

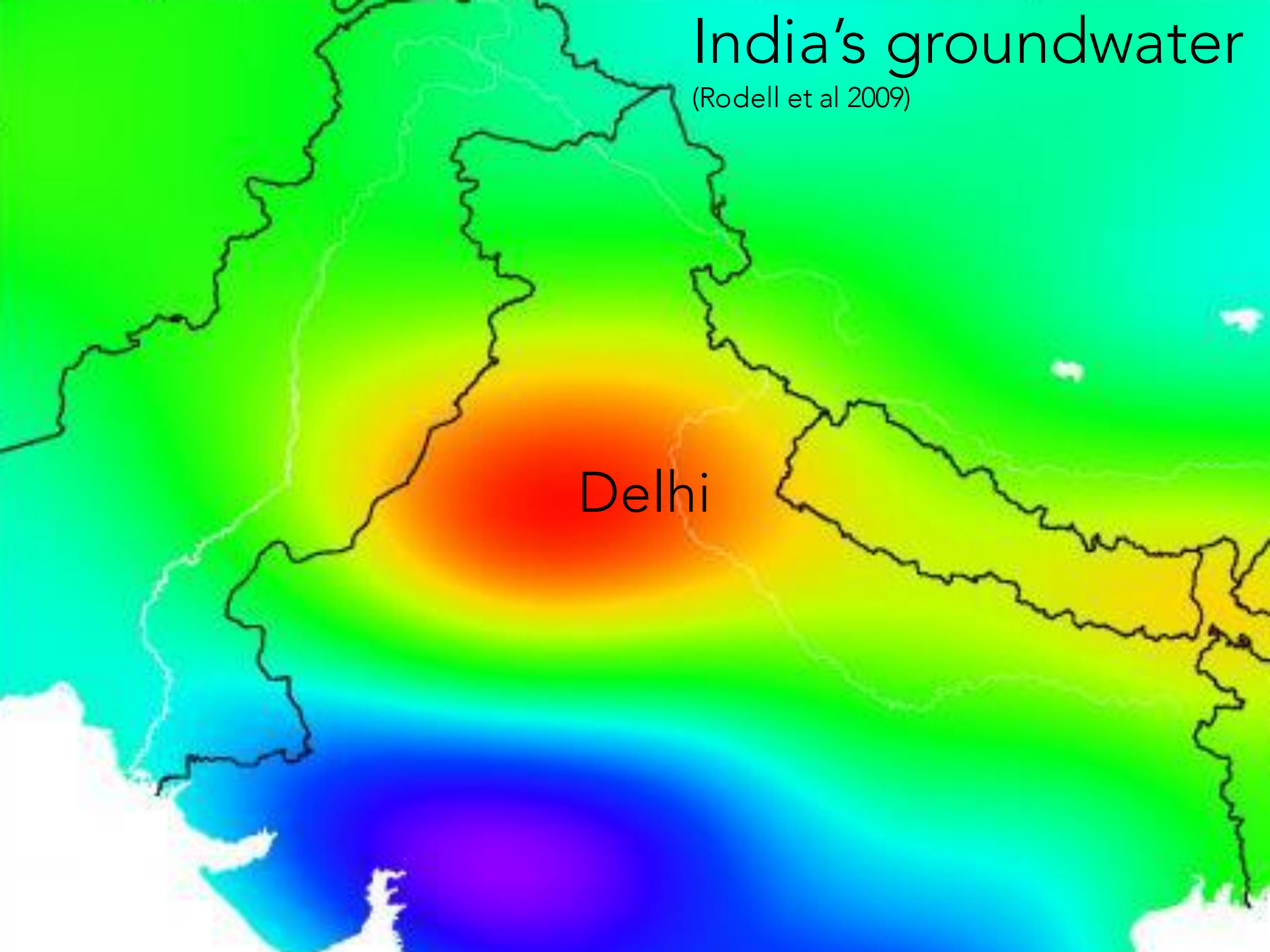
TECHNO-POLITICAL HYDROLOGY IN UNPLANNED DELHI

MATT BIRKINSHAW

PhD Researcher
Geography & Environment
London School of Economics

India's groundwater

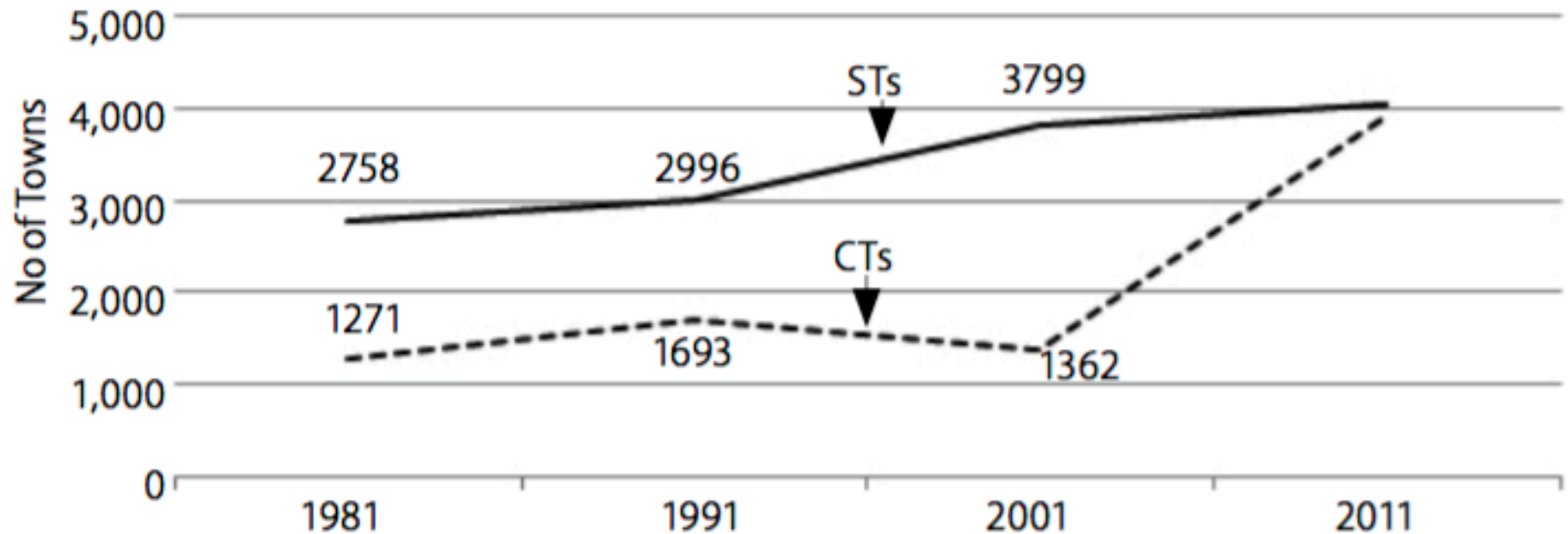
(Rodell et al 2009)



