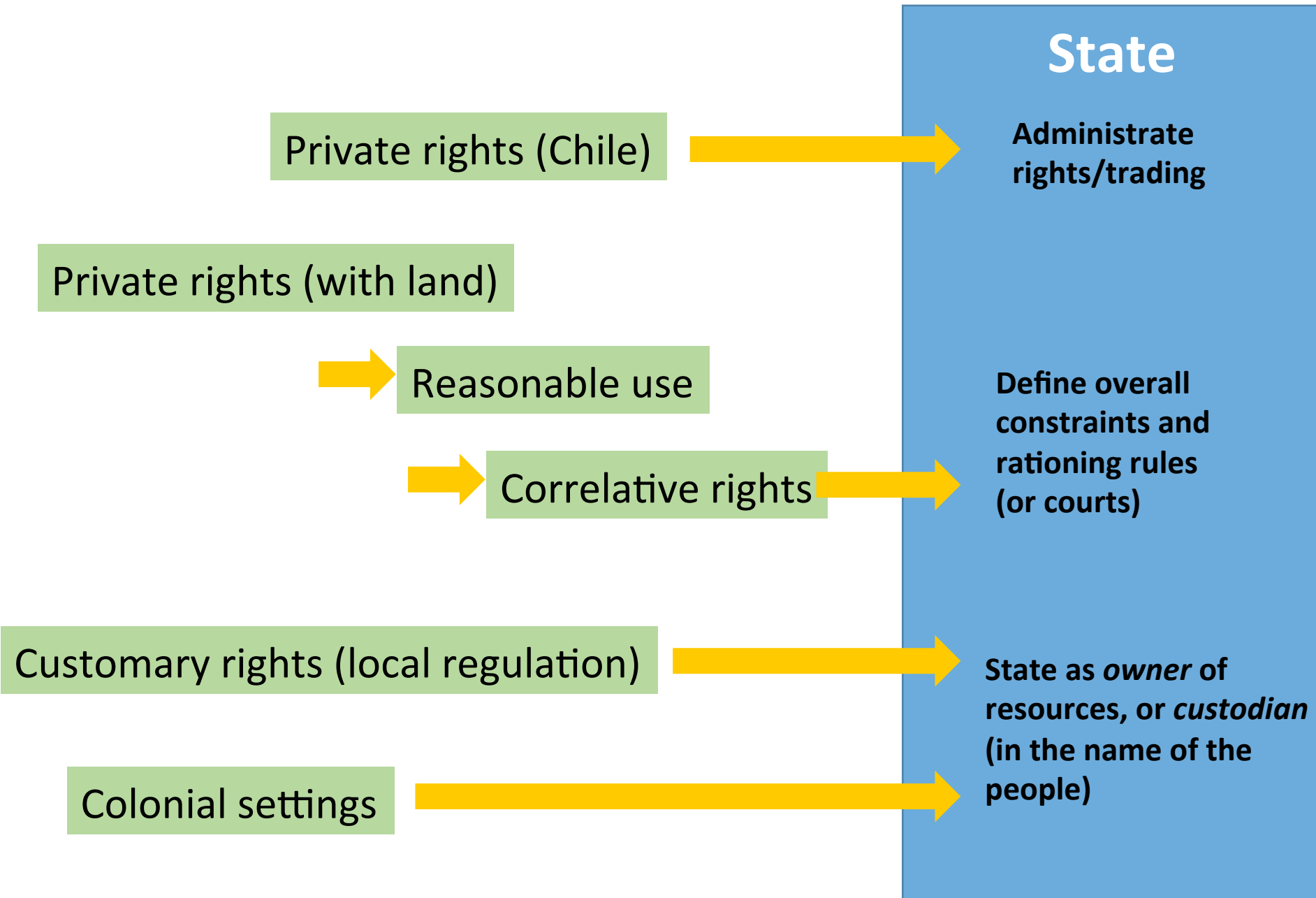


States' Groundwater Regulations: they bark but do they bite?

