



# GROUNDWATER CONTRACT FROM SEARCH RESILIENCE APPROACH

Water & Nature Conservation in MENA Region  
Sharm El Sheikh, 12-13/5/2015

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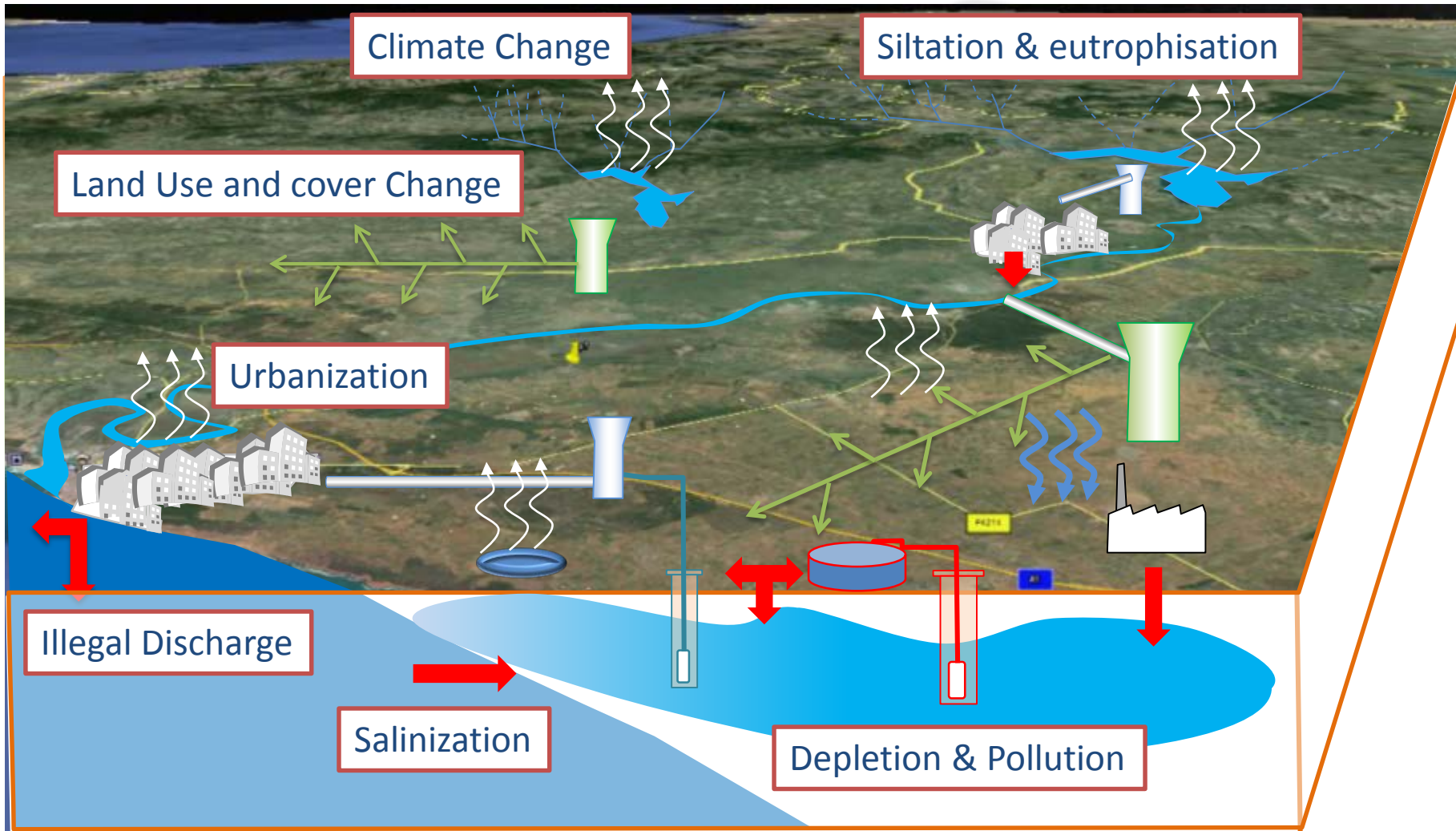
Abdelmalek Essaâdi University, Morocco