Unacknowledged urbanisation

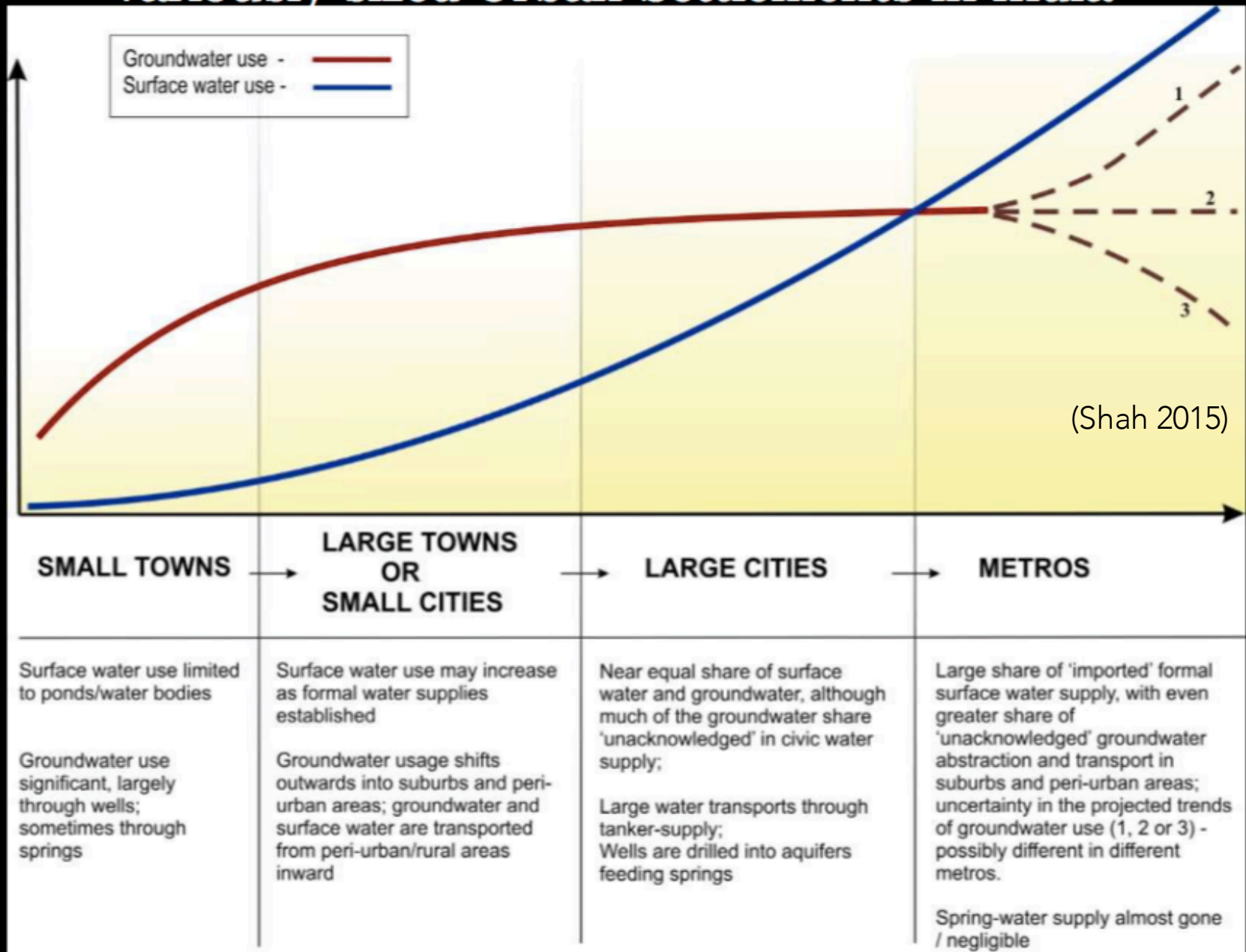
(Pradhan 2013)

Figure 1b: Types of Urban Settlements (1981-2011)



Source: Sivaramakrishnan, Kundu, Singh (2005) and Census of India 2011.

