

# Law and Policy Regime for Sustainable Groundwater Regime in Pakistan

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I.B. TAURIS

An aerial photograph showing a vast, flooded landscape. A narrow, winding strip of land, likely a dike or a natural ridge, runs horizontally across the middle of the frame. This strip is densely packed with small, simple structures, possibly tents or small huts, and some trees. The surrounding areas are completely submerged in water, with patches of green vegetation visible above the surface. The water appears murky and brown. The overall scene conveys a sense of isolation and vulnerability in the face of rising water levels.

# WATER RESOURCE

## MANAGEMENT IN A VULNERABLE WORLD

### THE HYDRO-HAZARDSCAPES OF CLIMATE CHANGE

# Groundwater Regime in Pakistan

- Dominant GW related Acts:
  - Canal and Drainage Act 1873
  - The Balochistan Groundwater Rights Administration Ordinance 1978
- In the Indus River Valley a gravity based surface irrigation system, where up to 80% of the crop water needs are satisfied by groundwater
- Two Pakistans 64% fresh and 36% saline groundwater
- Highland Balochistan, Karez system in peril
- Major unsustainable groundwater mining in Balochistan

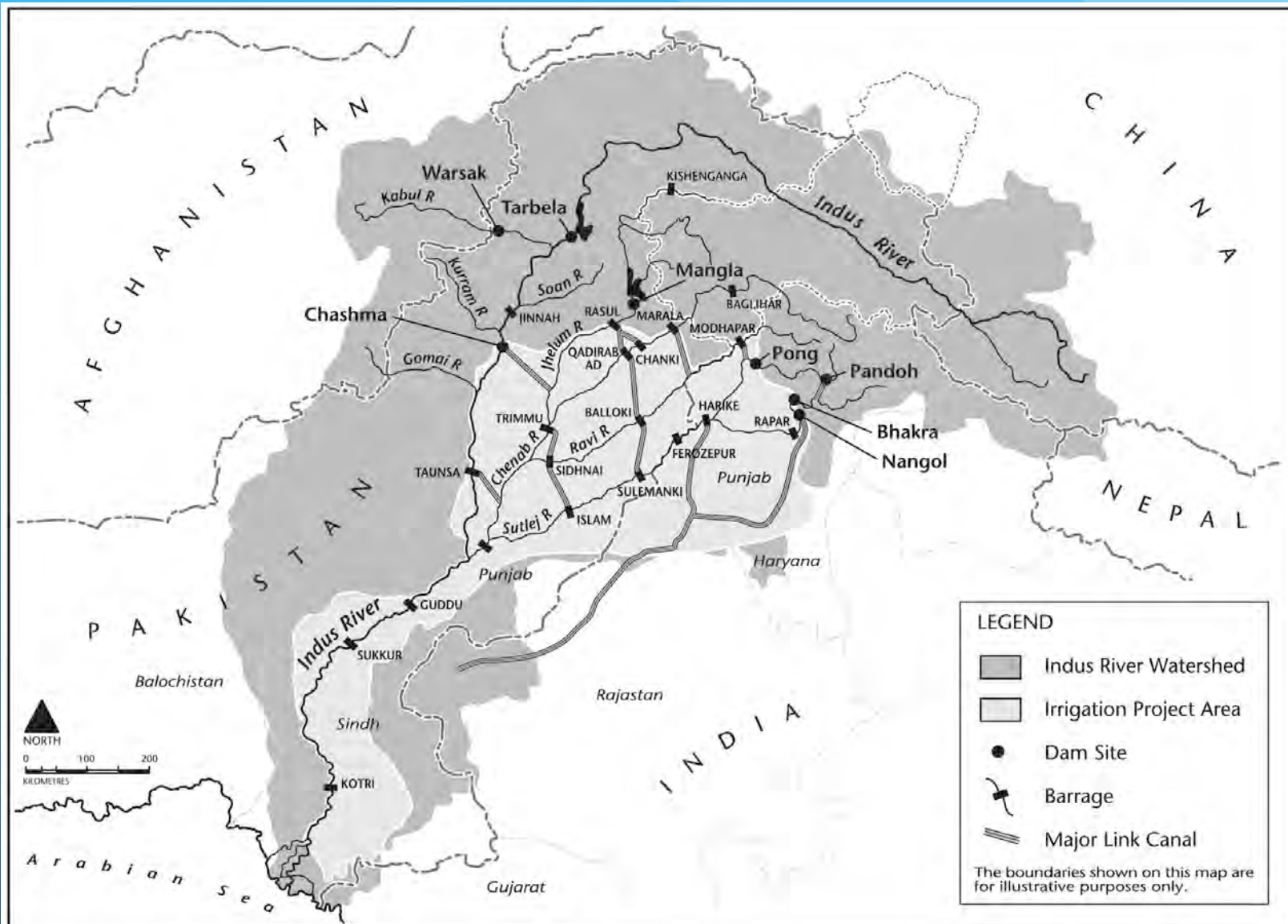


Figure -- Indus Basin and its Major Infrastructure

# Canal and Drainage Act 1873

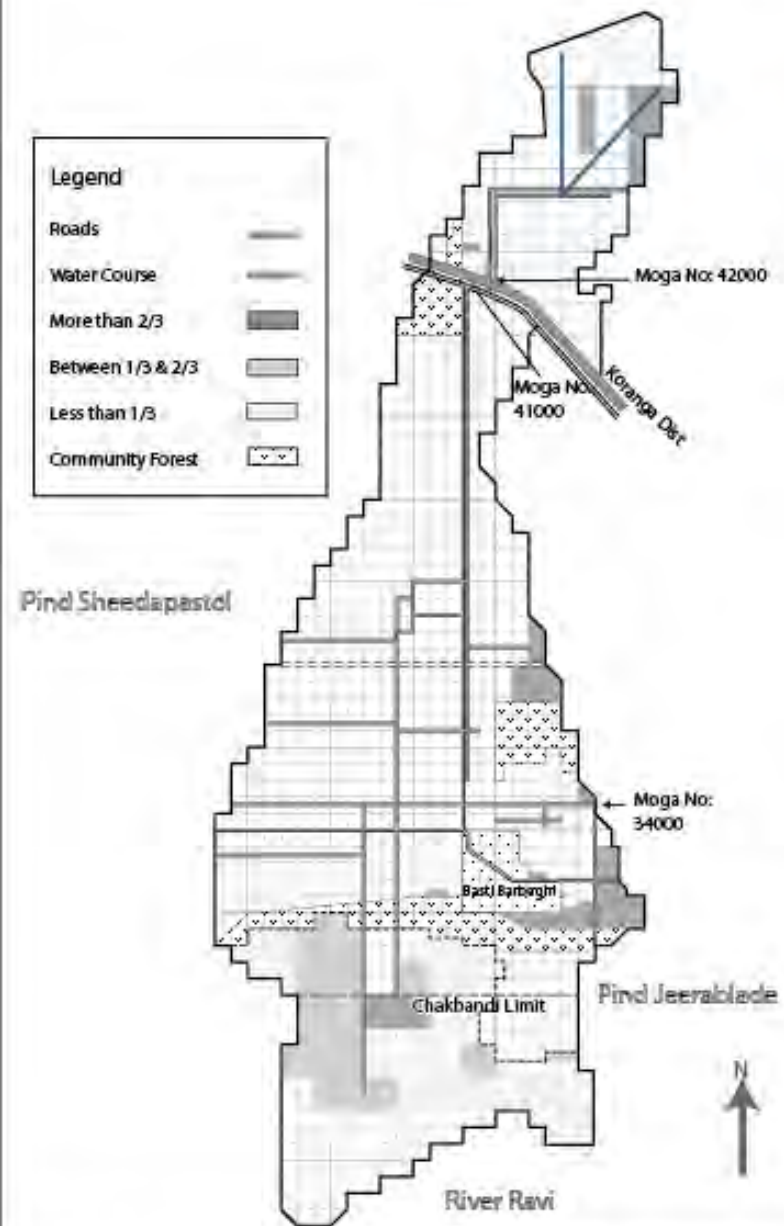
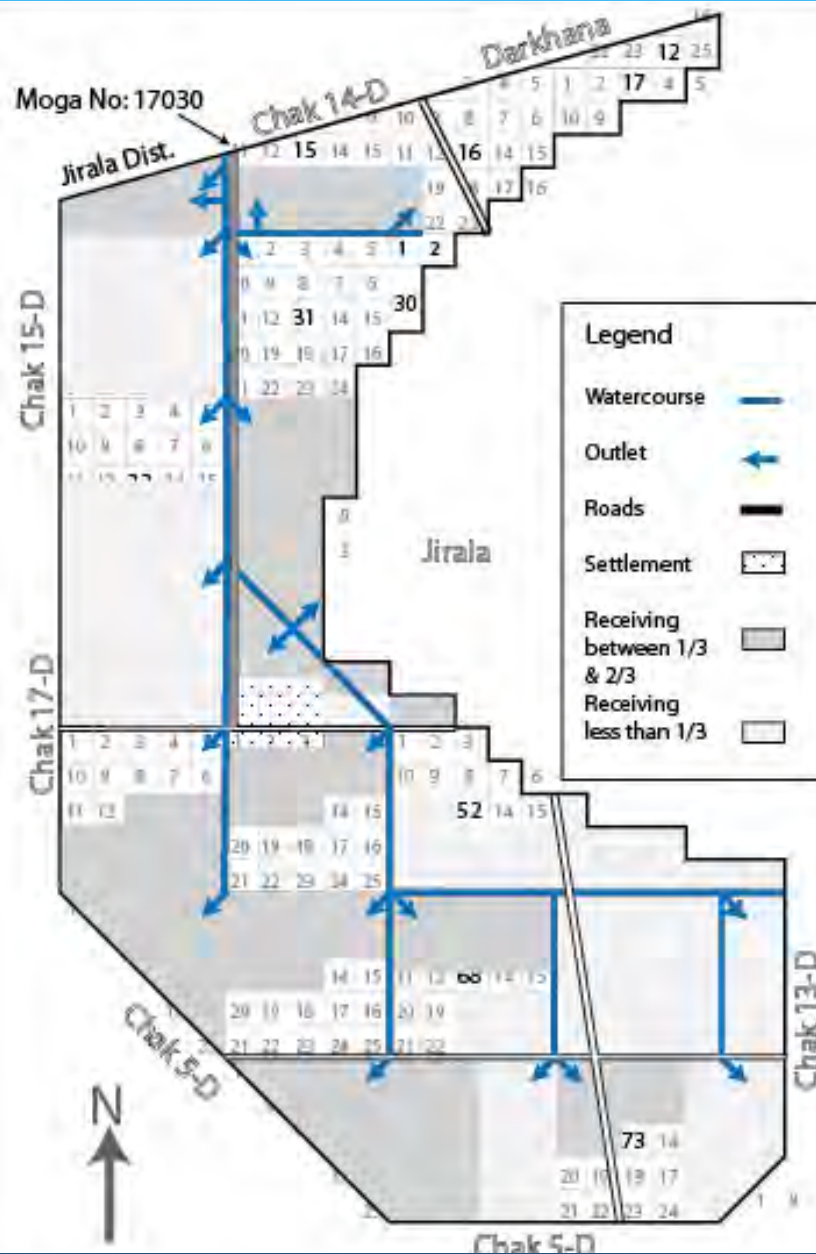
Law is simply politics dressed in a different garb (Blomley 1994: 11-12)

Law is indeed contingent, political and contestable, often perpetuating and legitimizing exploitative and oppressive geographies of social power (Mustafa 2001: 818)