The Regional Knowledge Network on Water



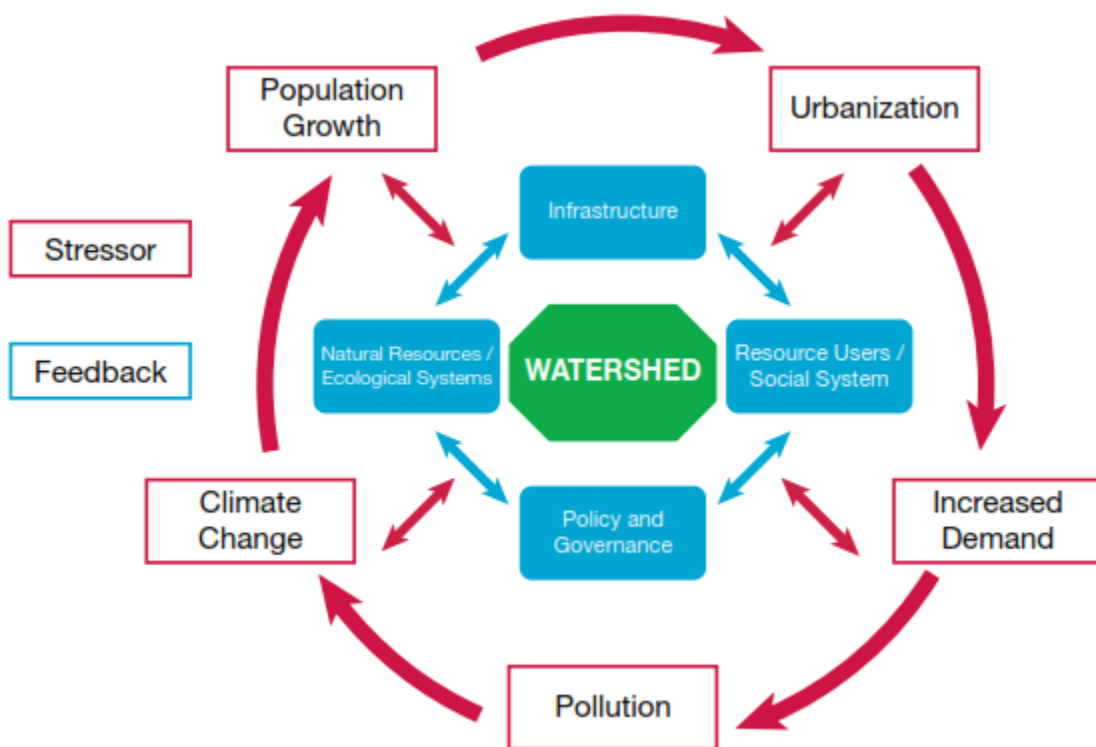


# Impacts of global change on freshwater systems

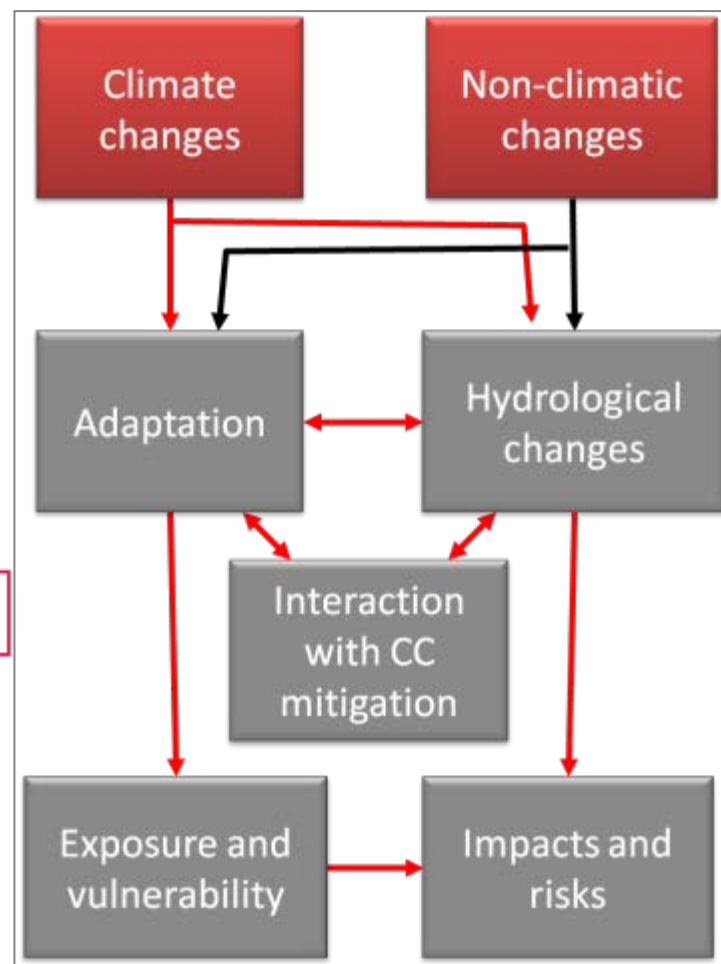




# Framework for considering impacts of global changes on freshwater systems



(SEARCH Toolkit, 2014)



(IPCC/AR5, 2014)



# CC adaptation options for the management of freshwater resources



Institutional

Design and Operation

Reduce impact of natural disasters

Agricultural irrigation

Industrial use

(IPCC/AR5, 2014)

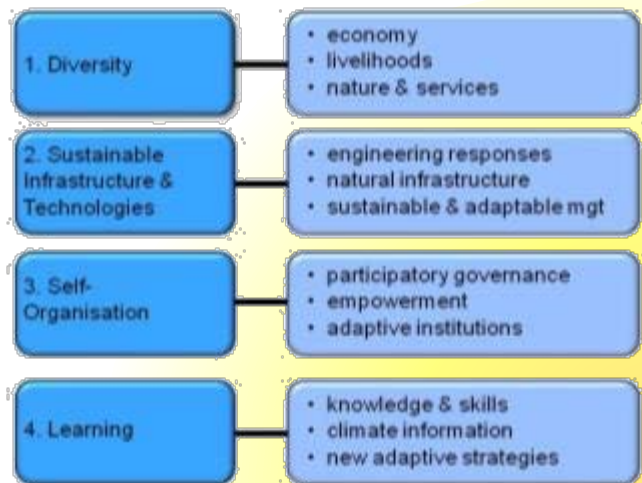
- Support IWRM, including the integrated management of land considering specifically negative and positive impacts of climate change
- Promote synergy of water and energy savings and efficient use
- Identify “low-regret policies” and build a portfolio of relevant solutions for adaptation
- Increase resilience by forming water utility network working teams
- Build adaptive capacity
- Improve and share information
- Adapt the legal framework
- Develop financial tools for the sustainable management of water, and for considering poverty eradication and equity