François Molle, Alvar Closas
IWMI/IRD

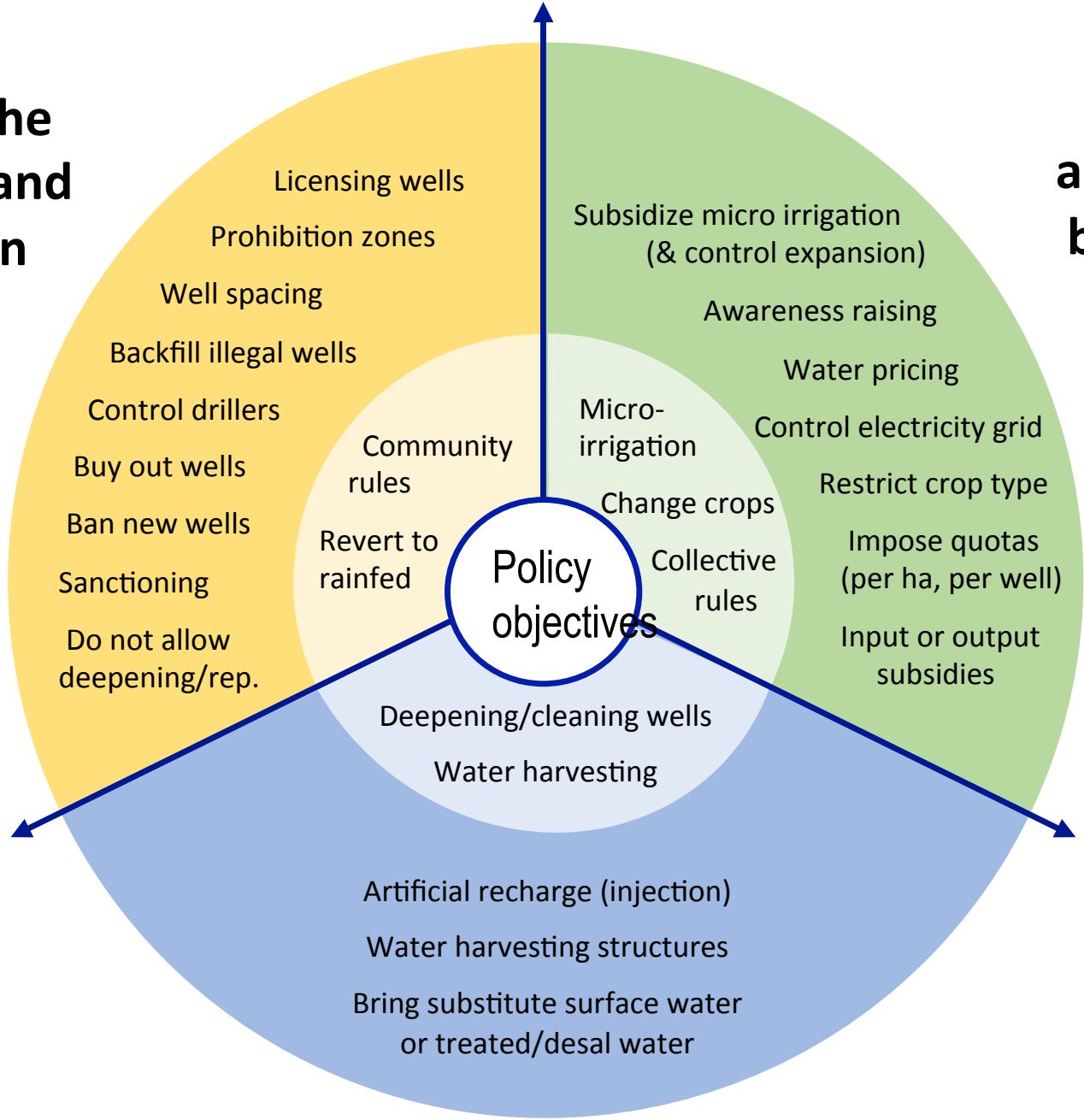


Groundwater ownership



