



AZRAQ OASIS RESTORATION JORDAN

2009 - 2010



Azraq Basin consists of three aquifer systems

1. The upper shallow fresh water basalt aquifer currently under the threat of salinization due to overexploitation.
2. The middle limestone brackish water aquifer (600 to 15,000 mg/l) aged more than 30,000 years
3. The deep sandstone aquifer which has low yields and poor quality water.

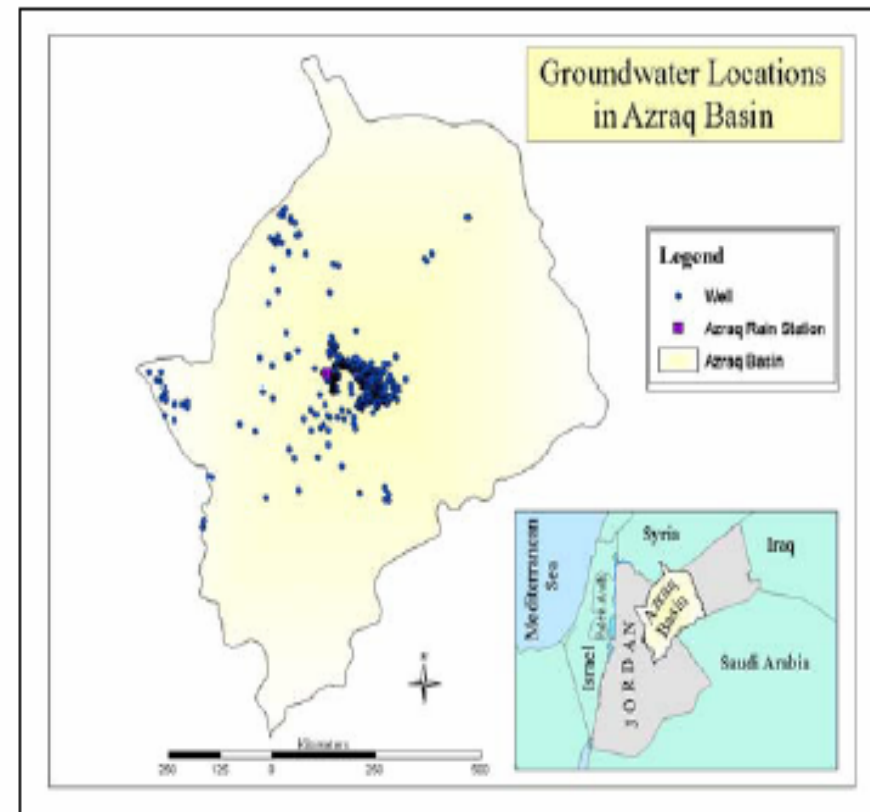
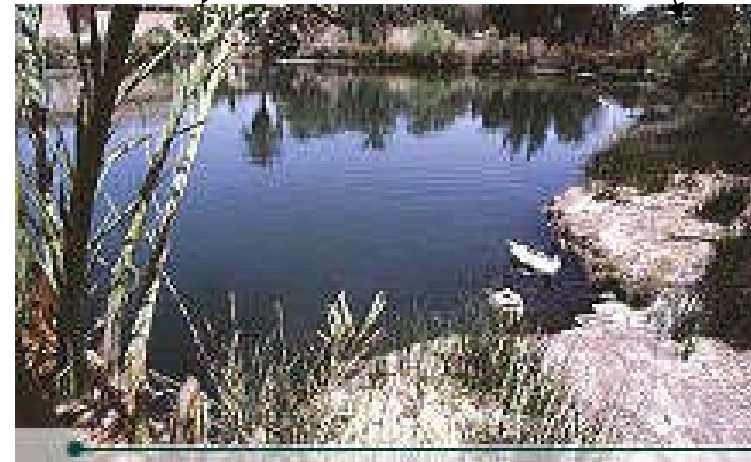
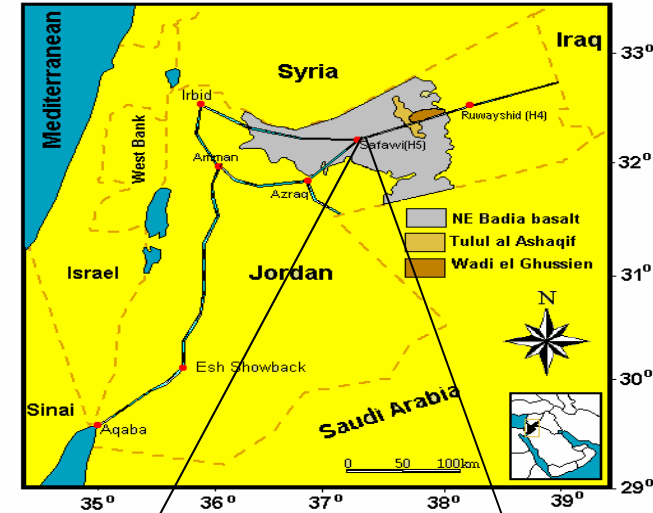


