

Session 4: Building climate resilience practices in water management

1. Goal

Increase the understanding of the participants on the types of adaptation measures in water resources management at all levels

2. Learning objectives

At the end of the session, the participants will be able to:

- Understand the water resources management measures based on no-regrets options available to address vulnerability to climate change
- Strategize the use of different policies and instruments to build climate resilience
- Promote adaptation at the appropriate level.

3. Key messages

- No-regret technical and institutional adaptation measures to climate change in the water sector require strong capacities for data assessment, monitoring & sharing, as well as planning in order to better grasp water resources availability and variability, water demands characteristics and trends.
- Any action that contributes to minimize the gap between water supply and demand can be considered as a no-regret adaptation measure. This includes improving water quality, since it makes additional water available for other uses. Actions that contribute to reduce the vulnerability to extreme events, such as floods and droughts are also no-regret measures.
- No-regret adaptation in the water sector requires comparing the advantages and disadvantages of the various possible measures. In addition to costs and benefits, the sensitivity of the various solutions to uncertainty is a key and challenging dimension of the evaluation.
- Water demand management measures are important to insure water security under the threats of climate change that the participant countries face. Water losses need to be assessed in a comprehensive manner, that distinguish dry and wet savings and take into account the various variables explaining farmers technological choices and strategies.

4. Resources

- Dialogue on water and climate, UN Water. 2003. *Climate changes the water rules. How water managers can cope with today's climate variability and tomorrow's climate change*. 105 pages.
www.worldwaterweek.org/.../Climate_changes_the_water_rules.pdf
- Economic Commission for Europe, Convention on the Protection and Use of Transboundary Watercourses and International Lakes. 2009. *Guidance on water and adaptation to climate change*. 127 pages.
www.unece.org/env/documents/2009/.../ECE_MP.WAT_30_E.pdf

- Elliot, M., Armstrong, A., Lobuglio, J. and Bartram, J. 2011. *Technologies for Climate Change Adaptation—The Water Sector*. T. De Lopez (Ed.). Roskilde: UNEP Risoe Centre.
http://www.waterinstitute.unc.edu/media/TNAhandbook_Water.pdf
- European Environment Agency. 2007. *Climate change and water adaptation issues*. Technical Report N°2. 110 pages.
www.eea.europa.eu/.../technical_report_2007_2
- International Water Management Institute (IWMI). 2009. *Flexible water storage options: for adaptation to climate change*. Colombo, Sri Lanka. 5p. (IWMI Water Policy Brief 31).
http://www.iwmi.cgiar.org/topics/Water_Storage/index.aspx
- Laaser, C., Leipprand, A., de Roo, C., and Vidaurre, R.. 2009. *Report on good practice measures for climate change adaptation in river basin management plans*. European Environment Agency. 116 pages.
http://icm.eionet.europa.eu/ETC_Reports/
- Mediterranean water scarcity and drought working group. 2008. *Mediterranean Water Scarcity and Drought Report*. Joint Mediterranean EUWI/WFD Process. 76 pages
http://www.emwis.net/topics/WaterScarcity/EUWI_WSD_Report_-_FINAL_June_2008.pdf
- Trondalen, J. M., UNESCO-PCCP. 2009. *Climate changes, Water Security and Possible Remedies for the Middle East*. Scientific Paper, The United Nations World Water Assessment Programme. 32 pages.
<http://www.unwater.org/policyclimate.html>
- UNDP Community Water Initiative. 2010. *Fostering Water Security and Climate Change Mitigation and Adaptation*, 33 pages.
http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/cwi-fostering-water-security-and-climate-change-mitigation-and-adaptation.html
- UNFCCC. 2011. *Water and climate change impacts and adaptation strategies*. Technical paper. 33 pages. unfccc.int/resource/docs/2011/tp/05.pdf
- Van Steenberg, F., Verheijen, O., van Aarst, S., Haile, A. M. No date. *Spate Irrigation, Livelihood Improvement and Adaptation to Climate Variability and Change*. IFAD, Report.
- WHO. 2005. *Water Safety Plans, Managing drinking-water quality from catchment to consumer*.