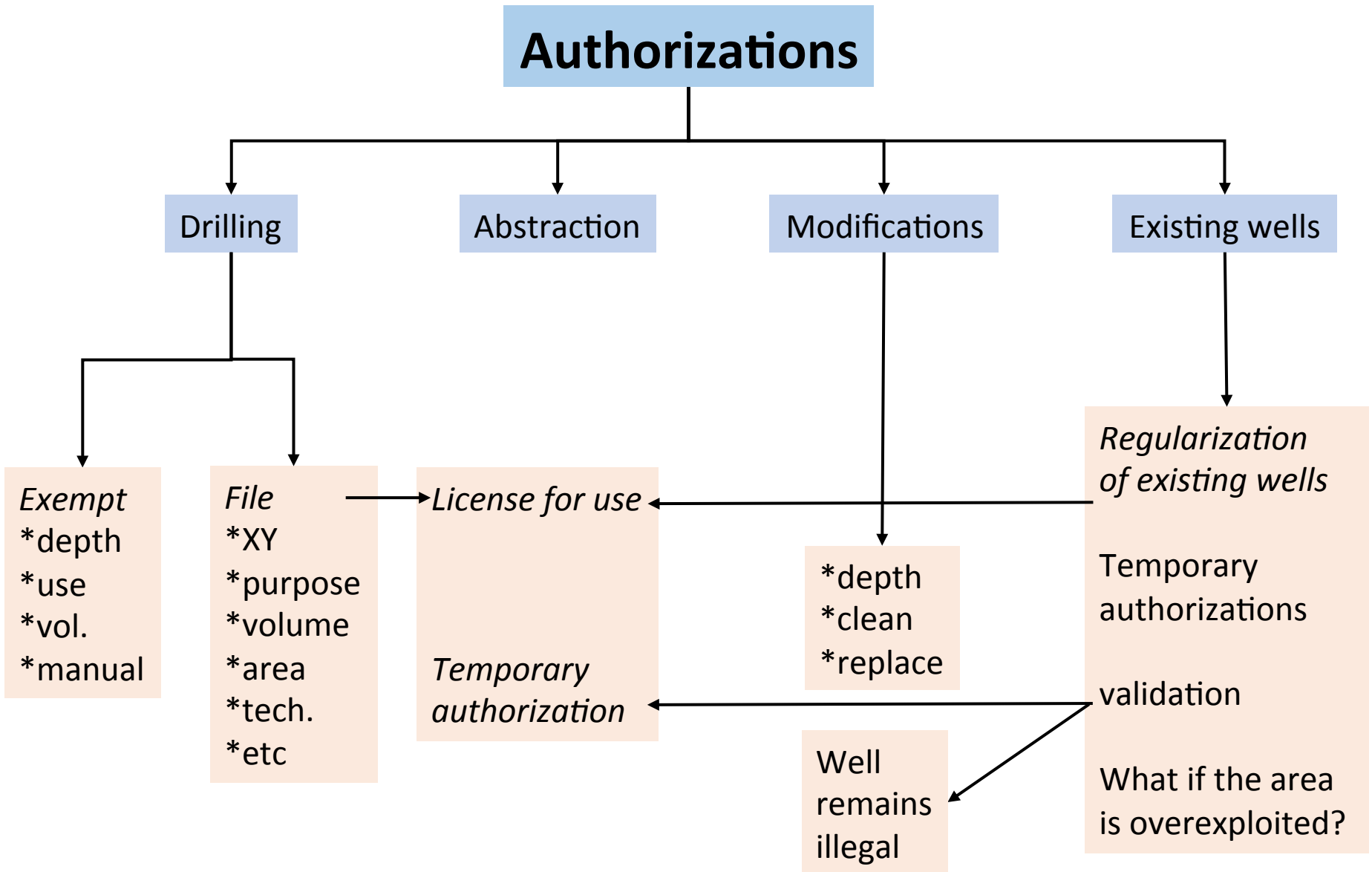
Control the number and expansion of wells

