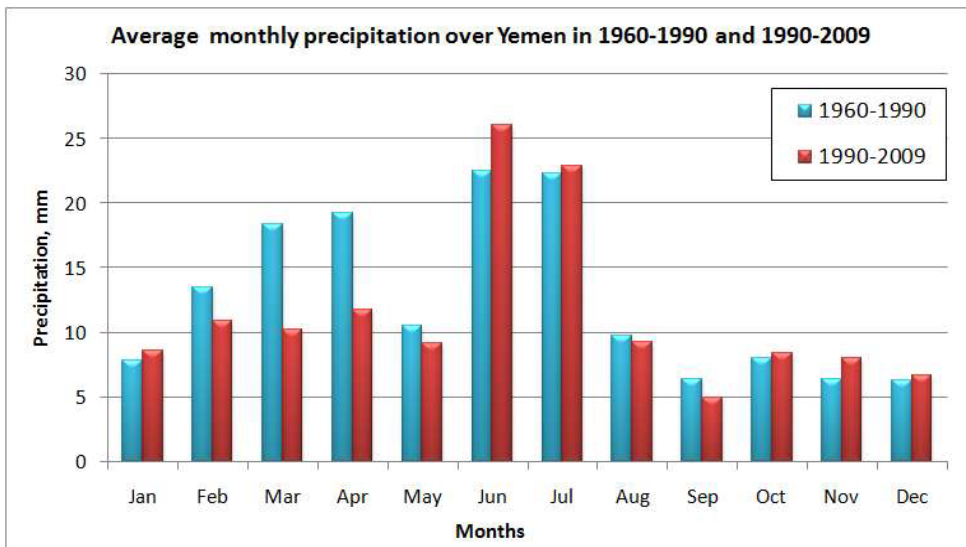
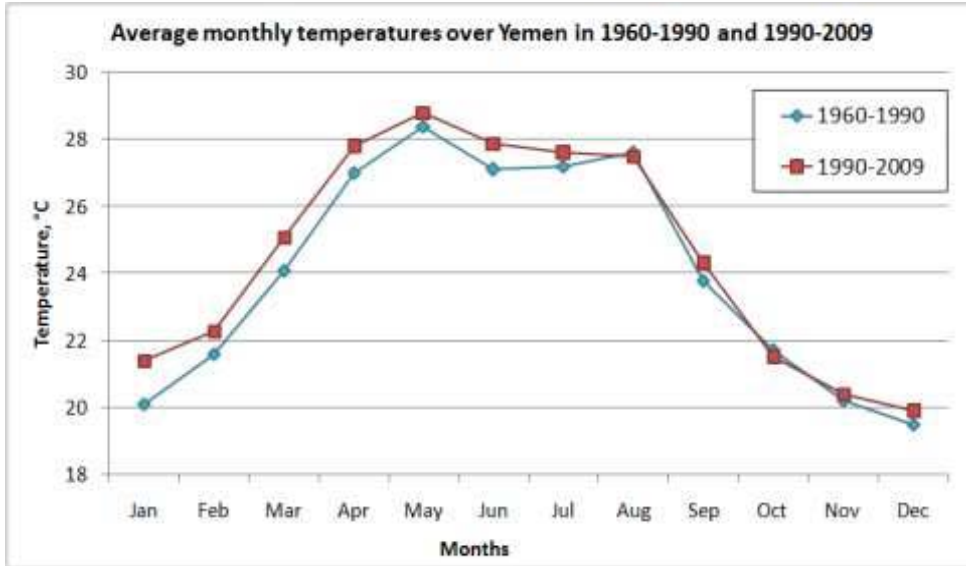
> than 90% of the annually consumed water goes to meet agriculture demand.

Background continued

- Yemen is particularly vulnerable to climate change
- Floods due to heavier rainfall causing loss of life and significant damage to assets and livelihoods. The floods of 2008, for example, killed 180 people, displaced 10,000 and caused damage and losses to infrastructure, shelter, and livelihoods equivalent to US\$1,638 million amounting to 6% of Yemen's GDP (W B,2013)



