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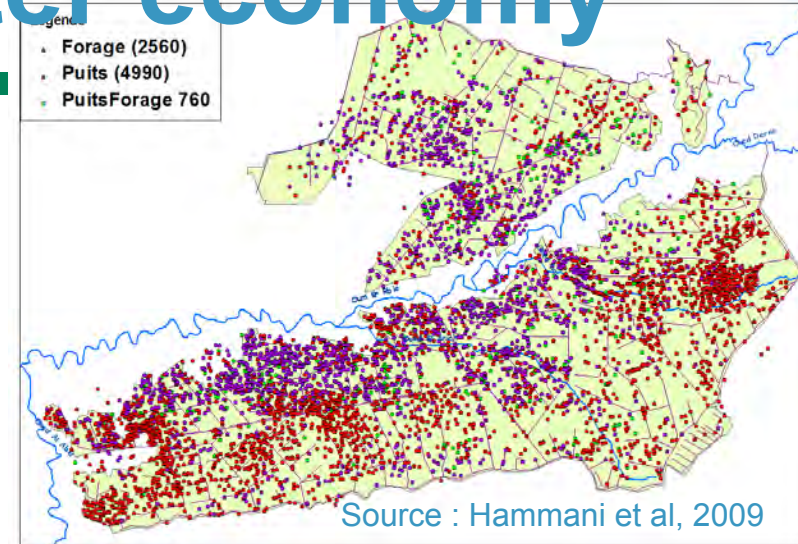
26<sup>th</sup>ERC & 66<sup>th</sup>IEC

# Liberation or anarchy ? The Janus nature of groundwater on North Africa's new irrigation frontiers

**M Kuper, N Faysse, A Hammani, T Hartani, MF Hamamouche, F Ameur**  
kuper@cirad.fr



# Emergence of North Africa's groundwater economy



- Groundwater use long masked by large-scale irrigation development (1920-1980) --> hydro-schizophrenia (Llamas)
- Occasional concern about groundwater use :
  - 1950 first problems of overexploitation of aquifers, especially in coastal areas or loss of artesianism
- Public tube-well schemes 1970s onwards
- Development of an informal 'groundwater economy' (1980 to date)
- Three irrigation situations:
  - New irrigation frontiers (waste land, pastoral land, rainfed areas)
  - Inside large-scale irrigation schemes
  - Inside or at the margins of community-managed irrigation schemes

# Emergence of a *groundwater economy* in countries with predominantly State-led irrigation development

## Two contrasting views:

1. 'Groundwater as liberation': farmers captured the irrigation initiative & 'liberated' themselves from *State water* → private groundwater use enables more intensive & productive agriculture
  2. 'Groundwater as anarchy': groundwater as a declining resource, overexploited by millions of individualistic farmers in absence of effective groundwater governance → > 10% of the world's food production depends on overexploited aquifers
- Both views acknowledge the weakness of State in controlling dynamics of groundwater economies; the first one praises this situation, while the second one laments it.
  - Is this really the case in North Africa?

# The official size of the groundwater economy

	<b>Algeria</b>	<b>Morocco</b>	<b>Tunisia</b>
Irrigated area (ha)	1 006 198	1 458 160	401 000
Groundwater use	883 004 (88%)	615 881 (42%)	252 000 (63%)
Overexploited aquifers	North: 23/38 South: all	57/99	71/273
Wells, tube-wells	144 050 wells 62 967 TW	100 000	138 000 wells 4 700 TW
Farmholdings	293 033		

Source: Kuper et al, 2015)

