Can Multipurpose Reservoirs Change the Water Discourse?

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My work on the Nexus is based on the following publications:

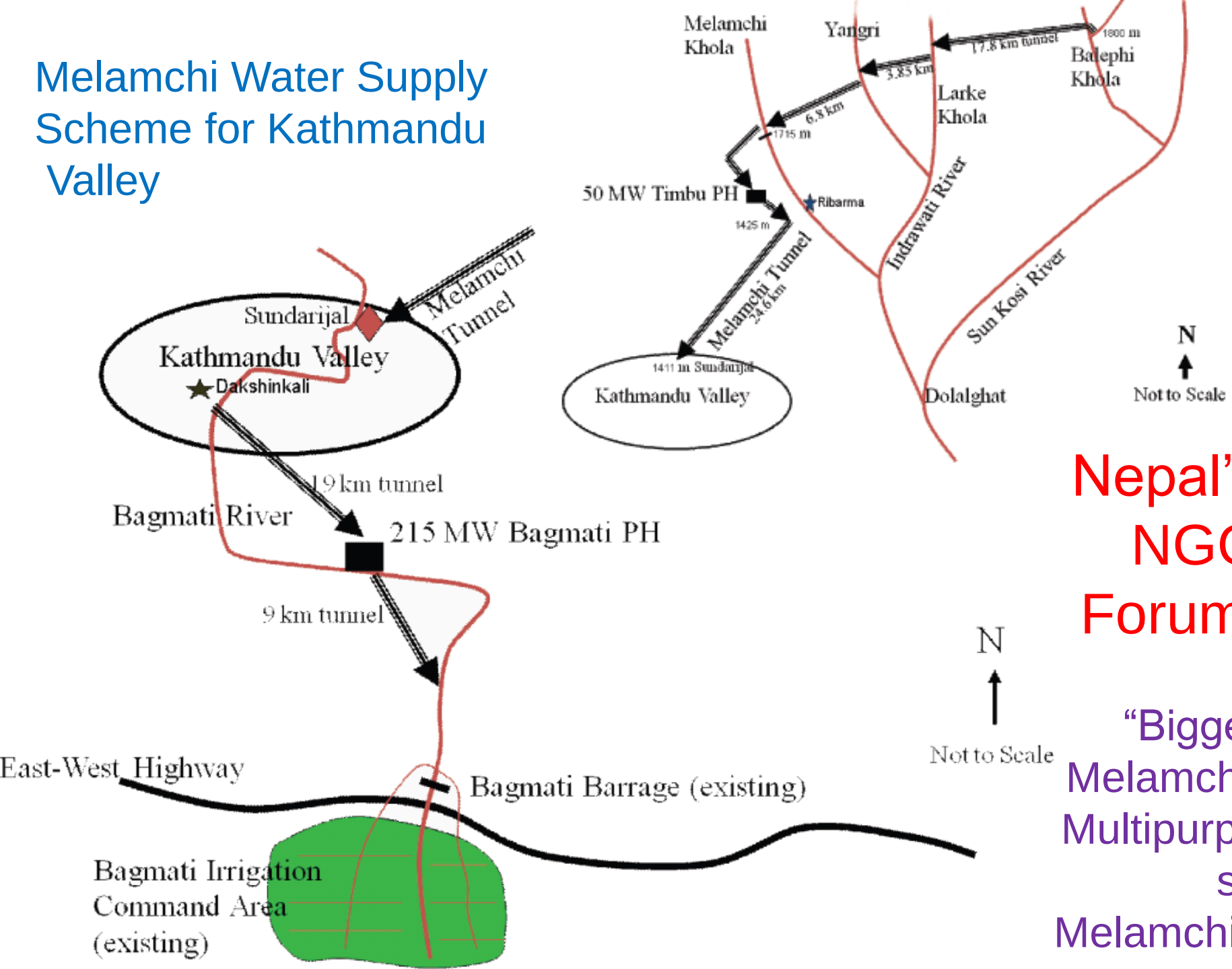
My Nexus Governance paper out of IWA/IUCN:
http://www.iwa-network.org/wp-content/uploads/2016/03/1448008531-Nexus-Governance-Harnessing-Contending-Forces-at-Work_Dialogue-Synthesis-Paper-2015.pdf

Water Alternatives Special Issue:
http://www.water-alternatives.org/index.php/tp1-2/1888-vol8/288-issue8-1

Water Alternatives editorial:
http://www.water-alternatives.org/index.php/alldoc/articles/vol8/v8issue1/277-a8-1-1/file

IDS Sussex Working paper:
http://steps-centre.org/wp-content/uploads/Water-and-the-Nexus.pdf

Melamchi Water Supply Scheme for Kathmandu Valley



Nepal's NGO Forum:

"Bigger Melamchi, Multipurpose Melamchi!!

