How can cooperation over transboundary surface and groundwater resources be achieved in a sustainable way ? *A Worldwide Challenge*

D.Pennequin – BRGM, IAH
d.pennequin@brgm.fr

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> What is needed ? The ingredients for success …

- Recognized socio-economic – political - benefits
- Political will, a common vision, common objectives (with deadlines …)
- Harmonized legal, policy and institutional framework – cooperation / concertation mechanisms
- Transparency principle accepted by all concerned parties (*1- data, information exchange, 2 - public information*)
- Trained technical/administrative staff
- Stakeholder involvement – educated users - WRM is everybody's business
- Knowledge of the water resource – common actions/shared tools (*data collection, monitoring, information system – DB/GIS, numerical / mathematical model, DST*)
- Take the problem at the right scale (defined by the water resource system)

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> The situation regarding transboundary aquifer systems (TBAS) …

- 274 transboundary aquifer systems known to date - underestimated
- Yet, very few treaties exist between states regarding TBAS.
  - Probably the best and most complete so far is the January 2008 Convention regarding protection, use and recharge of the Geneva aquifer – to follow up the June 9th 1978 agreement
- Yet, relatively few transboundary commissions, cooperation mechanisms, structures, …for or including GW are in place
  - International Scheldt Commission (Fr, Bel-Wallonia, Flanders)
  - The Estonian–Russian Joint Commission on Transboundary Waters for the Lake Peipsi water resource system (Aquifers-lakes-rivers) established in 1998.
  - Others, with a lesser scope for Nubian Sandstone Aquifer System, the North Western Sahara Aquifer System (NWSAS), …

> The situation for TBAS is way behind the situation for transboundary surface water (Basin Organisms, INBO, …)

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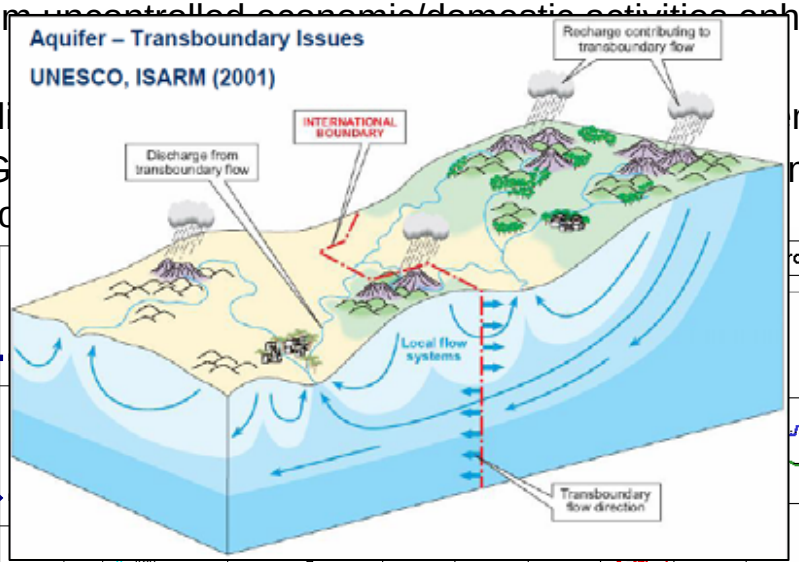
Mismanagement of groundwater systems – long lasting negative effects

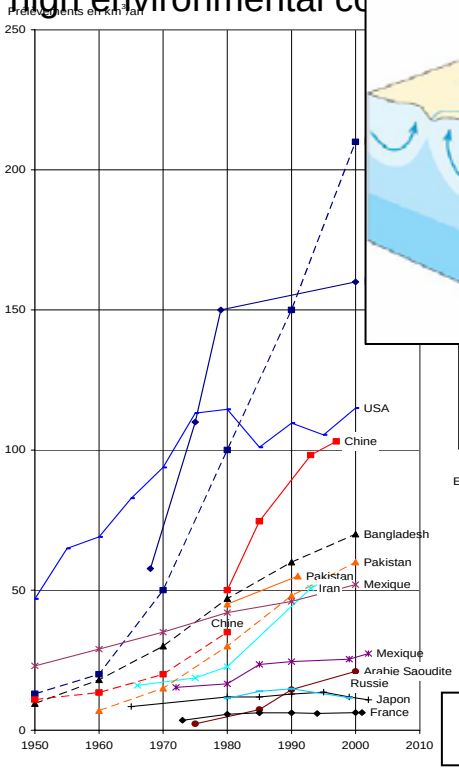
> Over-abstraction of GW lead to water resources depletion – GW level drop – and, in many cases, to GW quality degradation