Fig. 1 Location of Azraq Basin in Jordan

AZRAQ OASIS

- ❖ Is a unique ecosystem in a fragile environment
- ❖ The remaining wetland is recognized as a RAMSAR Site
- ❖ Contains a wealth of biodiversity and habitats, and the richest habitat of all exists in its wetlands, which are extremely rare in the region.
- ❖ Was especially important for migratory birds, with up to a million birds utilizing the area during the course of a single spring migration.

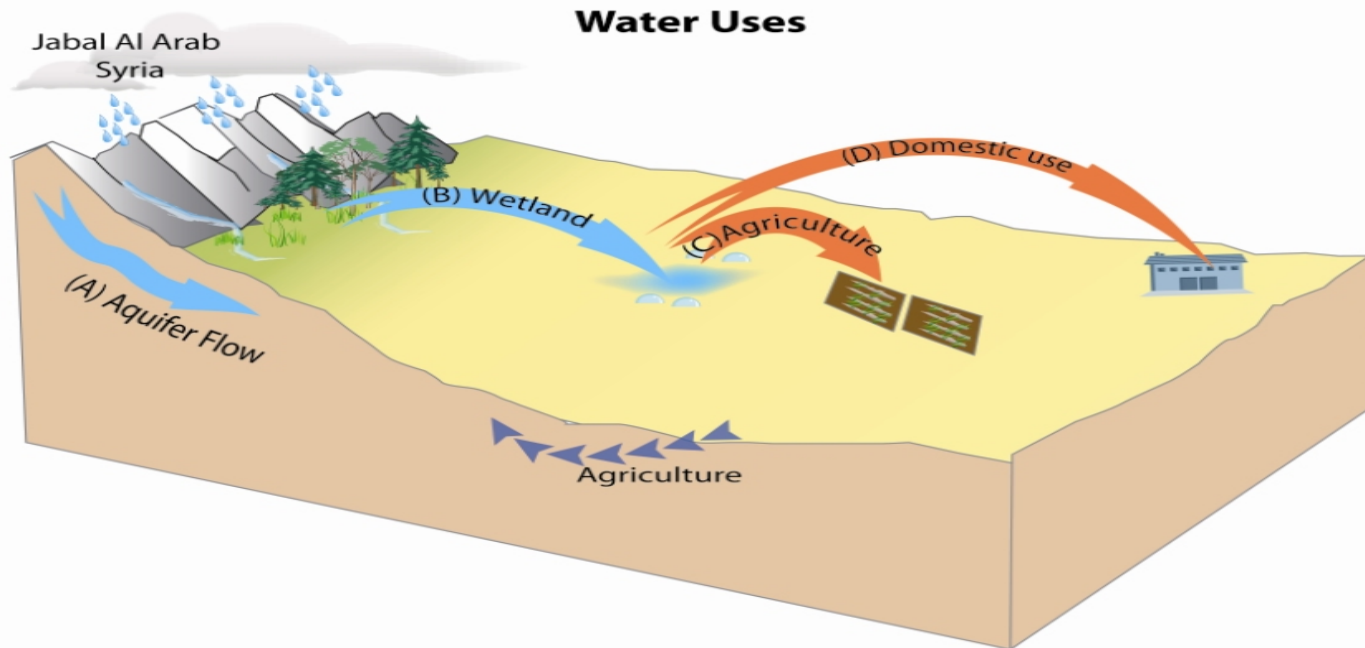


The Main challenging

$A = B + C + D$ (sustainable use)