Control abstraction by *existing* wells

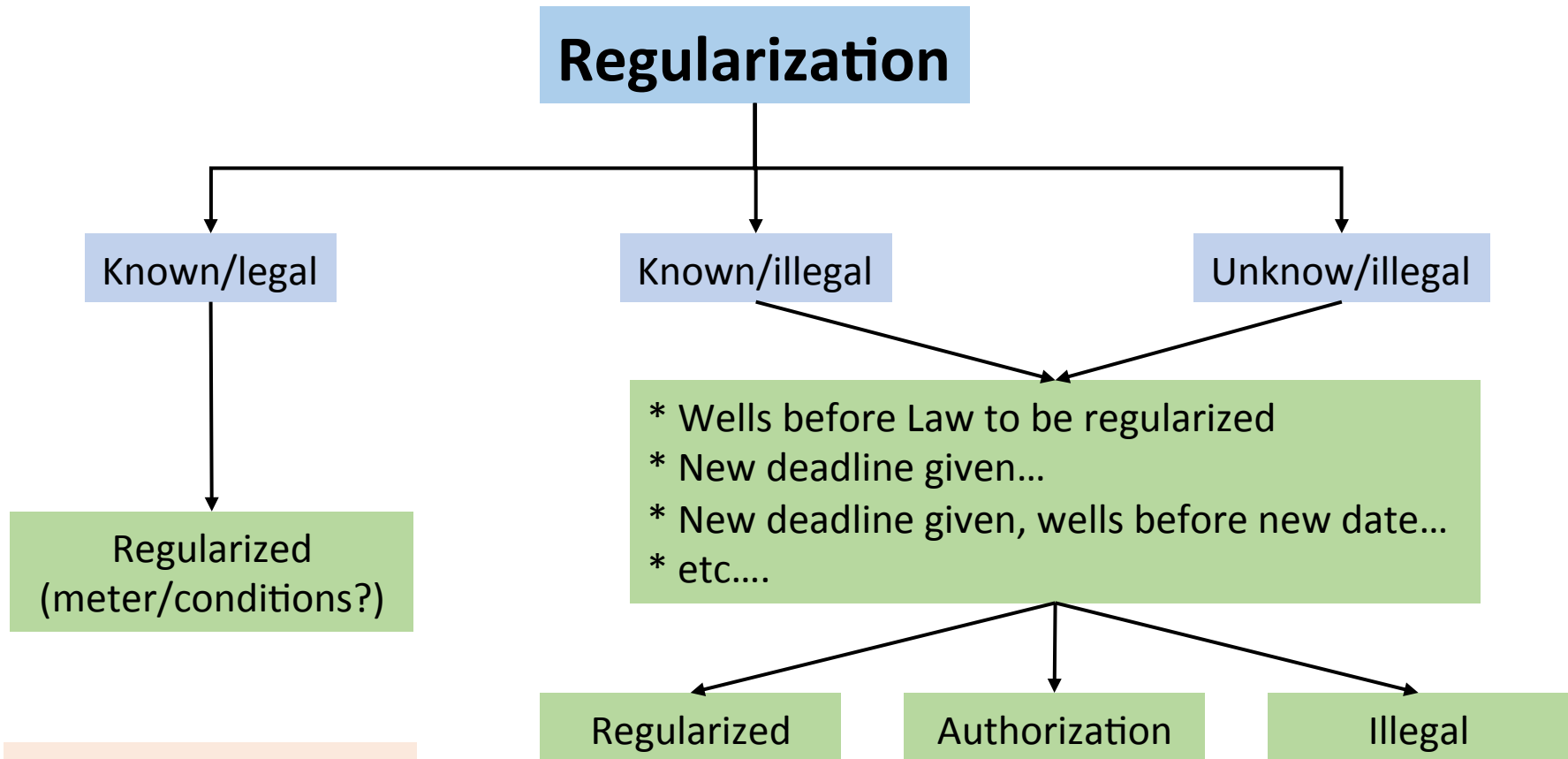


Manage supply

1. The state and the control of the number of wells



Regularization of existing wells



reluctance

- *have to pay
- *put meter
- *fear charges
- *will have restrictions

- *verify claims on the ground
- *put meters
- *what if the area is overexploited (hydrology,..)
- *huge logistic problems
- *political pressures
- *court cases (justice)

Logistic nightmare : examples

Spain: 1985-1988 regularization period: 15% of 'success' extended 2001. Nearly 40,000 wells exist in the Western Mancha aquifer of which only 17,000 had been registered at the Guadiana River Basin Authority in 2008 (Martinez-Santos et al.)

South-Africa: 1998 regularization period;
Only 20% of applications processed in 2012; Permits distributed in only two basins; overallocation of water

Morocco: 1998- regularization period for wells before 1995; 2009: three years for wells before 2009, extended to 2015
Total of existing wells unknown; more unregistered wells than registered.