Observed Climate Change in Yemen



Future Projections

by 2060-2080

1. National average

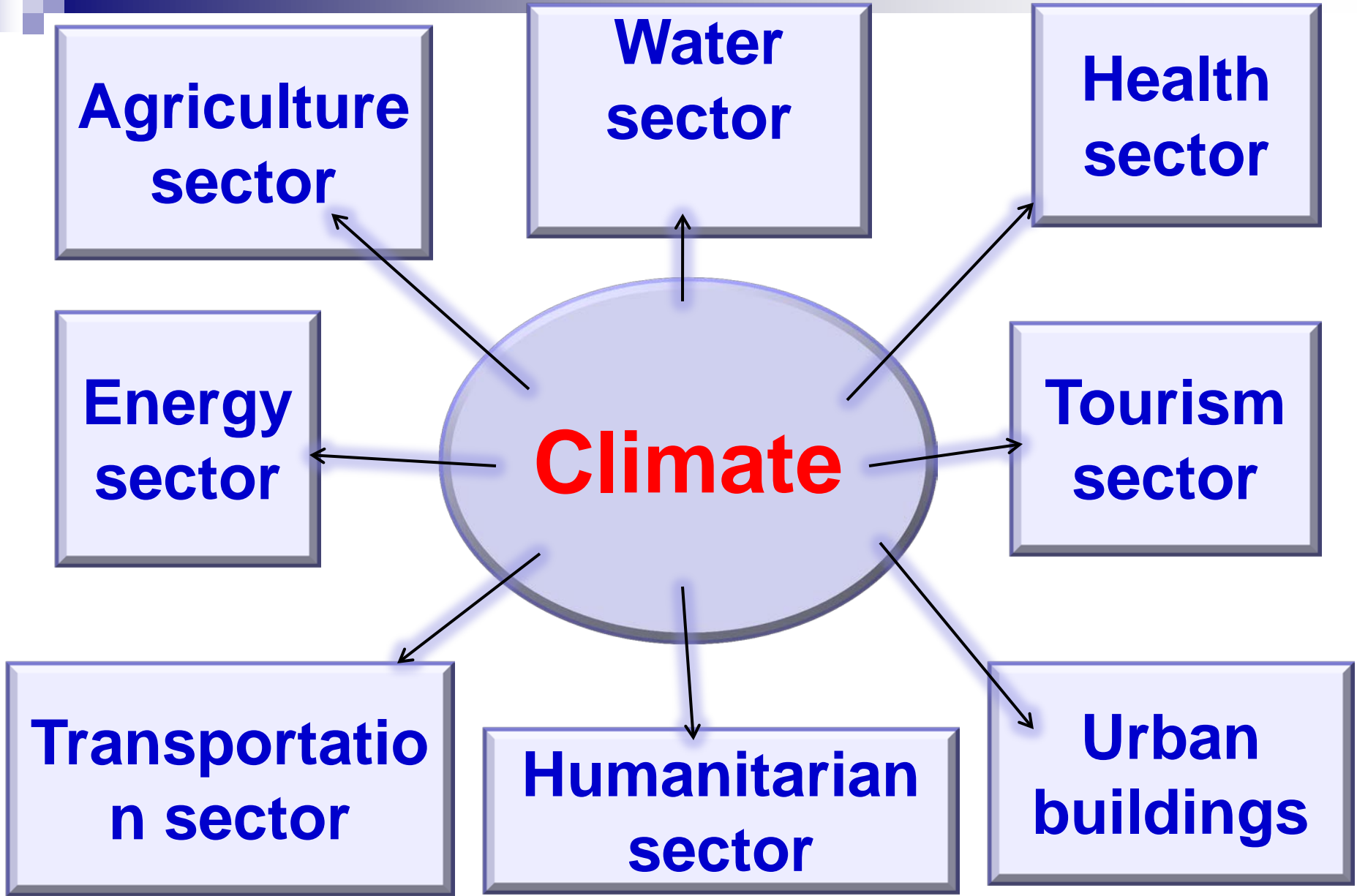
temperatures = 3.1%,

2. Decline in:

a) annual mean rainfall by -3%

b) runoff by 22%

c) recharge by 12%



Climate change impact on water

- Reduced water availability, particularly in lowland areas if weather turns hotter & drier;
- Dwindling groundwater resources.



yemen-press.com



adenalghad.net



www.taiznet.net

Climate change impact on agriculture

- Agriculture is most vulnerable to flood risk and has incurred the highest level of losses in physical assets. In the 2008 flood, losses in agriculture were nearly 64 percent of total damages. (W B, 2013)
- Earlier spring seasons, causing plants to bloom earlier;
- Change in rainfall patterns and intensity with high variability on horizontal vision level;
- Plant migrations toward cooler and more humid areas;
- Farmer facing difficulties in planting and cultivating crops.

Climate change impact on agriculture, cont.

- Regions affected by higher temperatures and greater precipitation, likely to result in the spread of agricultural pests and diseases;
- Crop failures, food insecurity, famine, mass migration, and negative national economic growth.



[url=<http://www.almotamar.net/upload/Image/kartha/14.jpg>]



<http://www.swissinfo.ch/>

Challenges

- Water dependence and current high levels of water stress;
- Demographic pressure, weak governance structures and institutions and a deteriorating economic situation;
- Lack of explicit policies;
- Limitations of appropriate and reliable climate data, studies, models and scenarios;
- Weak quality of existing hydro-meteorological and climate services provided to end-users;
- Lack of coordination and sharing knowledge;
- Traditional agriculture exercises or activities;
- Lack of risk management and an early warning system;
- Low awareness about causes of climate changes and resilience;
- Low capacity building;
- Weak advisory system;
- Lack of legislations;
- Weak implementation of water and meteorological laws;
- Lack of financial resources.

Yemen Climate Information System and PPCR Coordination

Through this project
Yemen aims to

**Better
manage water
resources**

**Increasing
agricultural
productivity**

**Reducing the risk
of climate-
sensitive diseases**

This will be made by

**Improving the monitoring and assessment of climate
variability and change and providing targeted and
reliable information for decision making**

Conceit on work plan for 2015

A) Institutional strengthening and capacity building.

- Institutional strengthening and development of a legal and regulatory framework.
- Capacity building and training.
- Detailed design and technical implementation support of the project.

B) Modernization and expansion of the national hydro-meteorological and monitoring networks.

- Technical modernization of the observing networks.
- Modernization of the communication and ICT system .
- Design and pilot operation of an environmental monitoring system.

Conceit on work plan for 2015, cont.

- C) Enhancement of service delivery system
 - Enhancement of public weather services (for agriculture, water resources and irrigation DRM, media, civil aviation, health, and renewable energy).
 - Support of disaster risk management.
 - Creation of the national climate service.
- D) PPCR program management and knowledge sharing.
 - PPCR Program management.
 - Project management.
 - Knowledge sharing amongst all stakeholders and the public.

An aerial photograph showing a lush green landscape with terraced fields. The fields are arranged in curved, parallel rows on a hillside. In the upper left, a small village with several buildings is visible. The overall scene is vibrant and green, indicating a healthy agricultural environment.

Thank you

Green fields in Ibb