$B + C + D > A$ (actual use)

Potential: $B + C = A$ if $C < 25\%$ for Amman/Zarqa



A is the Aquifer Flow

B is the wetland

C is for Agriculture use

D is for Domestic use

Azraq Basin/ Overview

Table 1 Total Abstraction from Groundwater and Springs

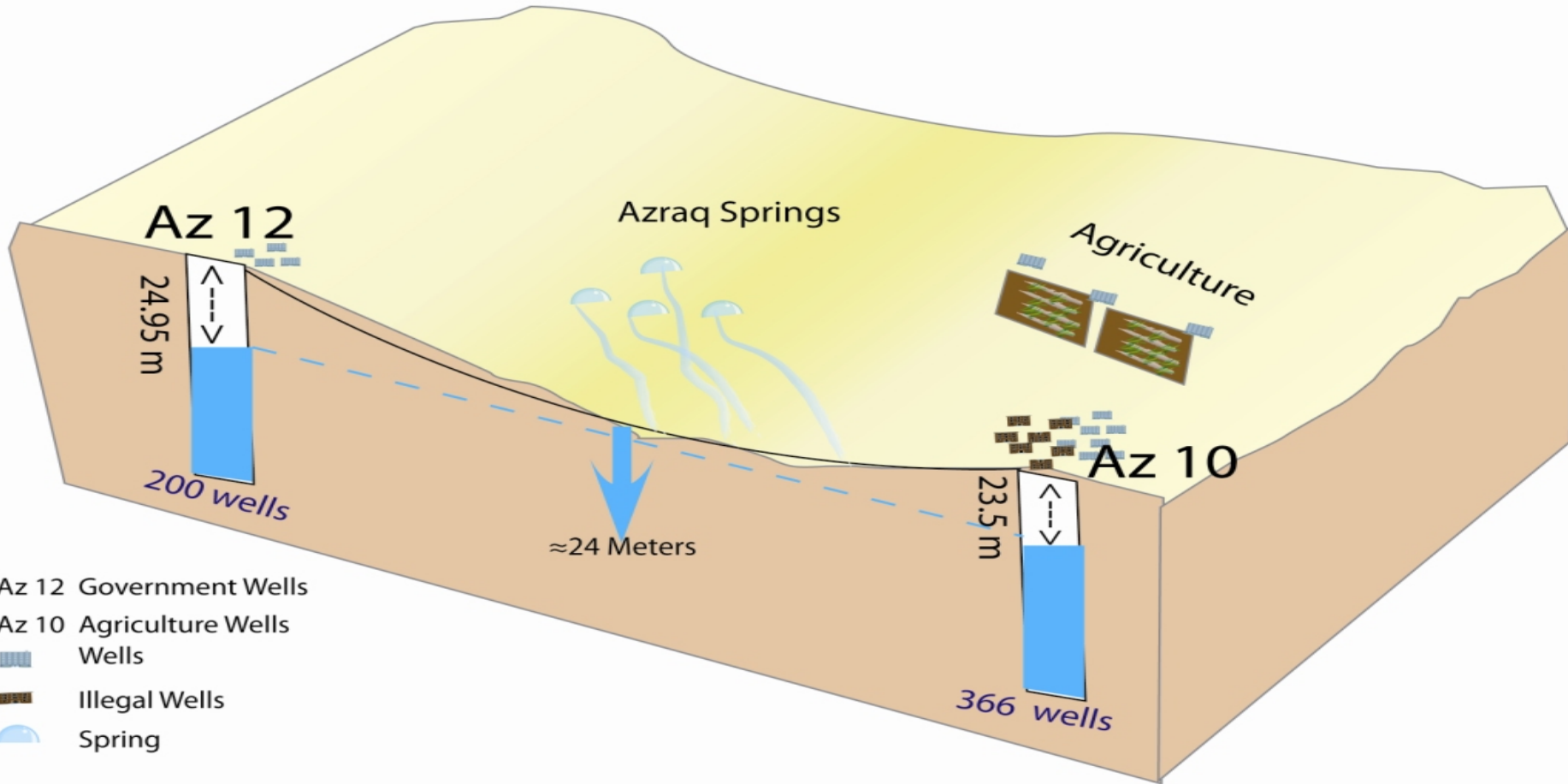
| Year | Government Well MCM | Springs MCM | Private Wells MCM | Total Discharge MCM |
|------|------------------------|----------------|----------------------|------------------------|
| 1983 | 9.50 | 10.57 | 1.50 | 21.57 |
| 1983 | 12.31 | 8.45 | 1.50 | 22.26 |
| 1984 | 14.36 | 7.27 | 2.00 | 23.63 |
| 1985 | 15.64 | 6.11 | 3.50 | 26.25 |
| 1986 | 13.72 | 3.57 | 4.50 | 21.79 |
| 1987 | 14.00 | 4.11 | 8.00 | 26.11 |
| 1988 | 22.35 | 2.15 | 12.00 | 36.50 |
| 1989 | 15.00 | 2.02 | 15.00 | 32.02 |
| 1993 | 13.00 | 0.00 | 30.20 | 43.20 |
| 1994 | 25.00 | 0.00 | 25.00 | 50.00 |
| 1995 | 24.12 | 0.00 | 26.50 | 50.62 |
| 1996 | 28.15 | 0.00 | 25.23 | 53.38 |
| 1997 | 26.83 | 0.00 | 26.86 | 53.69 |
| 1998 | 28.09 | 0.00 | 27.41 | 55.50 |
| 1999 | 27.20 | 0.00 | 29.25 | 56.45 |
| 2000 | 26.87 | 0.00 | 29.67 | 56.45 |
| 2001 | 26.46 | 0.00 | 31.31 | 57.77 |
| 2002 | 22.98 | 0.00 | 34.96 | 57.94 |
| 2003 | | | | 59.3 |