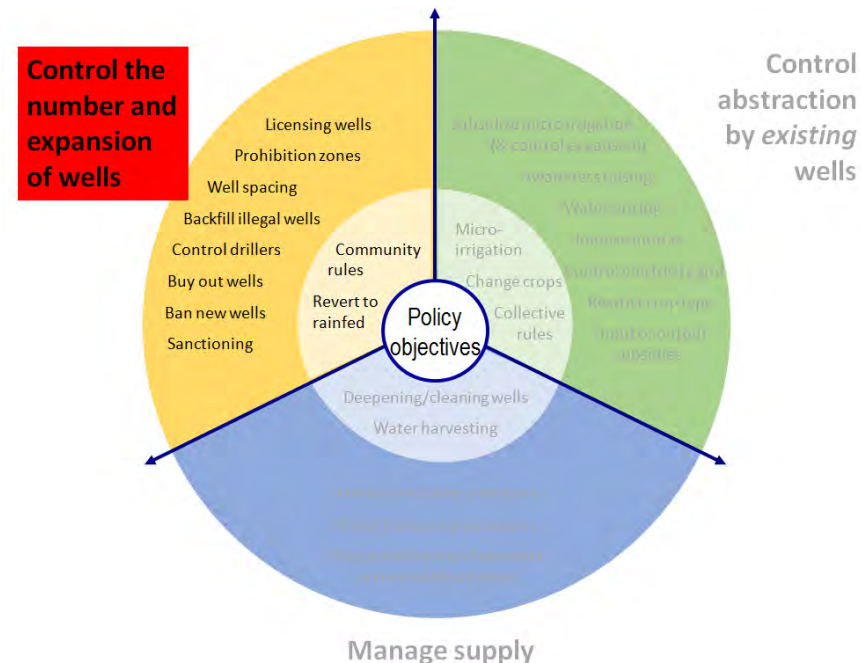
France: Roussillon Aquifer (south of France); only 10-20 of wells being dug are officially declared (Montginoul et Rinaudo)



Regularization often leads to **over-allocation of permits**
(and to the realization that the resource is **already over-allocated**)
Australia, South Africa, Chile, Mexico, Spain, US...

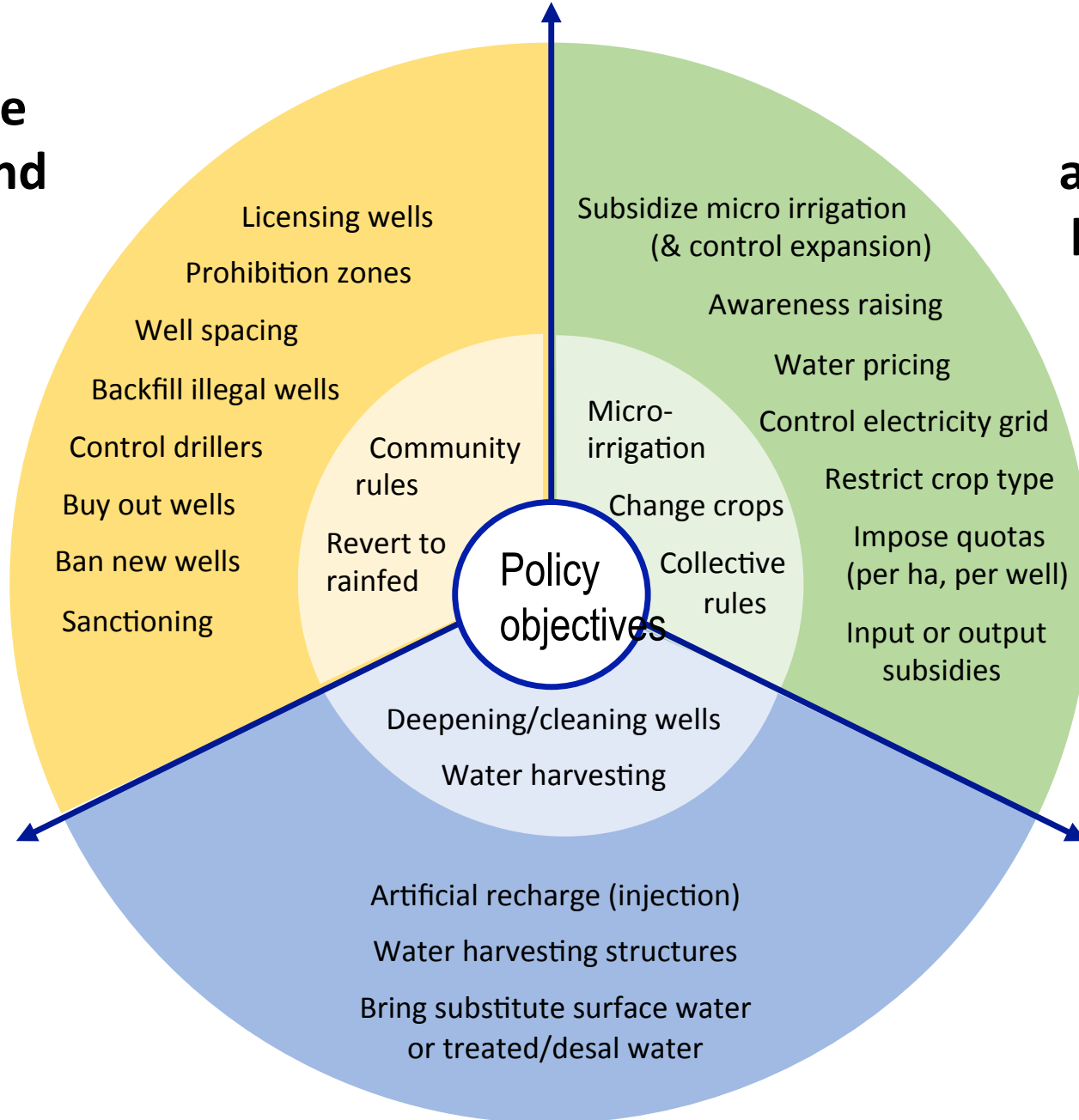
Controlling the existing number of wells