# RKNOW Approach to support IWRM and adaptive management



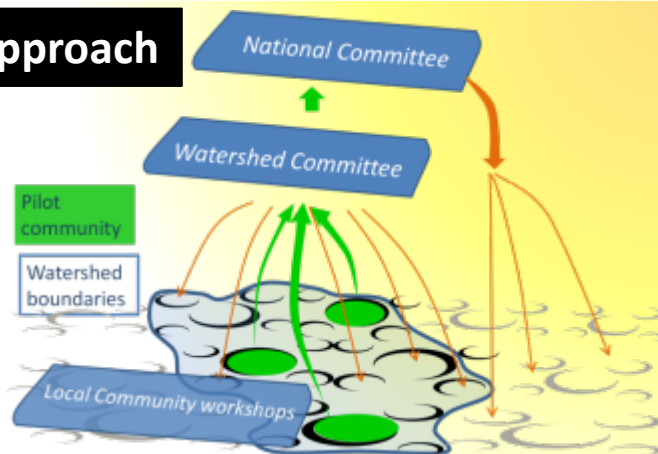
## Resilience framework



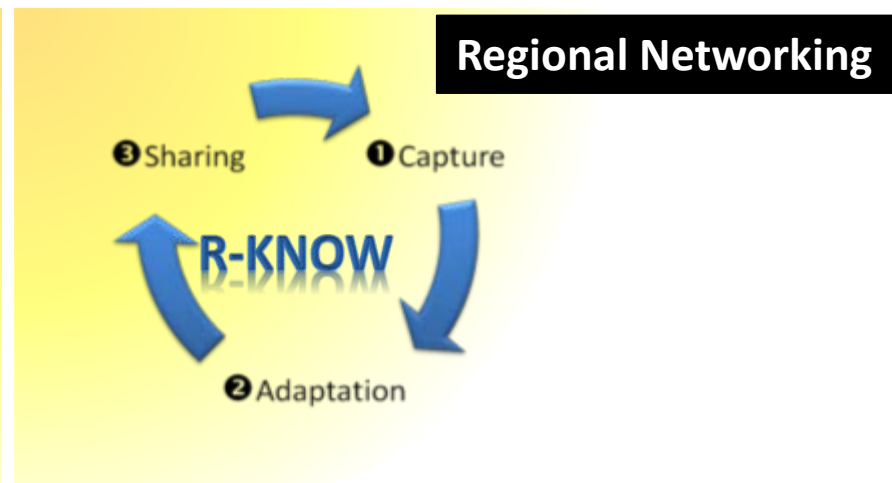
## Participatory Planning Cycle



## Bottom-up approach



## Regional Networking





# RKNOW case study: Groundwater Contract



- A GW compact is negotiated between a coalition of stakeholders in order to achieve shared policy goals about GW management.
- Problem to solve: How to give legitimacy to water law enforcement.
- The negotiated process took almost one year in order to define rights and obligations for farmers and the many institutions involved.
- Basically, farmers were allowed to use their wells but they have to accept the limitation of extension in irrigated acreage from the aquifer.



# Groundwater Contract Experience of Souss Plain



- In 2005, Souss Basin Agency decided to **close** some illegal tube wells (90% of the wells not formally authorized)
- Farmers associations and representatives protested the decision and organized a **march** in Agadir
- Regional Council and the Wali decided to postpone the closure and initiate a **negotiated solution**, on regularization of the wells and on the development of water saving techniques through a subsidy of the Regional Council
- Result=GWC: **legitimacy** to the Agency in fighting illegal withdrawals and **secured rights** of farmers (making them partners to law enforcement agency instead of enemies)

Souss: 18% of national GDP, citrus and off-seasons vegetable production and export



# Groundwater Contract Experience of Souss Region



- In 2006, *Agreement Frame For the Preservation and Development of Water Resources in the Souss Massa Draa Region* was reached between 24 institutions representing public institutions, private and NG bodies:
  - Generalization of **drip irrigation** to all farms and the creation of a **network of meteorological stations** to collect key meteorological data used for assessing crop needs on daily basis
  - Animation of a network of multi-institutional team of searchers to joint their efforts on specific **research** themes proposed by farmers
  - Initiation of a leading regional project on the establishment of **seawater desalinization** for irrigation (2,4 millions euros)
  - Valorization of **local crops** like Argan, Date palm and Safran
  - “Water Caravan” for public sensitization
- In 2007, PPP for El Guerdan aquifer (state 48%, operator 44%, farmers 8%) to:
  - Save 76 million m<sup>3</sup> of ground water per year
  - Reduce pumping costs by 50%
  - Ensure use of localized irrigation on 10,000 hectares
  - increase in production and exportation of citrus fruits, ensuring continuity of 11.000 jobs





# Groundwater contract limits



Success depends on:

- Involvement of political institutions at local level (municipalities, regional governments)
- Facilitation and catalysis capacity of water management agencies