Safe abstraction – 20 MCM

But today ...

- 20 MCM go to cities
- 40 MCM go for agriculture
- 200% over-abstraction

Hydrological Problem





SO KEY CHALLENGES FACING THE BASIN

Over-pumping from the shallow aquifer has resulted in:

- ❑ a significant depression exceeding 20 meters on the groundwater table level;
- ❑ water quality deterioration, related to the intrusion of brine groundwater from the middle aquifer into the shallow aquifer;
- ❑ complete degradation of the organic soils surrounding the wetland.



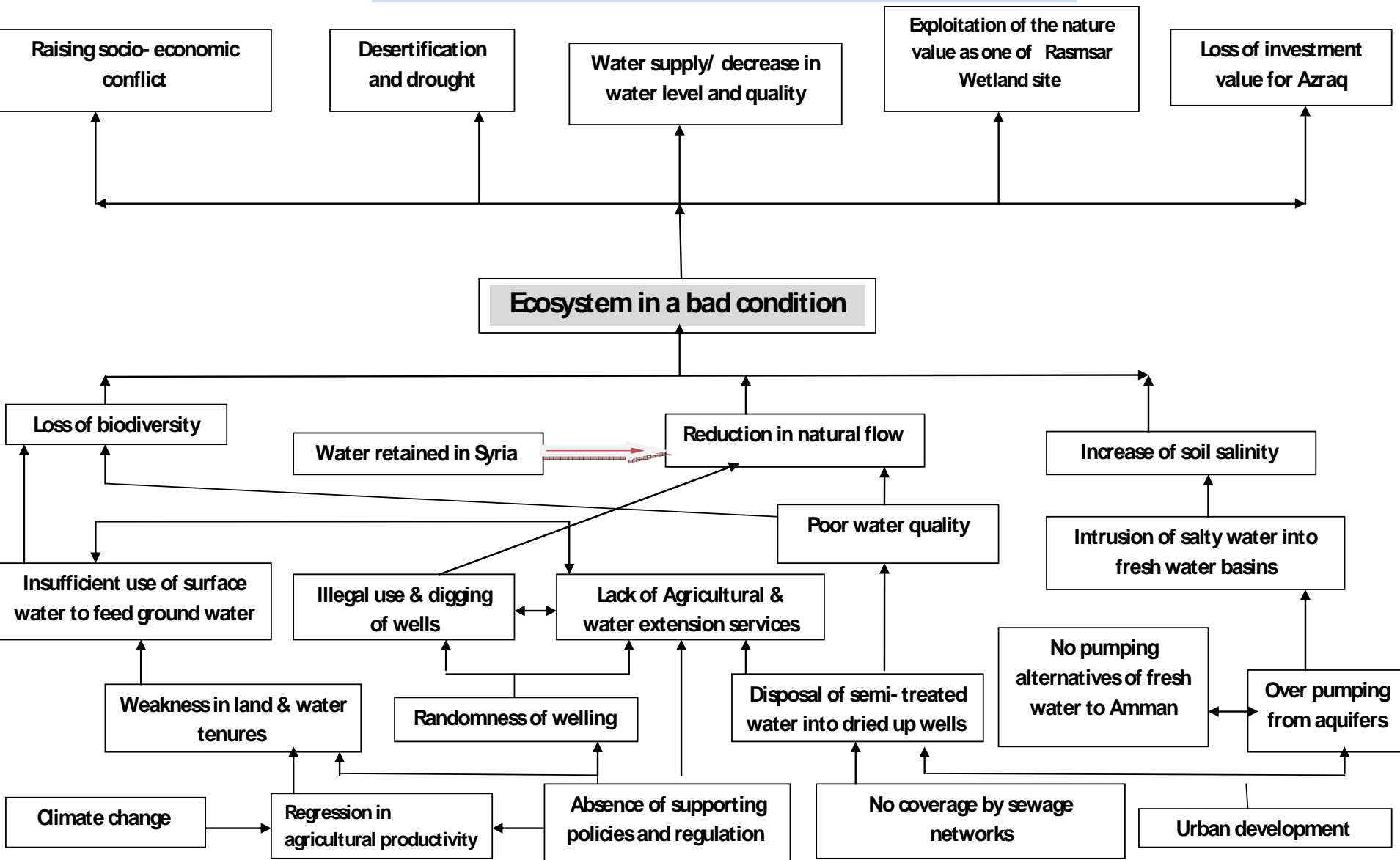
WHAT ABOUT PEOPLE IN AZRAQ

- Exponential loss of cultural and natural heritage and values
- Very little benefits
- Loss of belonging
- Weak influence and possible conflicts of interest



Results, poor trust and irrational expectations

Formulation Phase



SO WHAT IS MISSING!!!

- Lack of local participation
- No communication
- Poor transparency
- Conflicting interests
- No means for coordination
- Mostly sectoral centred



No platform for effective dialogue



SO IT'S TIME TO ACTION!!!