- ✓ Prohibition zones
- ✓ Backfill illegal wells
- ✓ Do not allow deepening/maintenance/transfer
- ✓ Buy back the wells (or the corresponding right)
- ✓ Control drilling companies
- ✓ Ban on new wells
- ✓ Heavy sanctions for wrongdoers



Control the number and expansion of wells

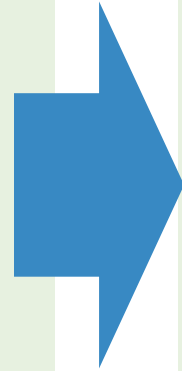
Control abstraction by *existing* wells



Manage supply

State control: with or without teeth?

- Licensing
- Metering
- Pricing
- Well spacing
- Quotas
- Drip irrigation



- Illegal drilling, corruption
- Meter broken/tampered with/bypassed
- Fees not recovered/bribes
- Inadequate; control weak
- Penalties not applied; costly and hard to monitor
- Expand the area

Why is enforcement so difficult?



Why is Political will lacking?

Regulation exists, but where is the enforcement??

	<i>Well licensing (permits)</i>	<i>Metering</i>	<i>Volumetric pricing (tariffs)</i>	<i>Abstraction quotas</i>
Algeria	Yes (1999)	No	No	No
Bahrain	Yes (1980)	Yes	Yes	Yes
Egypt	Yes (1984)	No	No	No
Jordan	Yes (2002)	Yes (2002)	Yes (2002)	No
Lebanon	Yes (1926)	No	No	No
Morocco	Yes (1995)	Yes (1995)	No	No
Oman	Yes (1990)	Yes (1990)	No	No
Saudi Arabia	Yes (1989)	-	No	No
Syria	Yes (1958)	Yes (2000)	Yes	Yes
Tunisia	Yes (1975)	No	Yes	Yes (2000)
Abu Dhabi (UAE)	Yes (2006)	Yes	No	Yes
Yemen	Yes (1998)	No	No	No

“In my country we have excellent water laws but the problem is implementation and enforcement”