> Pollution stresses from uncontrolled economic/domestic activities enhance water quality deterioration

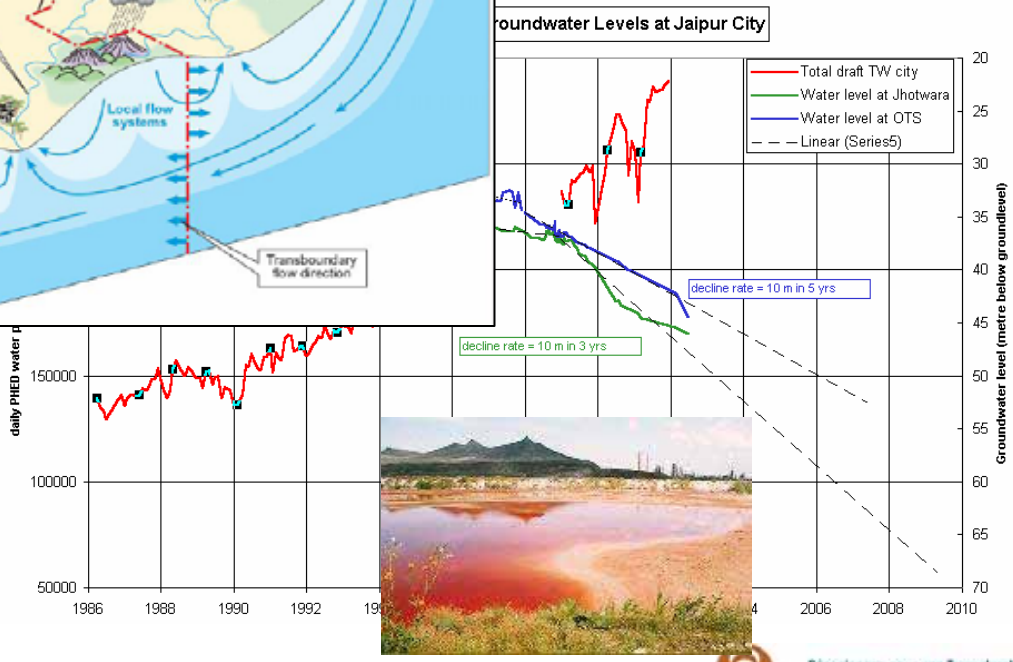
> Global change and cl… m worse …

> Mismanagement of G… mic development ..and lead to high environmental co…





Estimation de T. Shah, IWMI - 2004: trait discontinu



Evolution of GW abstraction in the second half of the 20th century – Margat's 2008

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> The situation WRT transboundary aquifer systems (TBAS) … is improving with recent initiatives …

- Several projects to enhance transboundary cooperation on specific aspects :
  - Ie : Lake Peipsi TBAS (FFEM, EU, BRGM, GTK, MoE/Estonia, GE/Russia) to set up (1) TB monitoring, (2) data/information exchange, (3) common water resources management model, (4) socio-economic analysis, (5) capacity building and (6) **reinforce the existing Joint Commission On TB Waters – IWRM and monitoring working groups,**
  - Ie : NWSAS and Iullemeden TBAS (GEF, FFEM, UNESCO/IHP, OSS, …) → Cooperation and/or Concertation mechanisms

- UNESCO/IHP ISARM Programme
- UN Resolution A/RES/63/124 Draft Article on TBAS – adopted in December 8th, 2008
- Guidebook for transboundary aquifer system management – "**Towards a joint management of transboundary aquifer systems",** (AFD, Académie de l'Eau, BRGM, OIEAU, UNESCO/IHP)
- **+**
- Africa : Groundwater Commission / AMCOW – 1st African Week March 2008
- Growing interest for TBAS from Funding Agencies (GEF, FFEM, AFD, …)

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> A suggestion - We know :

- **(1) Need to enhance IWRM for TB/shared water resources – to apply in the field the sustainable development concept,**
- **(2) Need to provide appropriate international institution/structure to manage TB/shared water resources and,**
- **(3) Basin Organisms already exist.**

>So can we use existing Basin Organisms, extend their scope and field of competence to GW ? The advantages :

- **Expertise/know-how on groundwater and surface water concentrated in one organism**
- **Implementation of IWRM facilitated**
- **Economically sound solution**