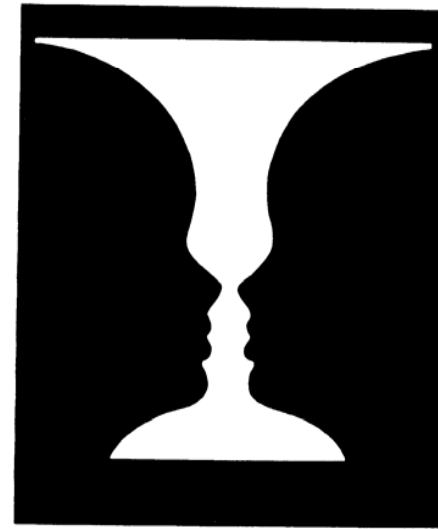


SYSTEMATIC APPROACHES TO IWRM IS THE WAY

Scarcities and different **perceptions**
about needs and urgency

create

conflicts of interests and priorities



Two perceptions are often two sides of same coin



INTEGRATED WATER RESOURCE MANAGEMENT





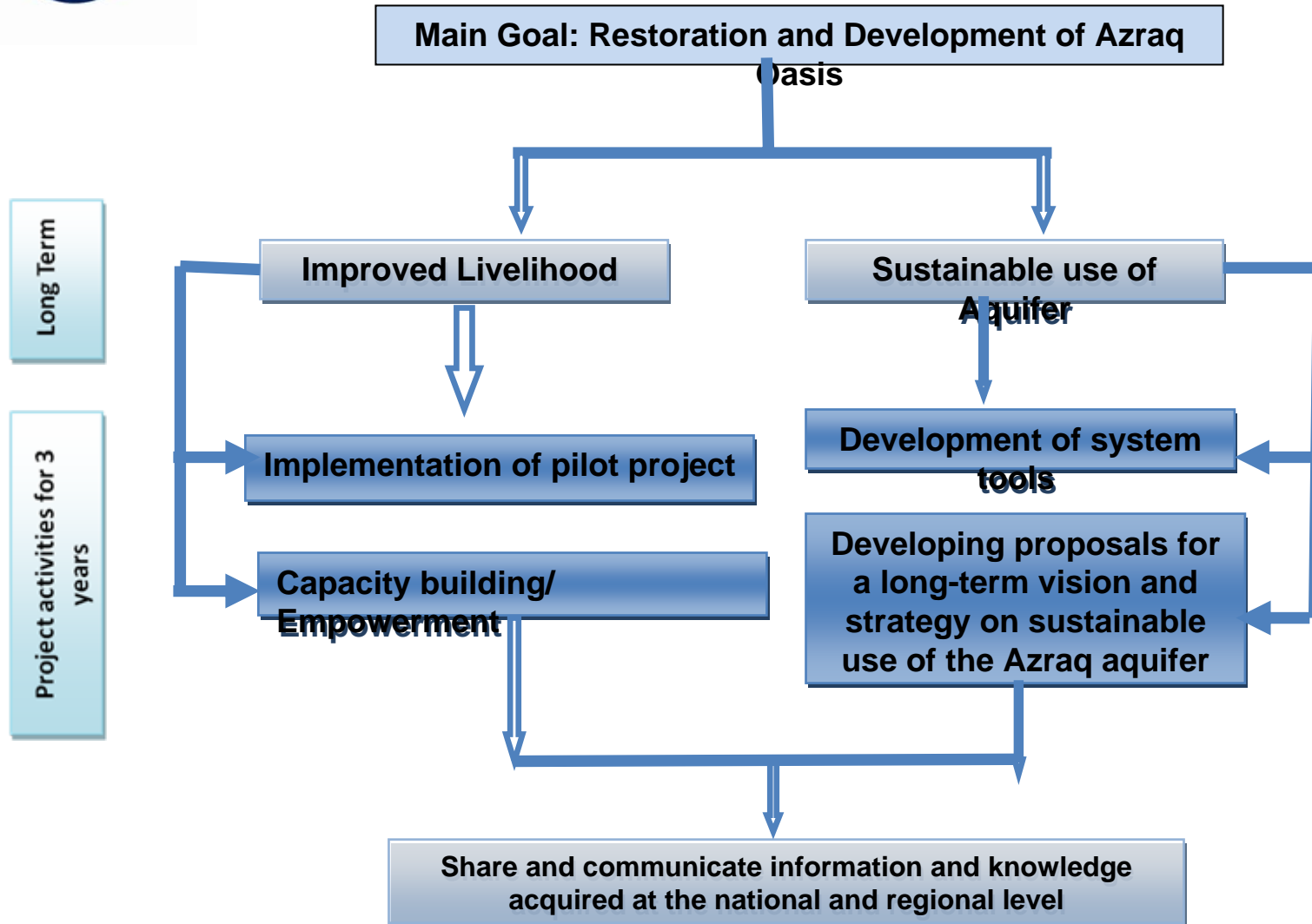
KEY PARTNERS

GO's:

- Ministry Of Environment
- Ministry of Water and Irrigation
- Ministry of Agricultural
- Ministry of Planning
- Ministry of Interior
- Azraq Municipality

NGO's:

- Arab Women Organization
- Badia Development and Research Center
- Royal Society for Conservation of Nature
- Mercy Corps