Failure of state regulation

❖ **Number of groundwater users**



Texas

Large and well identified farms and owners

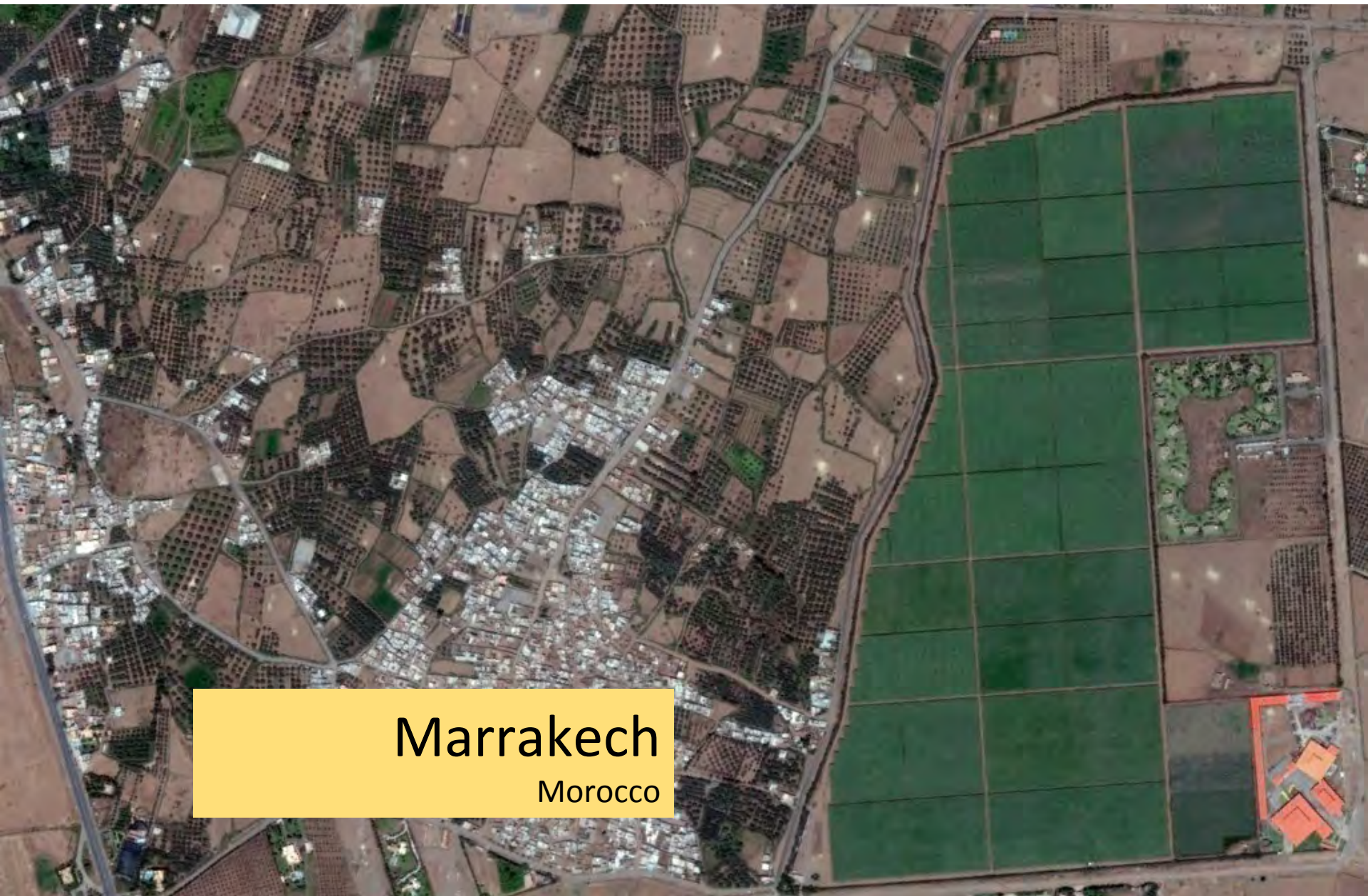


India

Small plots and holders,
complex land tenure

Failure of state regulation

- ❖ Number of groundwater users
- ❖ Lack of staff and budget for groundwater administration
- ❖ Monitoring on the ground and enforcement too costly
- ❖ The problem is invisible; changes are sometimes slow; aquifers may recover
- ❖ Policy dilemma: poverty alleviation, livelihoods, social problems
vs
restrict wells and use
- ❖ Short term political mandates and interests
vs
tough decisions (only in crisis time)
- ❖ Agriculture-Water policy contradictions
- ❖ Some powerful (agricultural) investors are also pumping



Marrakech

Morocco

Failure of state regulation

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- ❖ Lack of staff and budget for groundwater administration
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In sum: logistic/practical problems

and

lack of political will



Regulations may
"bite the boot"
but
State power **should not**
be overstated
in such a complex
issue

The temptation
for the state is to
harden
sanctions but this
may turn them
non credible



France: the non-declaration of a well can represent a fine of 15,000 Euros

Elinor Ostrom (2000):

The worst of all worlds may be one where external authorities impose rules but are only able to achieve weak monitoring and sanctioning