# Canal and Drainage Act 1873

- Allows water for only 64% cropping intensities
- Does not provide mechanisms for conjunctive management of surface and groundwater.
- Does not take into account different groundwater quality
- Insensitive to physical geography and hence creates differential access
- Reinforces colonial social engineering instead of addressing contemporary reality





# Number of Tawan and Sec. 68 cases in Sidhnai Sub-division

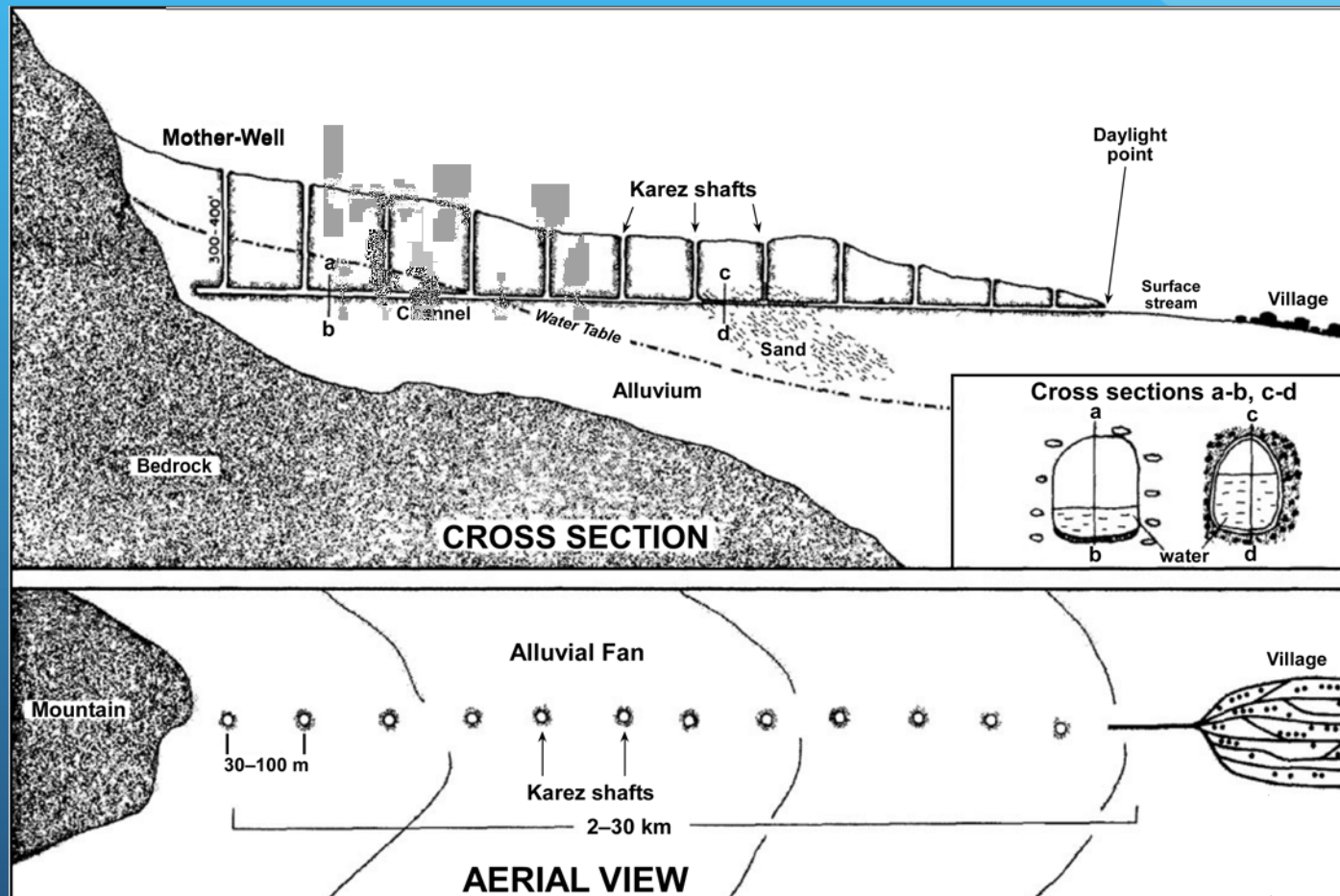
Section	Yr. & No. of Tawan cases		Section 68 Cases		No. of Mogas	mogas per tawan case		mogas per sec. 68 case	
Sarai Sidhu	1996	57	1996	11	114	1996	2	1996	10
	1997	84	1997	4		1997	1	1997	28
Sidhnai	1996	4	1996	8	139	1996	35	1996	17
	1997	9	1997	15		1997	15	1997	9
Makhdumpur	1996	23	1996	10	93	1996	4	1996	9
	1997	27	1997	19		1997	3	1997	5
Wanui	1996	31	1996	19	123	1996	4	1996	7
	1997	10	1997	18		1997	12	1997	7
Total	1996	115	1996	48	469	1996	4	1996	10
	1997	130	1997	56		1997	4	1997	8