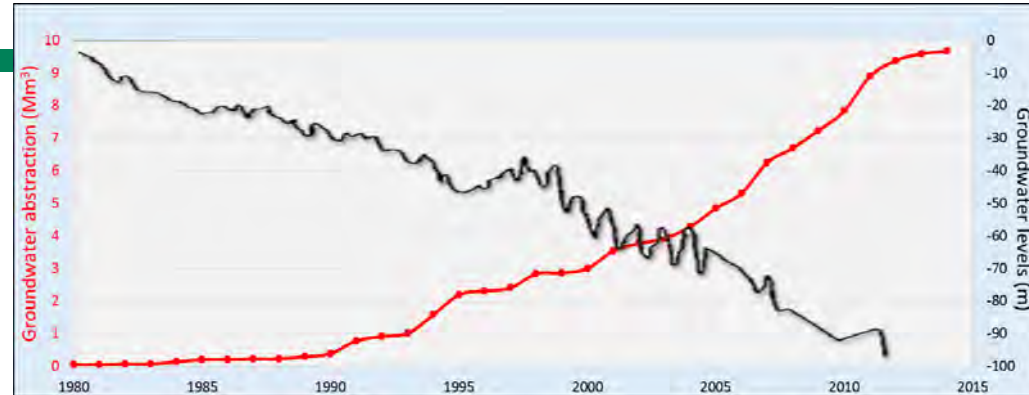
# The changing nature of the groundwater economy



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Source: Ameer et al, 2015



## From a protective resource to an “overexploited” economic good

- Access to groundwater first “liberation” from State water, especially in large-scale irrigation schemes, or from droughts
- The economic logic of the groundwater economy rapidly took over → intensive irrigated agriculture (fruits, vegetables)
- Change from wells to tube-wells: from dealing with scarcity to a perception of abundance, at least in the short term
- Rapidly declining groundwater tables
- Exclusions, wells running dry, while subsidizing the intensification of agriculture (tube-wells, drip irrigation)





# From a world of scarcity to relative abundance

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# The role of the state in North Africa

- In other contexts, State asked to “*get out of the way*’ of private initiative (T. Shah) → So what about North Africa ?
- Irrigated agriculture consistently and “*disproportionately prominent in national water allocation policy discourse*” in MENA (Allan, 2007)
- State provided water to substantial number of farmers through public tube-wells (30% Tunisia)
- Considerable efforts to provide basic infrastructure in rural areas (electrification, roads)
- The “tolerant” State allowed private sector to appropriate access to groundwater resources in a negotiated process between the State and the private actors → increasing number of tube-wells registered by river basin agencies
- Direct & indirect subsidies (tube-wells, energy, drip irrigation, fruit trees)
- Protagonists of groundwater economies in peril sooner or later call on the State to find solutions: desalinization, dams etc.



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# The multiplicity of state intervention

- Encouraging agricultural intensification
- Maintaining social peace
- Protection of water resources

→ groundwater is an “*enabler of important rural socio-economic transition*”, but which is exploited by “*short-term water-using practices*” and presided over by *passive political economies* (Allan, 2007)





# Towards privatization of groundwater?

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- Lifeline for farmers engaged in irrigated agriculture, saving farmers from structural droughts
  - Intensify farming systems, creation of jobs
  - Different States continue promoting irrigated agriculture as a national priority and a credible rural development option, for as long as the overexploited aquifers will continue to provide water
  - Groundwater economy emerged during State disengagement following structural adjustments in the 1980s
- tempting to define transition from State-led surface irrigation development to private groundwater exploitation, amounting to a “privatization” of the resource



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# However

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- State remained (and was held) legally but also morally 'responsible' for groundwater by users who had become dependent on groundwater
- It intervened in many (in-)direct ways in what at first sight may appear to be private exploitation of groundwater. When private wells ran dry, the State even looked for additional water resources for the rolling groundwater economies, ignoring water demand management options

# So, liberation or anarchy?

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- No anarchy but negotiated disorder: different interests of the farmers, the private sector, and the State continuously realigned through various (in)formal channels
- Groundwater continues to be overexploited in the short- or medium-term in the interest of those who exploit groundwater, of service providers to the booming groundwater economies, and of the permissive State looking for food security, social stability, and economic development
- Groundwater ‘liberated’ farmers only partially from *state water*. It concerned only minority of farmers who were quickly confronted with other challenges, including overexploitation or harsh agricultural markets
- In times of crisis, these farmers often turned towards the State for support
- Wider implications of this study relate to giving more visibility and importance to the short and medium-term effects of current dynamics & impending decline of groundwater economies to create “space for change”