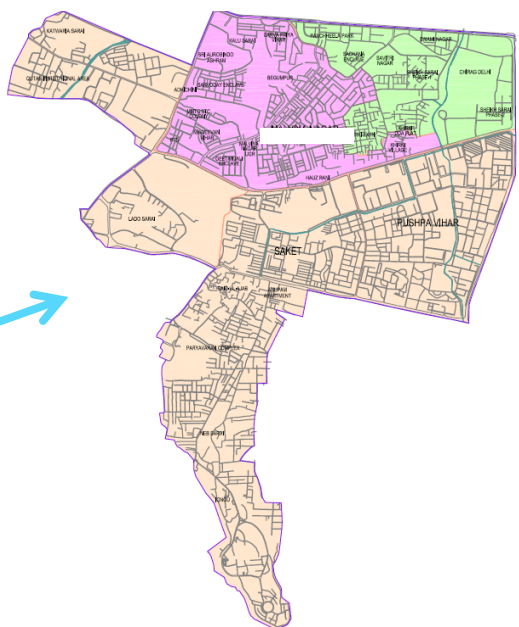
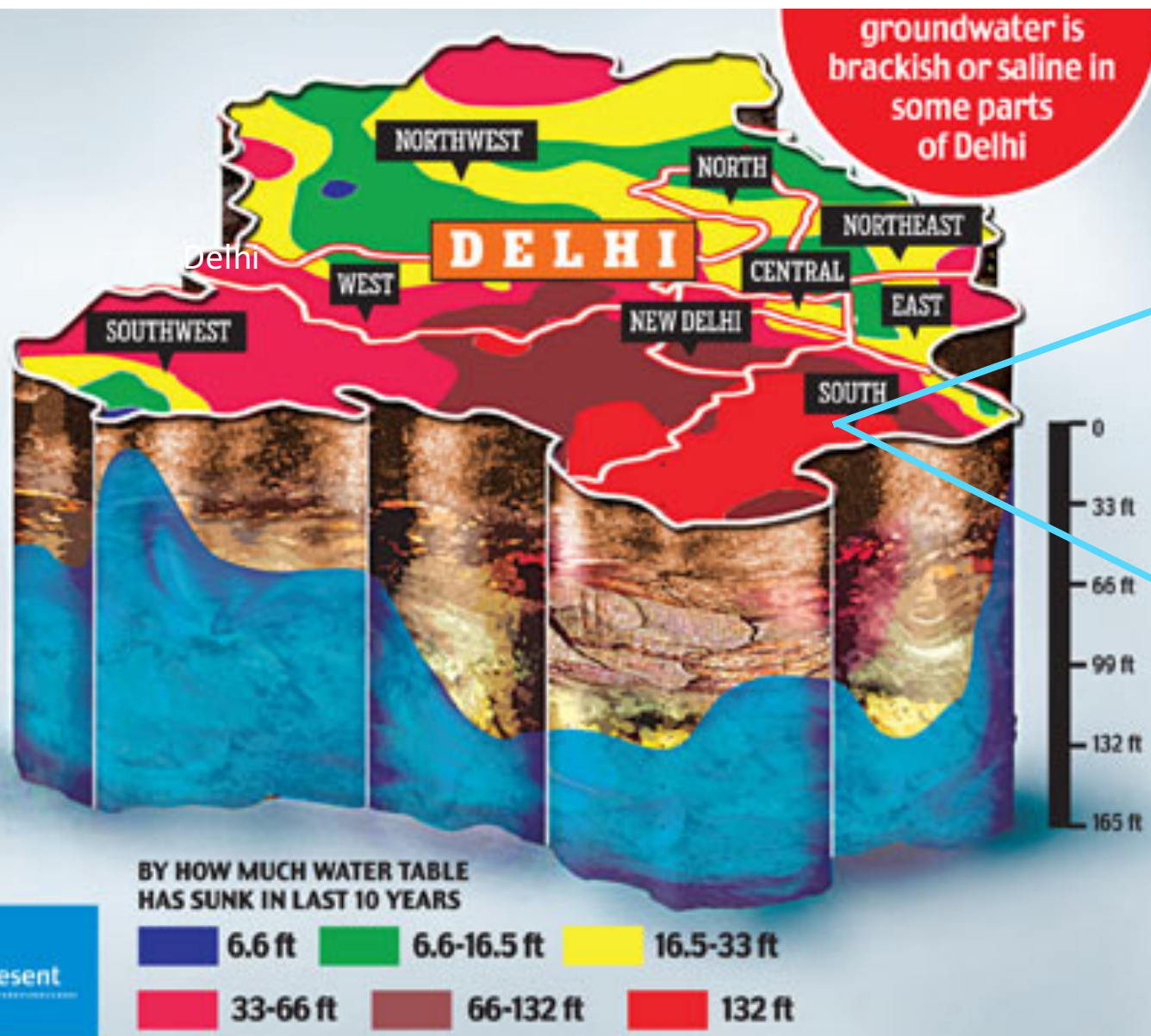
Trends in Surface and Groundwater Use across variously sized Urban Settlements in India