# Number of tawan & Sec. 68 cases in Shorkot sub-division

Section	Yr. & No. of <i>tawan</i> cases		Section 68 Cases		No. of Mogas	mogas per <i>tawan</i> case		mogas per sec. 68 case	
Dauranpur	1996	68	1996	29	113	1996	2	1996	4
	1997	23	1997	19		1997	5	1997	6
Shorkot	1996	16	1996	15	317	1996	20	1996	21
	1997	22	1997	7		1997	20	1997	45
Total	1996	84	1996	44	430	1996	5	1996	10
	1997	45	1997	26		1997	10	1997	17

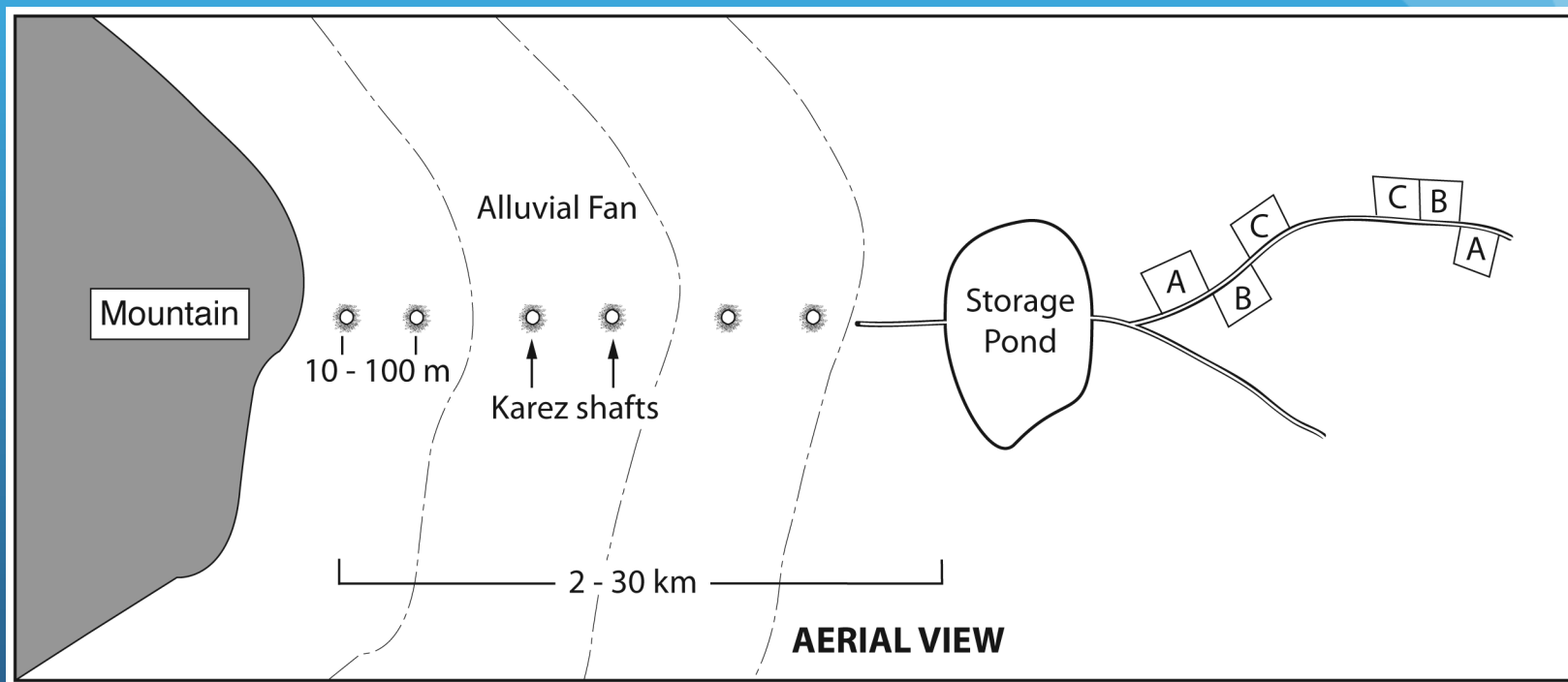
# Karez System



# Features of Karez System in Balochistan

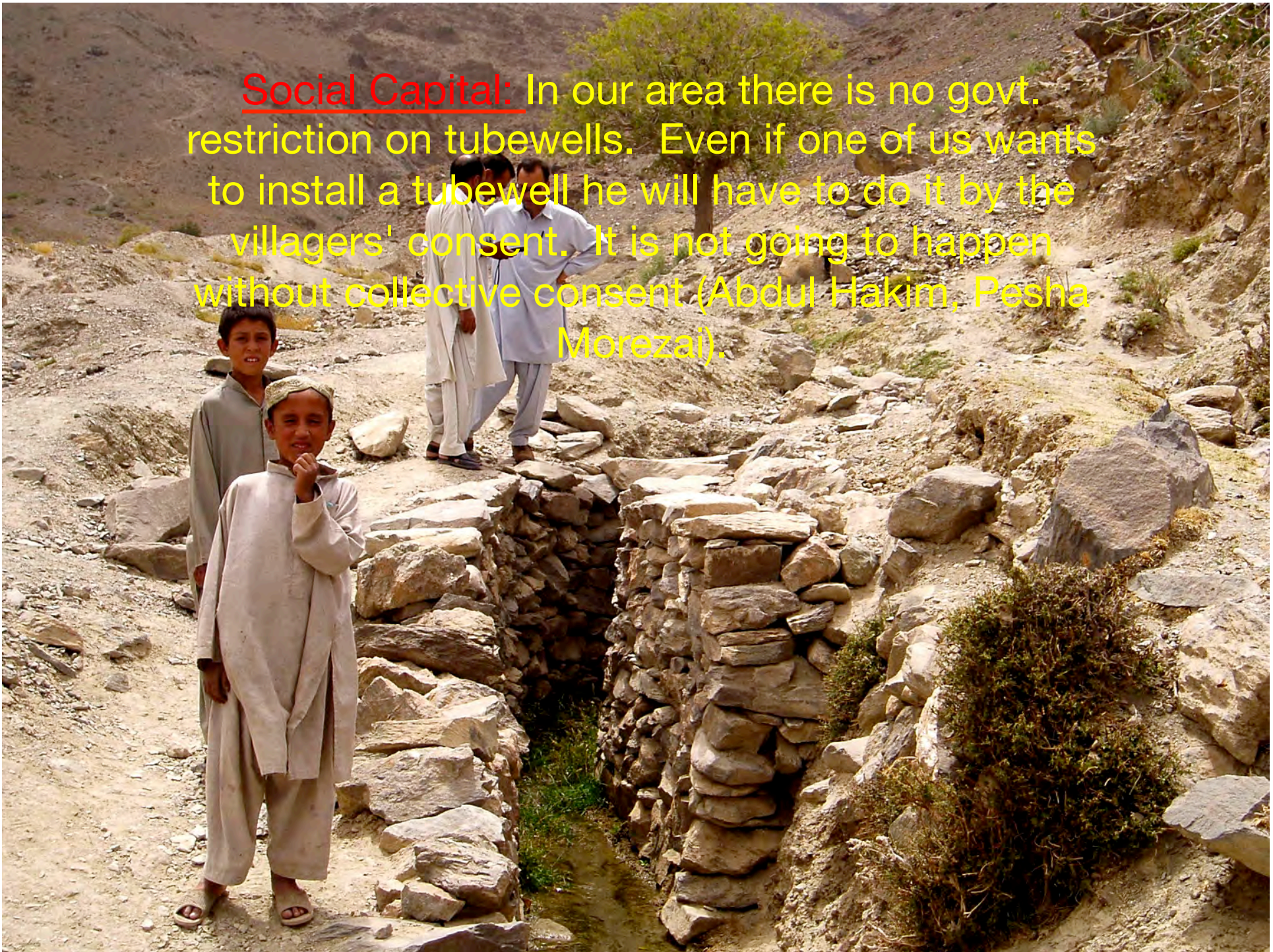
- Responsibility for water management
- *Harim* rule
- Equity in Water distribution
  - Water distribution rules
  - Land distribution rules
- Water markets
- Moral economy