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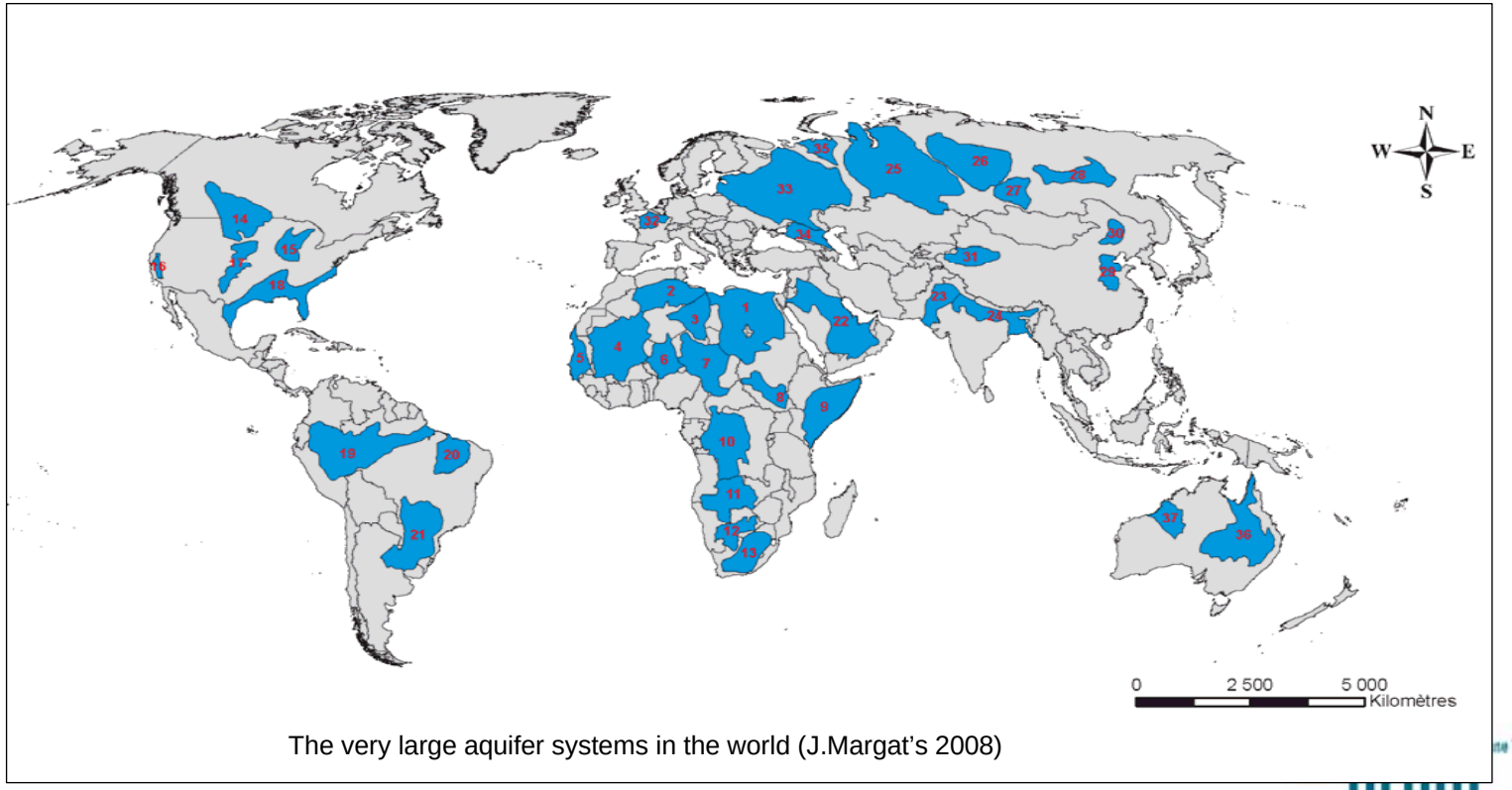
Mismatch between aquifer systems and river basin → need for redefining the scale of work : the River Basin for the surface water, groundwater catchment for groundwater ?

ex.: Most of the very large TBAS - Asia, Africa and Americas – do not often coincide with major river basins (ex: Nubian SS / Nile, Taoudeni-Tanezrouft and Iullemeden-Irhazer / Niger basin, SASS / ?, …)



The very large aquifer systems in the world (J.Margat's 2008)

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Thank you

for your attention

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