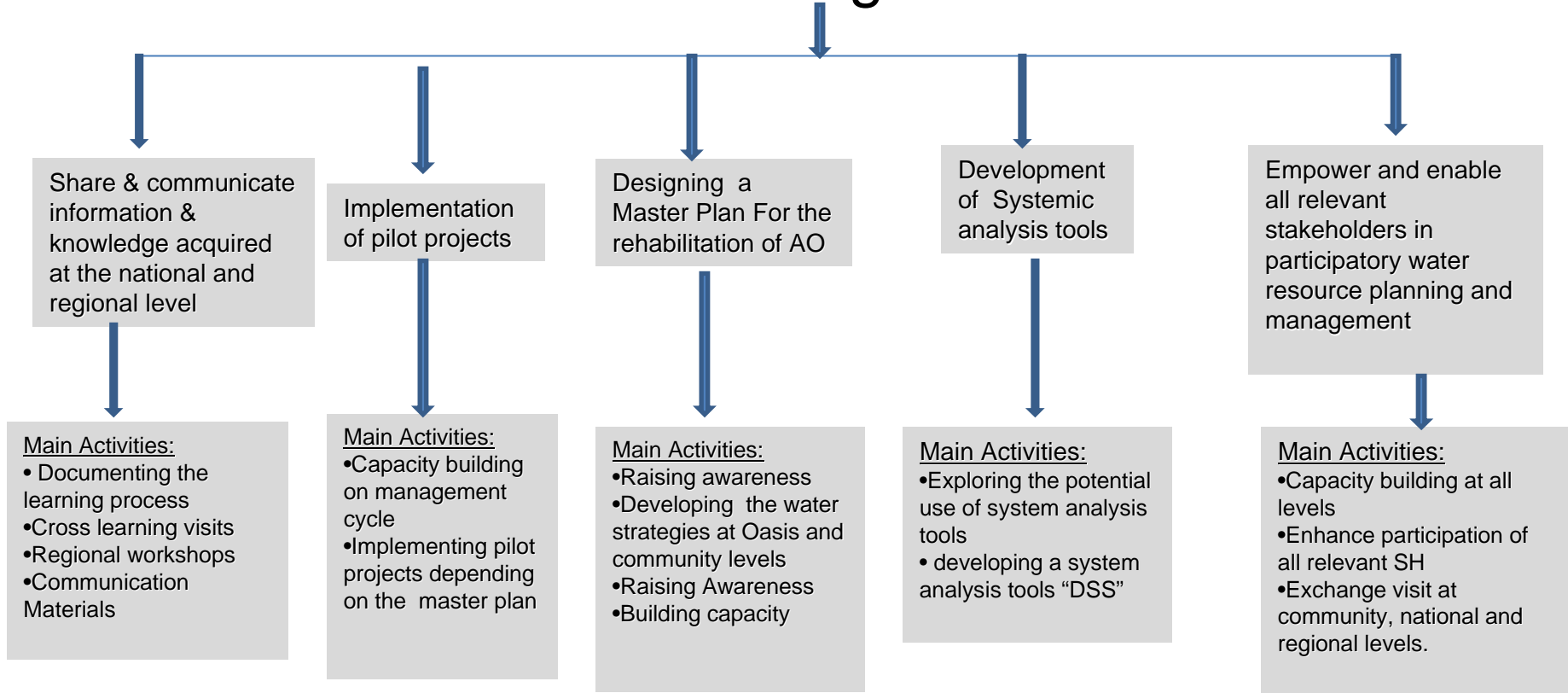




AZRAQ OASIS DIALOGUE

The Purpose is to build Capacities of Stakeholder in systemic and participatory approaches in planning, restoration, development and management of the restoration of Azraq Oasis

