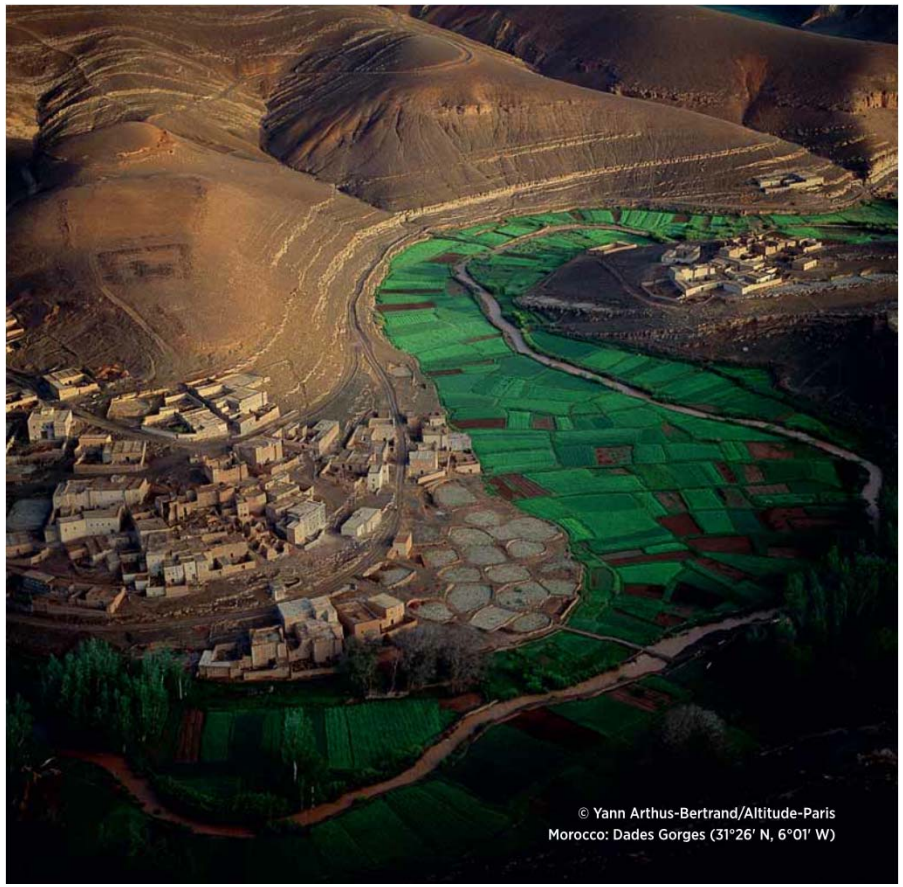
GROUP EXERCISE n°1: Scarcity case study

Training workshop on the identification and development of climate change no-regret actions in the water sector, 3-5 October 2012, Amman

Case study

Jordan

Morocco



The challenges facing the SWIM country

The Country "SWIM" is facing increased water scarcity:

- Present situation and trends:
  - High population growth rate: 2%
  - High evaporation rates (aridity)
  - Population urbanization

- Climate change scenarios for the SWIM country (2050 horizon):
  - Increases of average temperature: + 3°C (± 0.5°C) in winter and + 4.5°C (±1°C) in summer
  - Decreases of average runoff of most of the rivers (- 50 %) and available resources (surface and groundwater)
  - Increase of extreme events, droughts and floods (frequency and intensity): land degradation (20 % of total land in the country), recurrent losses of agriculture production…

The challenges facing the SWIM country

Business as usual scenario coupled with the likely impacts of climate change:

- Increased demands for water for agriculture and municipalities
- Increased vulnerability of:
  - Agriculture, particularly cereals that greatly depend on rainfall:
    - Expected drop of wheat and barley production (30 %)
    - Significant decline of rain-fed areas
    - Tensions for water allocation to irrigation
  - Livestock production (impacts of the expansion of arid lands on grazing): expected drop of sheep production of around 40 %
- Mass migrations, diseases, unemployment, rise in the rate of borrowing…

How to reduce vulnerability to water-related natural hazards and adaptation to climate change?

Step 1: Identify/Develop adaptation measures

Column B
Identify 2-3 climate change impacts based on the case study

Column C
Devise adaptation options to prevent, reduce or avoid the adverse biophysical and socio-economic impacts

A. System of interest	B. Selected climate change impacts with need for actions	C. Identified adaptation measures
Water supply	Falling ground water levels due to lower recharge and over-pumping Quality problems due to lower recharge and extreme rain events	
Agriculture		
Ecosystems		
Etc.		

- Use list of adaptation options in **Annex 1** to help you identify proper measures
- Think through all categories of adaptation options
- Think of adaptation options enhancing opportunities from climate change.
- Think of adaptation options enhancing the adaptive capacity of relevant actors

How to reduce vulnerability to water-related natural hazards and adaptation to climate change?

Step 2: Assess and select no/low regrets adaptation measures

Column C
Transfer potential adaptation options from Matrix 1 to column C

Column D
Consider each option (C) using criteria & scores them between 1 and 5, where 1 is 'poor' & 5 is 'excellent'

Column E
Evaluate the options

Identified adaptation measures	Criteria score (1-5)				Overall evaluation	Comments
	C1	C2	C3	Etc.		
– E.g. Installation of tube wells on individual plots	2	4	3		15	
– E.g. Rainwater harvesting with provision of domestic water tanks						
– E.g. Shift to dry systems of sanitation due to lack of water						
Etc.						

- Choose and discuss the selection criteria and add other criteria if desired (see Annex 2).
- Do the results make sense? Do they address the range of key risks? Would they be effective together? Do they overlap or complement each other?