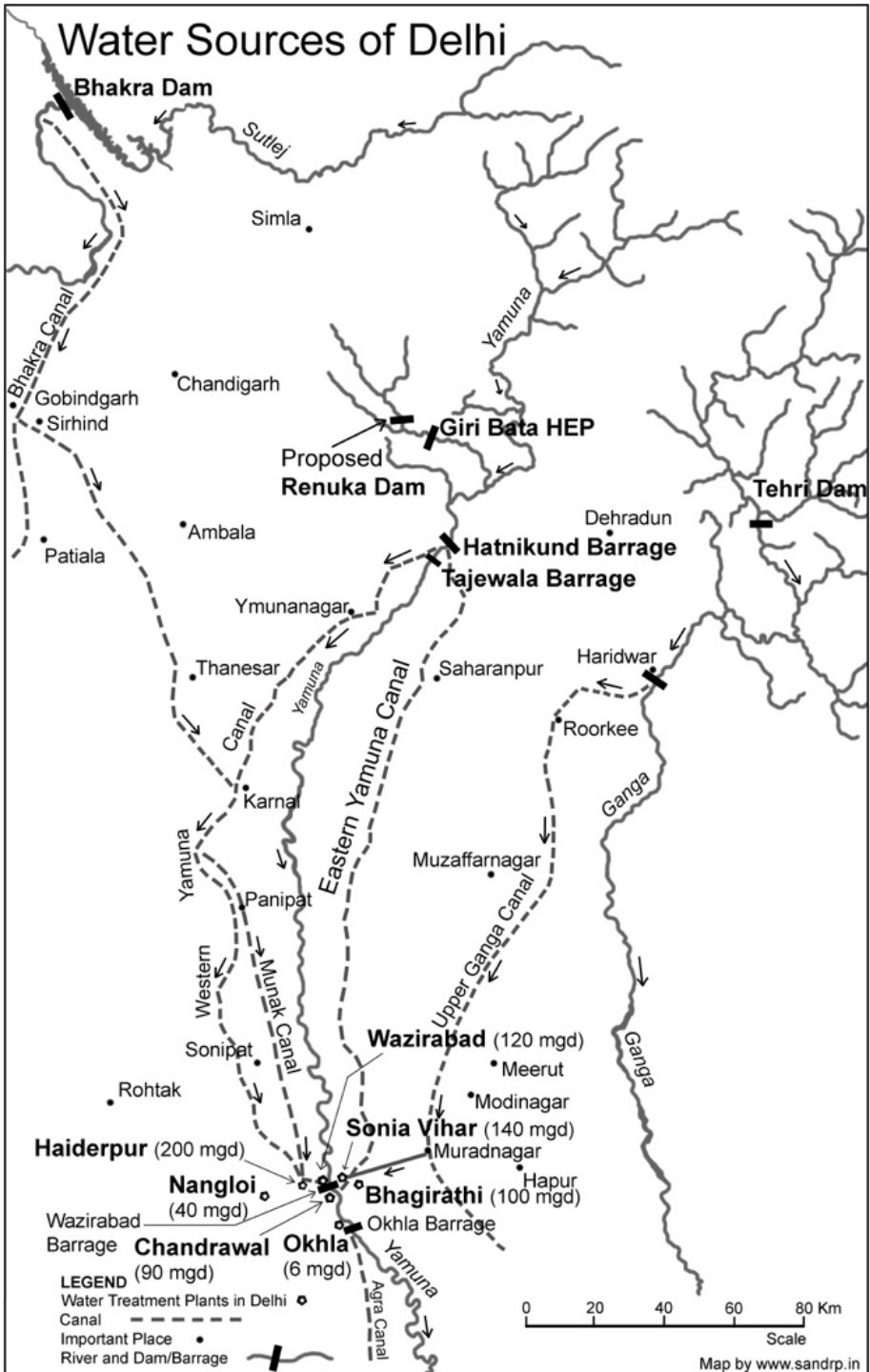
Delhi's groundwater

(Das and Babu 2002)

Research focus areas



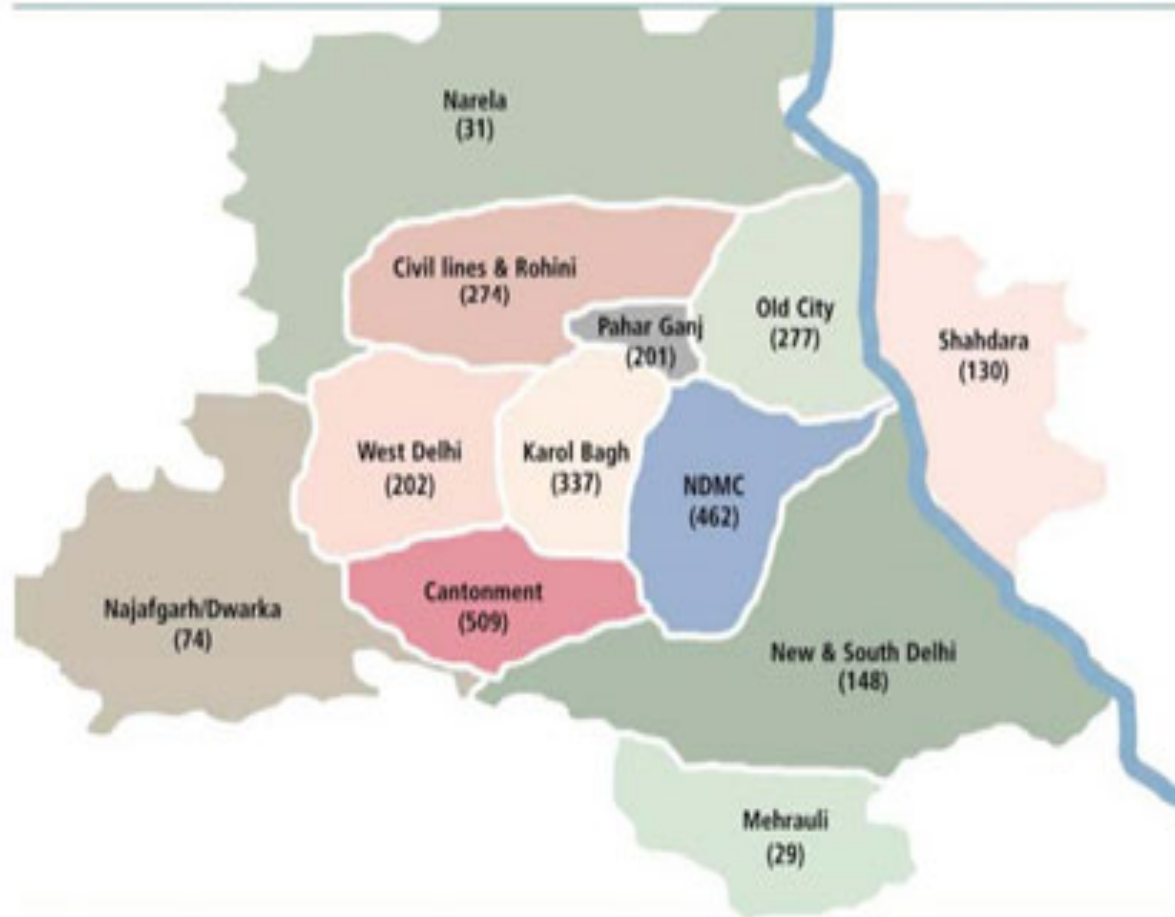
Water Sources of Delhi



Unequal distribution

(Narain et al 2007)

DELHI: CAPITAL INEQUITY (IN LPCD)