Through



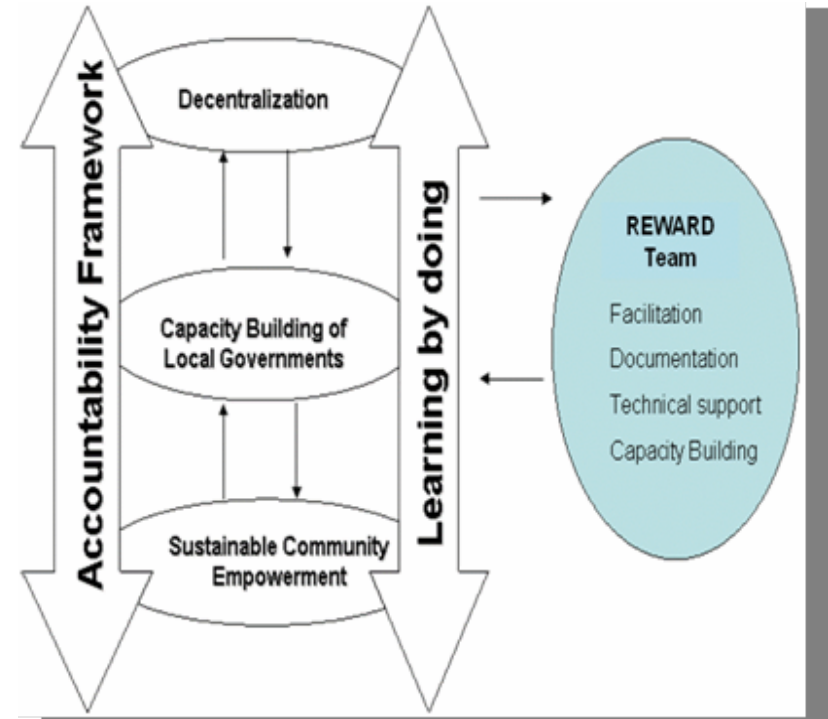
INTERVENTION

❖ Strengthening Local Government:

- To reach the stage of full decentralization the capacity building

❖ Empowerment local level:

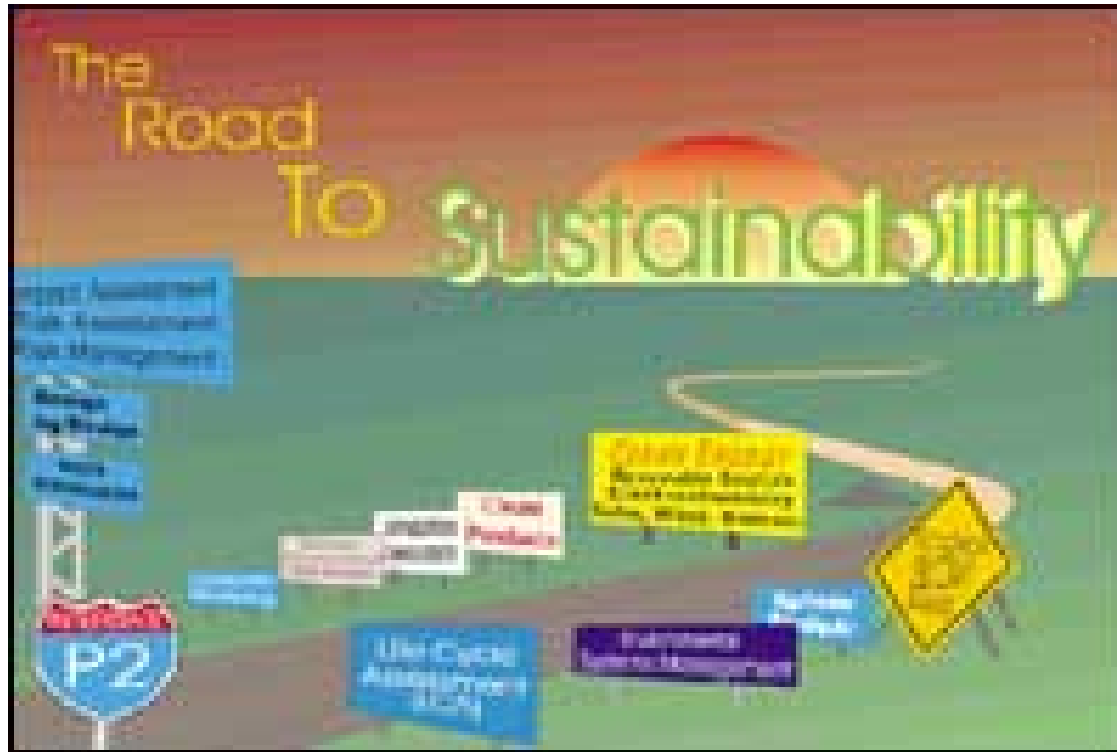
- Empowering the local community to be able to participate in the decision making process concerning their water resources.



Through building their accountability

It will probably gives further insights in decision-making and concerted actions processes, while deepening understanding on attitudes and believes of related Stakeholders

FINALLY TOWARDS SUSTAINABILITY DEVELOPMENT



Sustainability is a central premise if capacity building is understood as being more than simply training, but rather a process of allowing people to have influence over decisions and resources that affect their livelihoods in the long term.



**THANK
YOU**