De-nexused scenario at Kulekhani:

Upstream:

✓Government-owned parastatal Nepal Electricity Authority runs 60 MW peaking storage Plant

✓Some 307 families around the reservoir (most of whom lost their land due to submergence) run informal fish harvesting system

Downstream:

➢Government-owned parastatal Nepal Water Supply Corporation "owns" water supply and sewerage systems of Nepal's municipalities

➢About two years ago, management of Hetauda's water supply system transferred to a local board

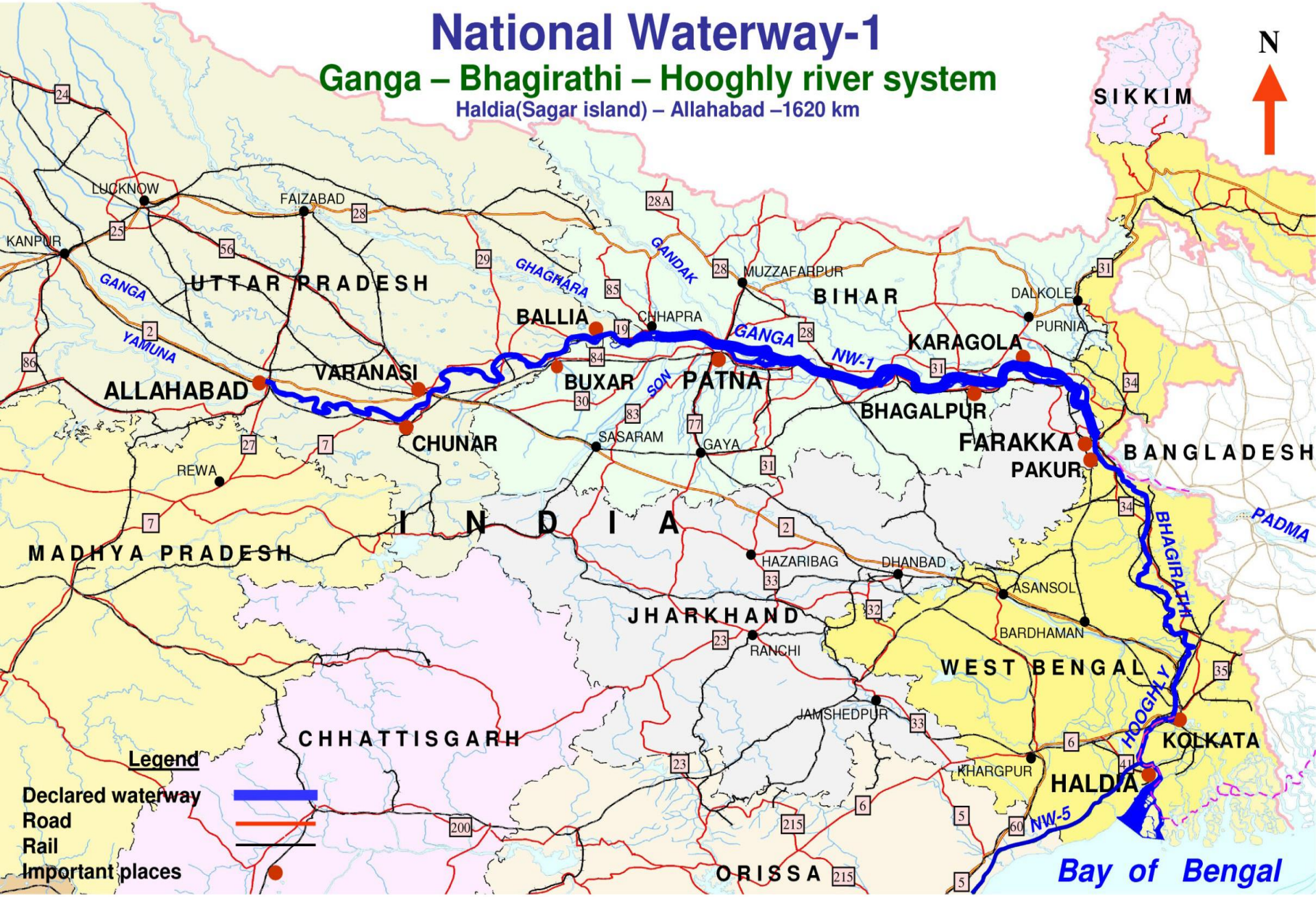
➢About a dozen Farmer-managed Irrigation Systems (FMIS) run traditional irrigation systems of 30 to 150 hectares

➢ Parsa Wildlife Forest Reserve and Chitwan National Park

National Waterway-1

Ganga – Bhagirathi – Hooghly river system

Haldia(Sagar island) – Allahabad –1620 km



Some amazing numbers: the physics of transport

One horsepower (HP) engine can move:

- 50kg for trucks on road
- 500kg for railway
- 4000kg for inland water transport

In terms of energy (Mega Joules/1000ton-km):

- ✓ truck consumes 920
- ✓ rail transport consumes 430
- ✓ inland shipping consumes 230

What others (than India and the South Asians) have done

A. Container traffic

- Singapore: 9%
- China: 33%
- USA+West Europe: 29%
- Thailand:2%
- India: 1%

B. Portion of overall transport by Inland Waterways (IWT)

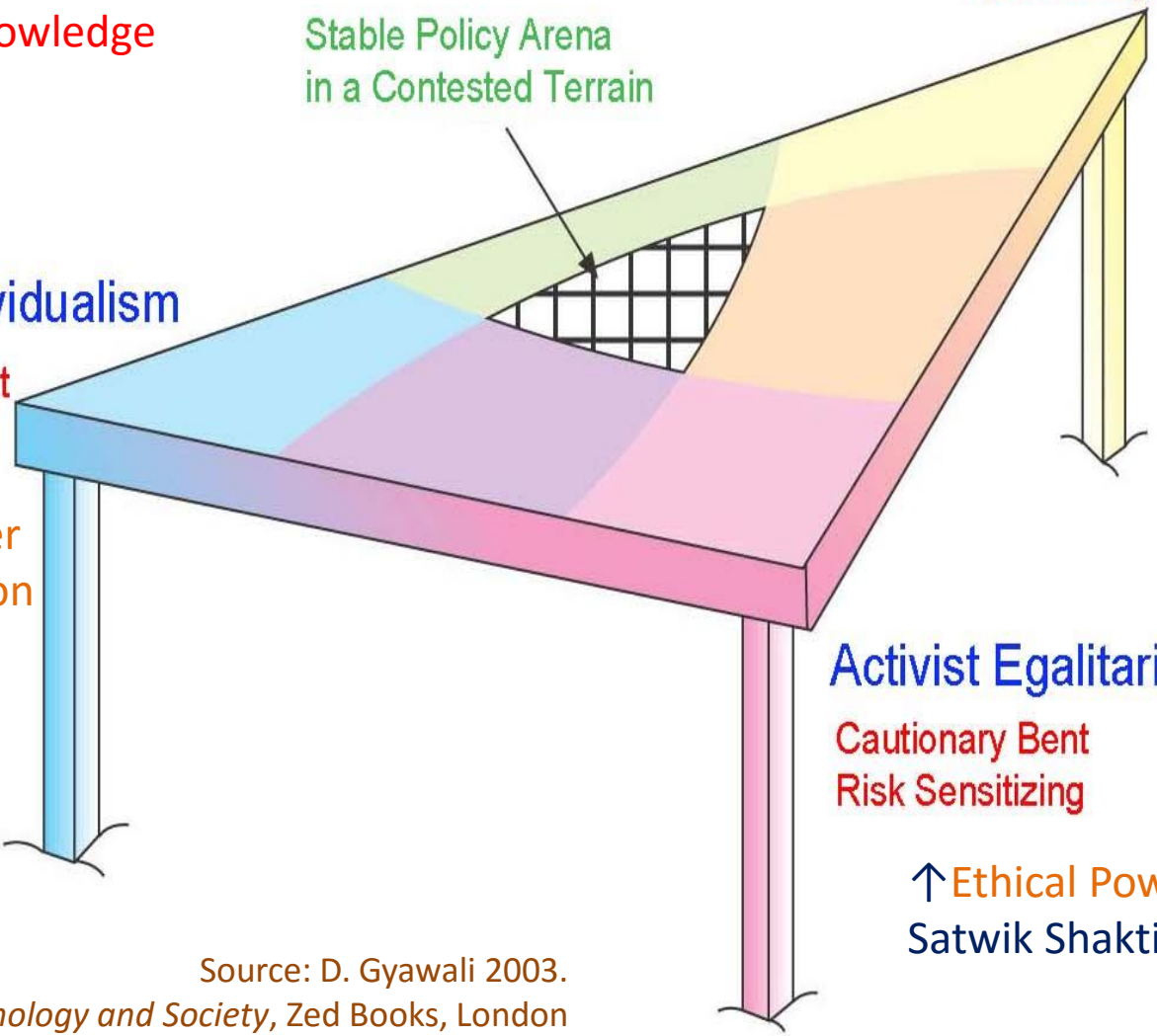
- ✓ Netherlands: 35%
- ✓ USA: 8%
- ✓ China: 9% To say nothing of OBOR!
- ✓ India: 0.5%