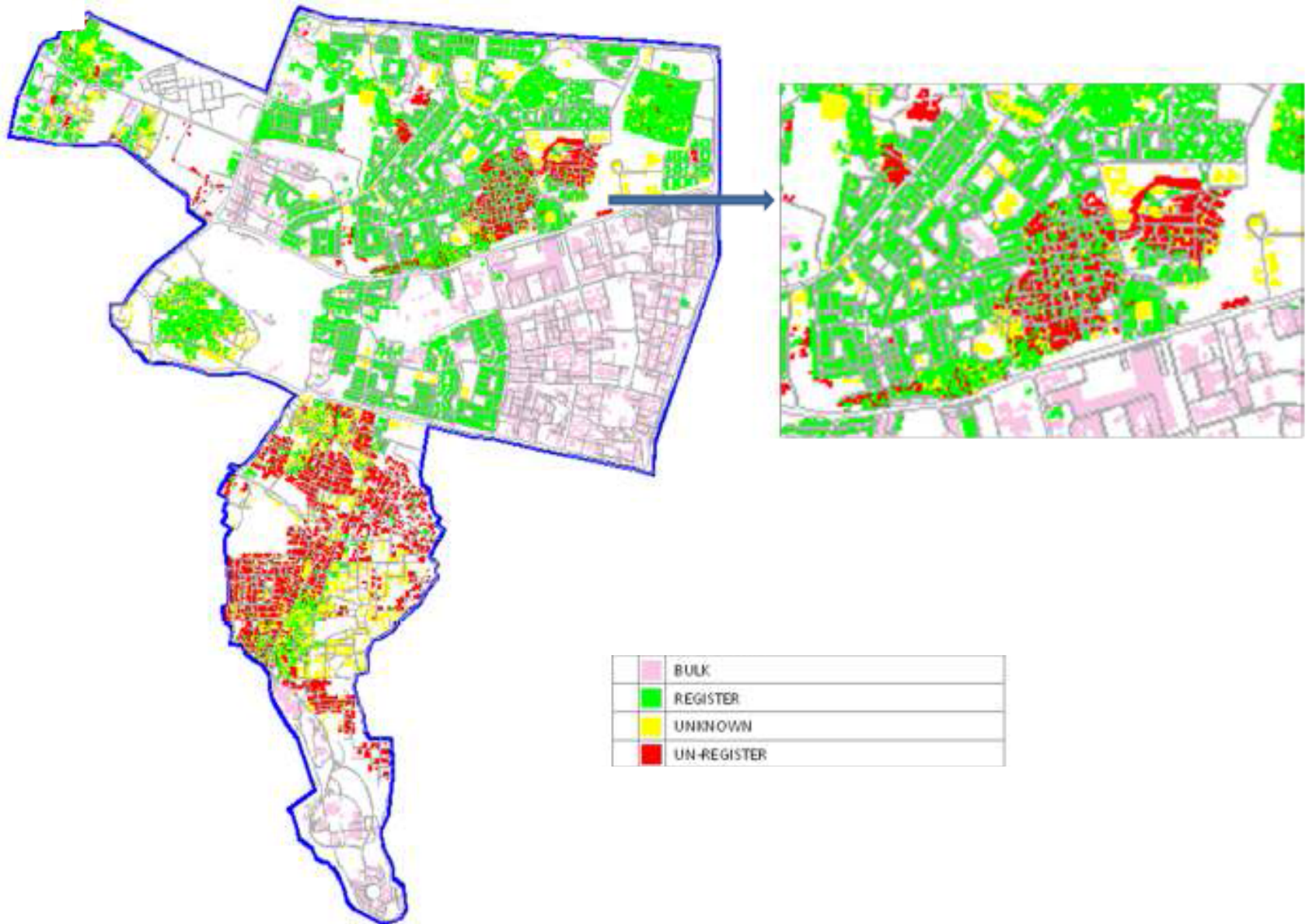


LPCD: Litres per capita daily; NDMC: New Delhi Municipal Corporation

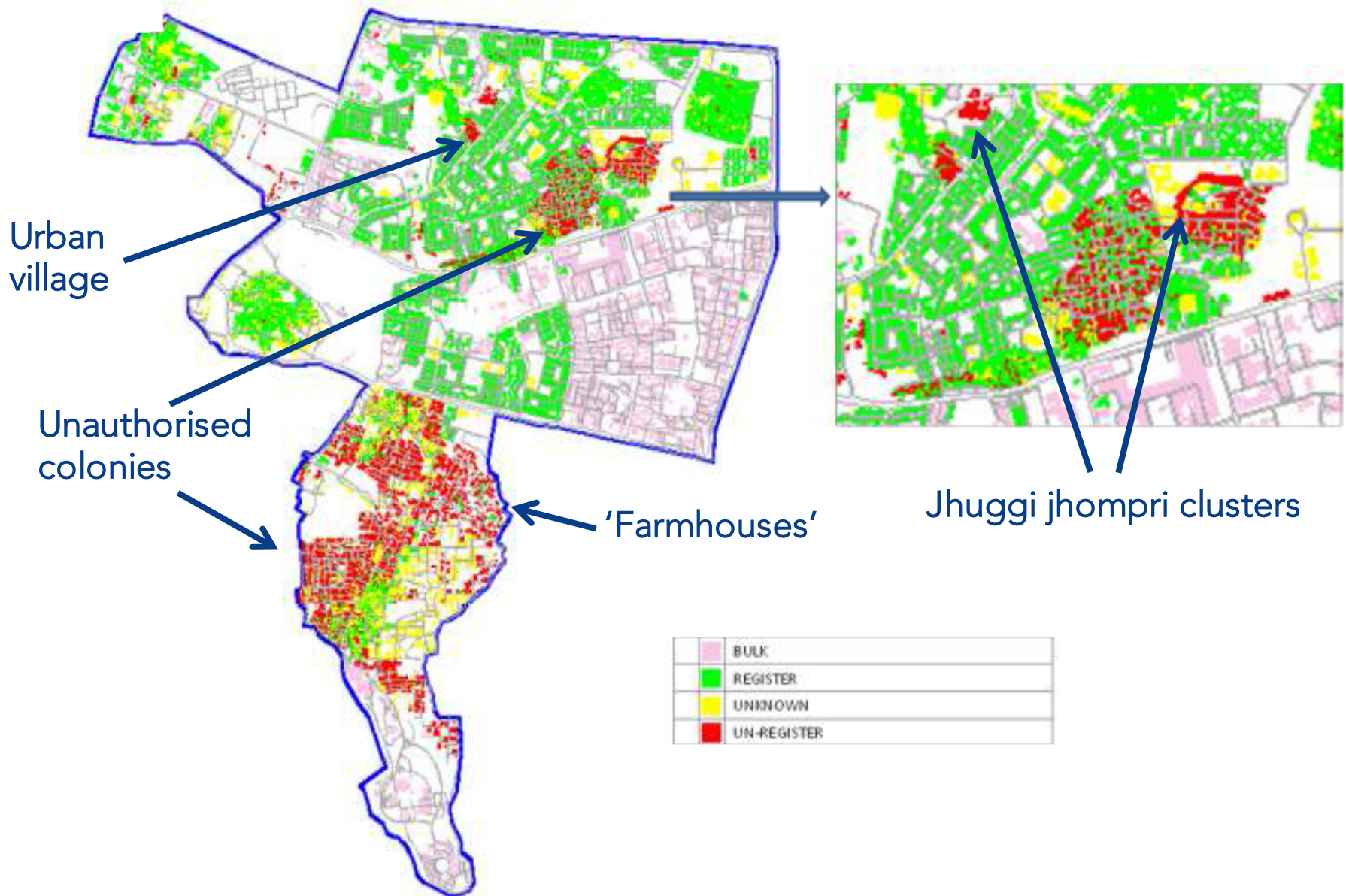
Source: Sunita Narain et al 2007, *Sewage Canal: How to Clean the Yamuna*, Centre for Science and Environment, New Delhi