Unrealistic reforms ***not only fail***: they damage trust and state authority and make further efforts less likely to succeed



When ideology creeps in

Water 'rights' reforms are often intended out of unqualified application of 'best practices', with little understanding of contexts, hydrology and complexity, and possible equity impacts

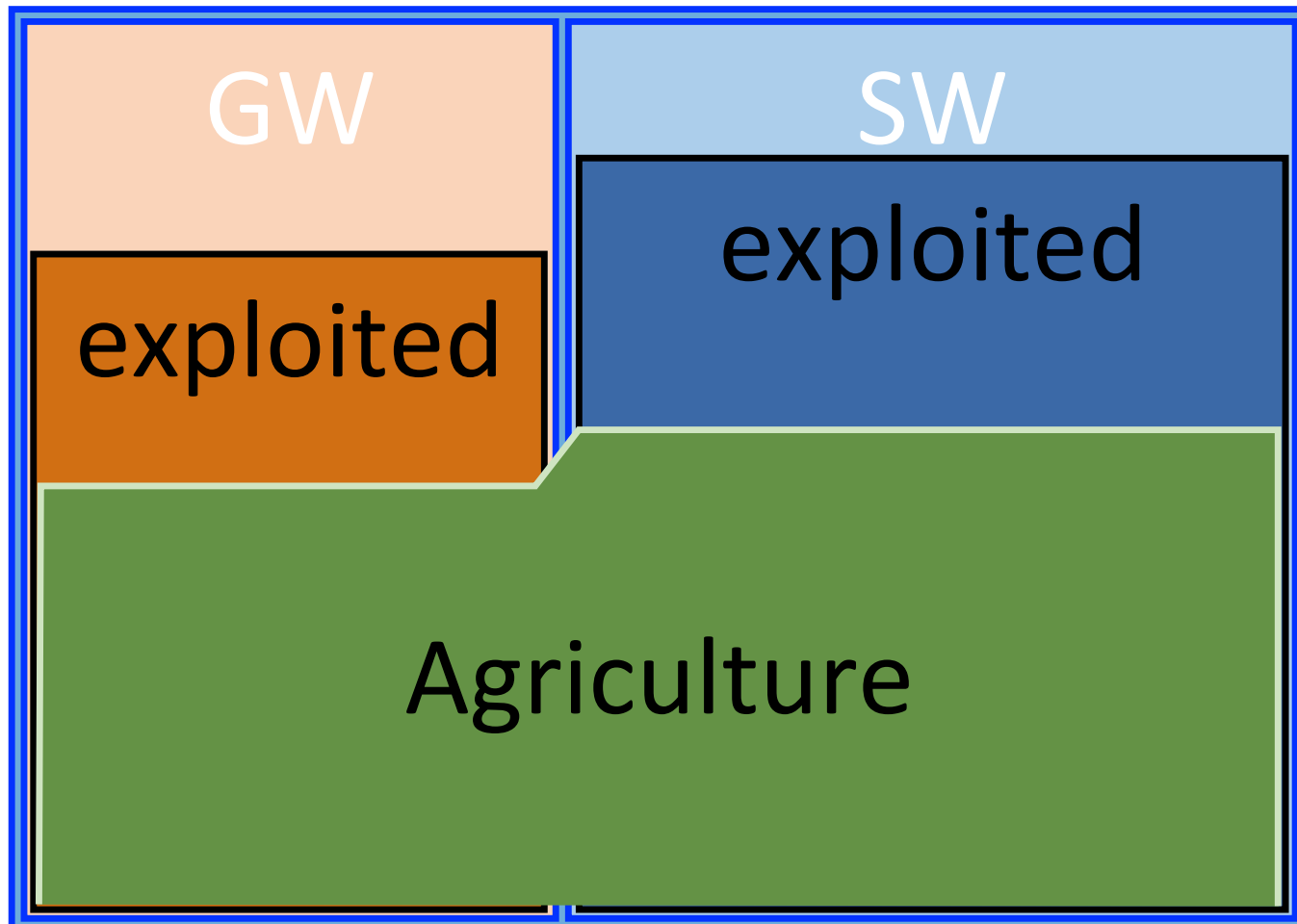


Boelens et al. (2002):

It is an instrumental myth to assume that the intended changes in water management can be made *only* by formulating and legislating official rules

Country's water context

Annual renewable resources





Thank you for your attention