# Land Distribution along a Karez





Social Capital: In our area there is no govt. restriction on tubewells. Even if one of us wants to install a tubewell he will have to do it by the villagers' consent. It is not going to happen without collective consent (Abdul Hakim, Peshawar).






Karezes were a great source of social and communal life for us village folks. People would sit on their sides and discuss their issues and find solutions to their problems. But modern times, new technologies and tubewells have dried out the karezes (Ghaus Bux, Karez Kunghar).








Modernity, Culture and Society: People have turned to the tubewell because the karez went dry. Some people even sold their land and water right because of the drought which is considered extremely low and objectionable in ordinary circumstance (Roohullah, Yakub Karez).

Nowadays times have changed. New technology is coming in, with new machines, and new [modern] people who like latest machines. The traditional irrigation is being progressively forgotten (Khaliqdad, Karez Kunghar).





Poverty Alleviation: But a tubewell is owned by an individual from which two or three people are earning their living, but a karez is communally owned from which 500-1000 people may be earning their living. So you figure out that when a tubewell gives an individual benefit, how many loose out (M. Ismael, Banghi Karez).

Karez was better because we women could get together there and share the gossip, news and advice. It flowed perpetually and we could use it anytime (Gohar Khatoon, Karez Noth)

Sustainable Development: [With tubewells] I would go so far as to say that we are spending away our future generations' water today let alone [water for] the future of karez irrigation! (M. Ayub, Karez Kunghar)

# Consequences of Increased Water Pumping

- Decline in water tables
- Large farmers became more powerful
- Greater adoption of inappropriate cash crops
- Some help with drought coping
- Better quality drinking water



# Karez Decline has led to Increased:

- Breakdown of social capital
- Strain on community cohesion
- Talibanization in Youth
- Intra & inter-community conflict
- Rural to urban migration
- Pauperization
- Power of the rural elite
- Vulnerability to climate change



# Concluding Thoughts

- GW committees at the district and provincial level in Balochistan non-existent
- Customary legal regimes for GW management in decline
- The Canal and Drainage Act 1873, reflects colonial socio-geographical imaginaries and realities.
- Critical legal engagement with enabling legislation such as the Canal and Drainage Act (1873) is imperative for progressive reform in the Pakistani water sector.
- Equity and recognition of the diverse set of values that contemporary democratic polity in Pakistan seeks to realize from water resources should a starting point for such an engagement.
- Legal pluralism?