Planning status



Planning status





Water as perspective on state-society

'Informal water' research:

Karen Coelho

Nikhil Anand

Lisa Björkman

Malini Ranganathan

Qudsiya Contractor

Marie Hélène Zérah

Colin McFarlane

Karen Bakker

Matthew Gandy

Eric Swyngedouw





HEALTH WOES

■ The contamination shows presence of coliform bacteria or E.coli in Delhi's water. This bacteria is responsible for gas-trointestinal infections that can result in typhoid, cholera, gastroenteritis or jaundice

■ Posh areas of south Delhi and Karol Bagh are the worst affected

■ About 60 per cent of Delhi residents consume water supplied by the Delhi Jal Board. The rest get water from pumps or tankers

■ Drinking water sources in Delhi are contaminated by sewage overflow, septic tanks, leaking sewer lines, sludge and untreated waste water

■ Pipes supplying water to many areas of Delhi are old and have cracks

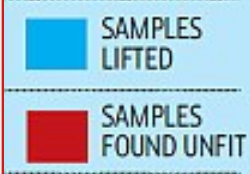
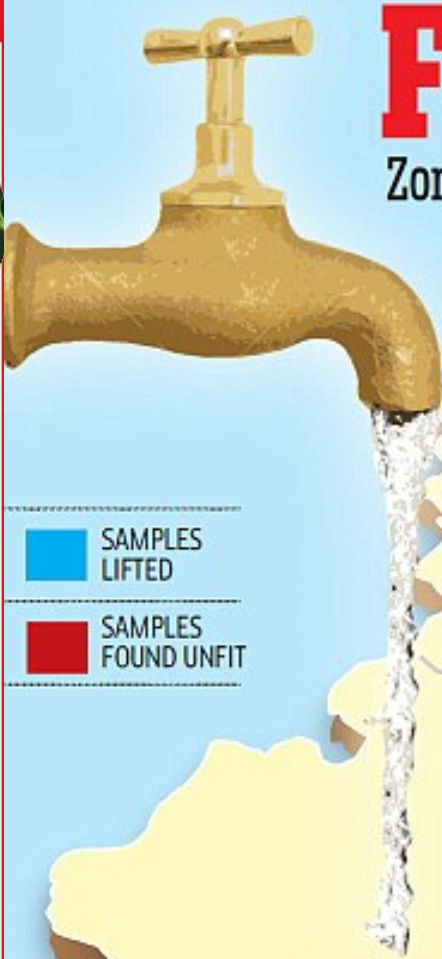
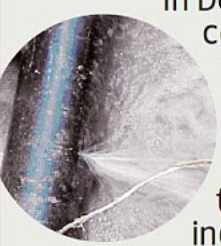
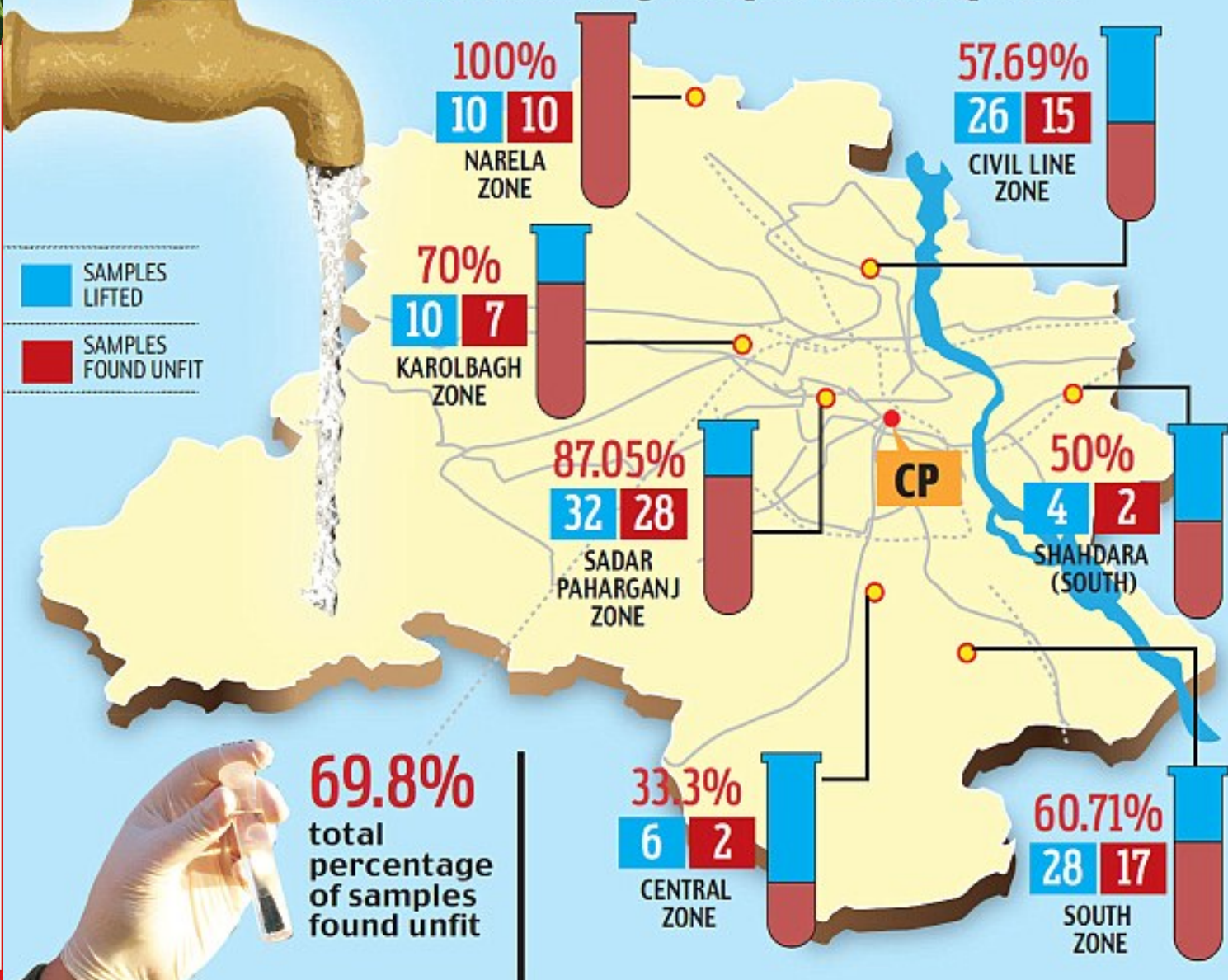