# Recommendations

RKNOW National Seminar, Tetouan, Jan. 2015



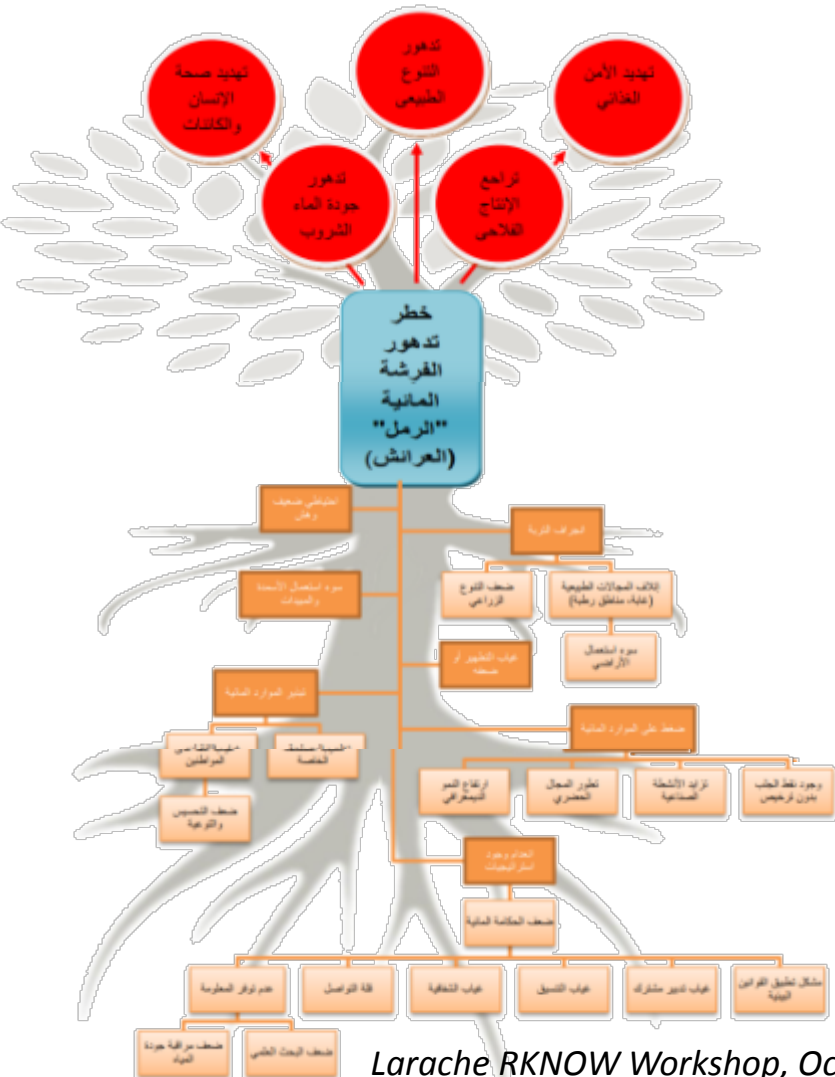
- Develop and manage knowledge on climate and socioeconomic changes and their impacts on water resources
- Develop an institutional design for watershed governance including groundwater contract (watershed parliament)
- Establish solidarity mechanisms and payment for ecosystem services
- Integrate with local plans and strategies of sustainable development and resilience



# Ongoing activities



Rmel aquifer, N.Morocco



Larache RKNOW Workshop, Oct. 2014

- Documentation of GWC processes & knowledge sharing
- Dialogue at regional, national and local levels to promote GWC implementation and improvement
- Capacity building of a rural municipality council to engage local political institutions in GWC negotiations
- Networking and training by doing of water, agricultural and environmental managers



# Thank you

[www.rknow.net](http://www.rknow.net)



# Work Group Questions

1. How to apply participatory approach to ensure proper implementation of groundwater contract among relevant stakeholders?
2. What are the required factors to guarantee the effective implementation of groundwater contract?
3. What are the main opportunities to scale up this experience in other Arab countries?

*Groundwater contract is a compact negotiated between a coalition of stakeholders in order to achieve shared policy goals about GW management*

# أسئلة لعمل المجموعات

1. كيف يمكن تطبيق المنهجية التشاركية من أجل ضمان تطبيق اتفاقية إدارة المياه الجوفية بين الأطراف المعنية؟
2. ما هي الشروط/العوامل التي يجب توفرها لضمان تنفيذ التعاقد بشكل فعال؟
3. ما هي إمكانيات نقل هذا النموذج لدول عربية أخرى؟

اتفاقية إدارة المياه الجوفية هي تعاقد ائتلاف من الأطراف المعنية بهدف الوصول إلى أهداف مشتركة تتعلق بإدارة وتدبير موارد المياه الجوفية