Constructive Engagement of Plural Social Solidarities

<u>Mantra of Our Times:</u>
Wicked Problems
Uncomfortable Knowledge
Clumsy Solutions

Procedural Coercive Power
Tamasik Shakti →

Bureaucratic Hierarchism
Regulatory Bent
Risk Managing/Controlling



Market Individualism
Innovative Bent
Risk Taking

↑Persuasive Power
of Market Seduction
Rajasik Shakti

Activist Egalitarianism
Cautionary Bent
Risk Sensitizing

↑Ethical Power of Critique
Satwik Shakti

Source: D. Gyawali 2003.
Rivers, Technology and Society, Zed Books, London

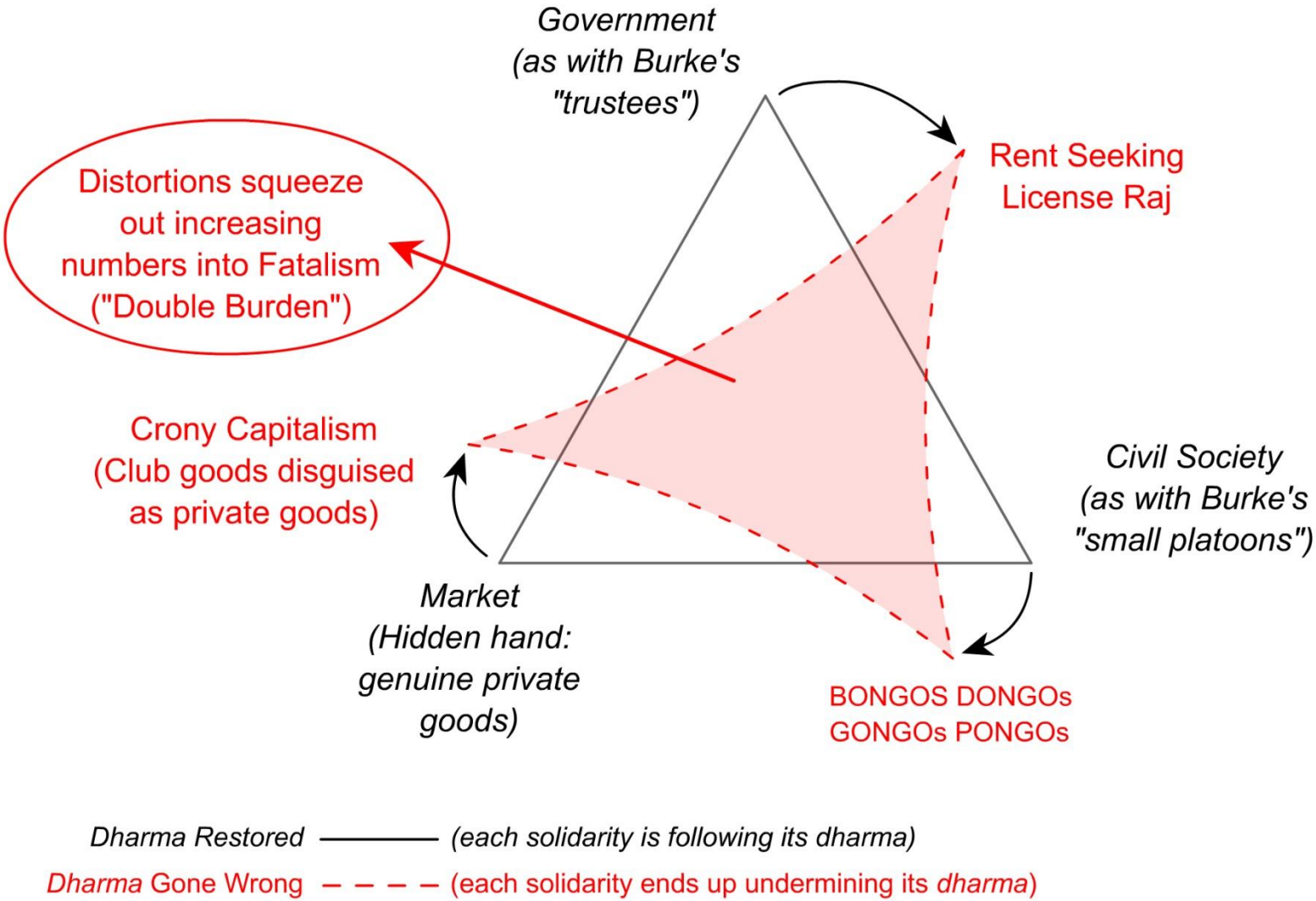


Figure : 1.1 *Dharma* and its dynamics

From: Thompson, Gyawali and Verweij (2017, Routledge EARTHSCAN)

Aid, Technology and Development: *The Lessons from Nepal*