FIGURE IT OUT

Zone-wise bacteriological report of DJB's tap water

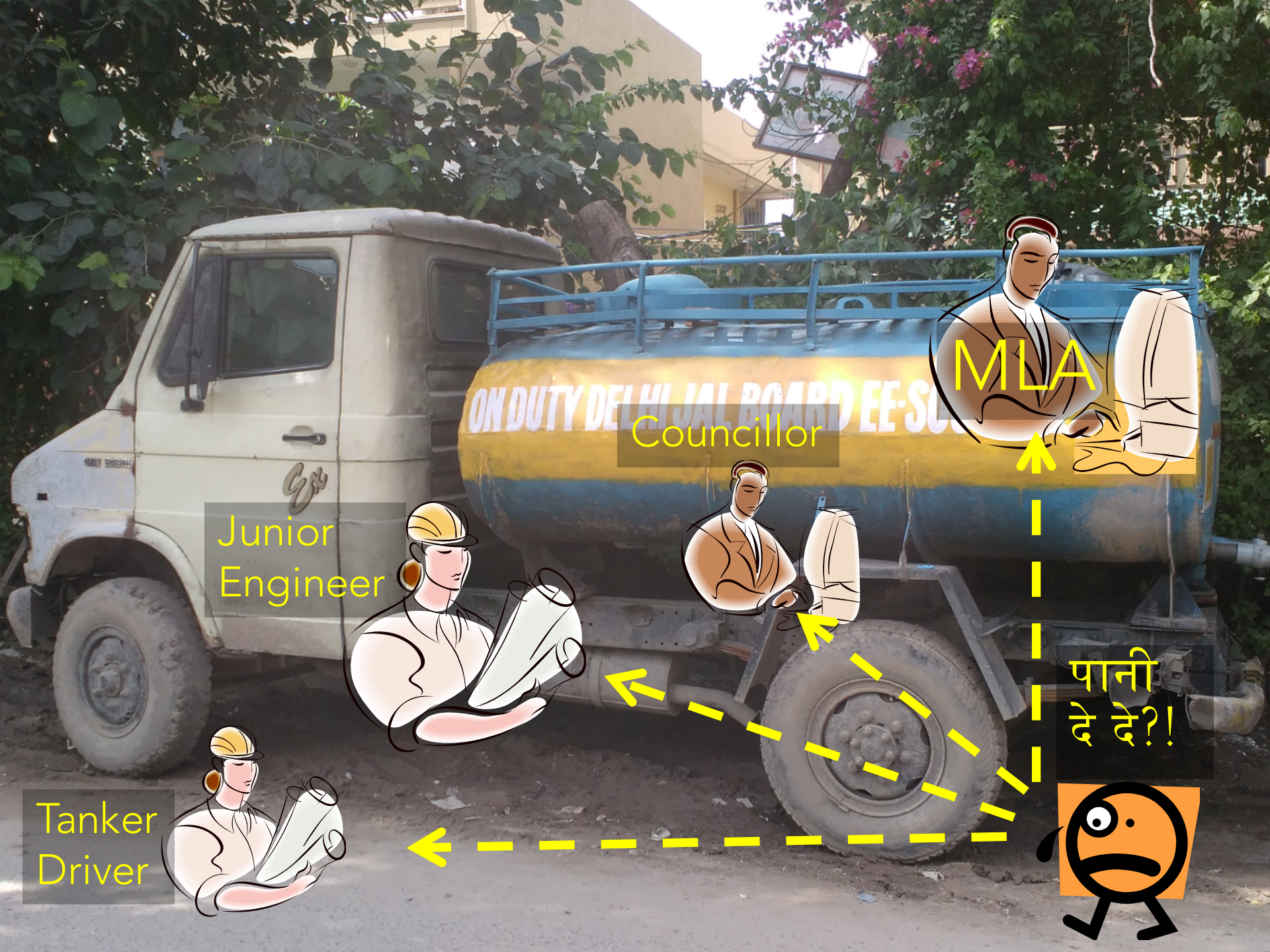








ON DUTY DELHI JAL BOARD EE-SOUTH-III



MLA

Councillor

Junior
Engineer

Tanker
Driver

पानी
दे दे?!





The image shows a close-up of a Delhi Gold water bottle label. The label has a blue background with a large white water droplet on the left and a green leaf on the right. The brand name 'Delhi Gold' is written in a large, red, cursive font with a white outline. Below it, the words 'Packaged Drinking Water' are written in a smaller, white, sans-serif font. At the bottom right, the number '16' is visible, likely indicating the volume in liters. The label is partially covered by a clear plastic cap at the top.

Delhi Gold™

Packaged Drinking Water

16







KALP SCHOOL
SENIOR
SECONDARY

WATER TUTORIAL &
ACCOUNTS/ECO.



Habibi

Let the board games begin.

PERS STOP

Netting
Pioneer In Splice M

CHOUHDARY • NP • WATER PH • CHOUHDARY 0177108470

HK38
P704

HK38
P704

HK38
P704

AAP's free water promise scuppered: South Delhi hit by 'artificial' dry spell as DJB - tanker mafia create deliberate shortage

By SUMIT KUMAR SINGH

PUBLISHED: 22:53, 2 January 2014 | UPDATED: 22:53, 2 January 2014

[Share](#) [Tweet](#) [Pin it](#) [+1](#) [Share](#) 162 shares

[View comments](#) 0

It's been five days since Chief Minister Arvind Kejriwal came good on the Aam Aadmi Party (AAP) promise of free water to Delhi residents.

It's been six days, however, since residents of the upmarket colony of Asiad Village have got a drop of Delhi Jal Board water.

Call this the unkindest cut, but AAP's free water world seems to have turned South Delhi's tony neighbourhoods into drier places.

It's not AAP's fault, as a Mail Today investigation has revealed that an unholy nexus between private tanker operators and corrupt Delhi Jal Board (DJB) officials is the real reason for the big South Delhi dry-up.



© K Asif

A private tanker arrives at the upscale Asiad Village that is reeling under a severe water crisis



वार्डनं. 177 D.J.B. द्वारा सोनिया
विहार की पाईप लाईनों से पानी
जोड़ने का कार्य आम आदमी पार्टी
के लोकप्रिय विधायक श्री प्रकाश जारवाल
के संज्ञेत्य से किया जा रहा है।

CanWill
The Way to Score 90+ Tutorials
सॉल्व कर 20 वर्षों के अनुभवी Teachers से

9th to 12th

History	Mathematics	Accountancy
Natural Sci.	Physics	Economics
Geography	Chemistry	B.Studies

NEW BATCH STARTS ON EVERY WEEK
SSC CG/SL/10+2
BANK (PO/CLERK)
In Police/DSSSB/Railways/HVJ/other Govt. Exams
10th/11th/12th/Reasoning/2nd to Solve math
ENGLISH के 2000 Words सिर्फ Easily!!
SPECIAL DISCOUNT: Meritorious Students / Girls / Group Registration
955455177, 9560225122
KAM BANDH ROAD : C-25 (BASEMENT) SEWA SADAN,
SANGAM VIHAR, NEW DELHI 110080

CanWill
The Way to Score 90+ Tutorials
सॉल्व कर 20 वर्षों के अनुभवी Teachers से

9th to 12th

History	Mathematics	Accountancy
Natural Sci.	Physics	Economics
Geography	Chemistry	B.Studies

NEW BATCH STARTS ON EVERY WEEK
SSC CG/SL/10+2
BANK (PO/CLERK)
In Police/DSSSB/Railways/HVJ/other Govt. Exams
10th/11th/12th/Reasoning/2nd to Solve math
ENGLISH के 2000 Words सिर्फ Easily!!
SPECIAL DISCOUNT: Meritorious Students / Girls / Group Registration
955455177, 9560225122
KAM BANDH ROAD : C-25 (BASEMENT) SEWA SADAN,
SANGAM VIHAR, NEW DELHI 110080

सर्वजल

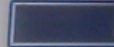
किफायती

सुलभ

पि-110000-01-04

सर्वजल
किफायती • सुलभ • स्वच्छ

sarvajal



1. Use Card Pin

2. Press Button to Dispense Water



500

यह विकास कार्य आपके पैसे से आपके लिए
कराया जा रहा है। सुझाव/शिकायत
aapconnect.com/8588833443 पर
दर्ज करा सकते हैं।
निवेदक-
सोमनाथ भास्ती (विधायक)
MLA

यह विकास कार्य आपके पैसे से आपके लिए
कराया जा रहा है। सुझाव/शिकायत
aapconnect.com/8588833443 पर
दर्ज करा सकते हैं।
निवेदक-
सोमनाथ भास्ती (विधायक)
MLA

निवेदक-
सोमनाथ भास्ती (विधायक)
MLA



HYDRO TESTING

DATE : 05.07.2015

LOCATION :- SHEIKH SARAI Ph-I RPS Block

PROJECT :- PILOT PROJECT FOR IMPROVING THE
EFFICIENCY OF WATER DISTRIBUTION
NETWORK UNDER MALVIYA NAGAR UGR.

CLIENT :- DJB
ZONE :- 04
TYPE :- HDPE
DIA OF PIPE :- 160 mm dia
LENGTH :- 282.92 Mtr
PIPE ID :- R1458
JUNCTION NO: J782A - J783
TEST PRESSURE :- 7.5 kg/cm²
ACTUAL PRESSURE :- 7.5 kg/cm²

Sr. No.	Key Performance Indicators (KPI)	Benchmark as per	Existing Status
		MoUD	
1	Coverage of Water Supply	100%	84%
2	Per Capital Supply of Water	150 LPCD	286 LPCD
3	Continuity of Supply	24 hrs	3 – 8 hrs
4	Extent of Metering of Water Connections	100%	41%
5	Extent of Non-revenue water	15%	65 – 70 %
6	Efficiency in Redressed of Complaints	82%	No data available with DJB
7	Quality of Water	100%	Samples are not meeting the specified standards
8	Operating Cost recovery in water supply services	100%	2009-10 → 28.83% 2010-11 → 61.40%
9	Efficiency in collection of water related charges	90%	81%
10	Total Cost of water (Rs / Cum) on production volume		Rs 8.54 for 2009-10
11	Average tariff (Rs /Cum) on Revenue water		Rs 7.56/Cum 2009-10 Rs 15.14/Cum 2010-11

Table 10:Key performance Indicators



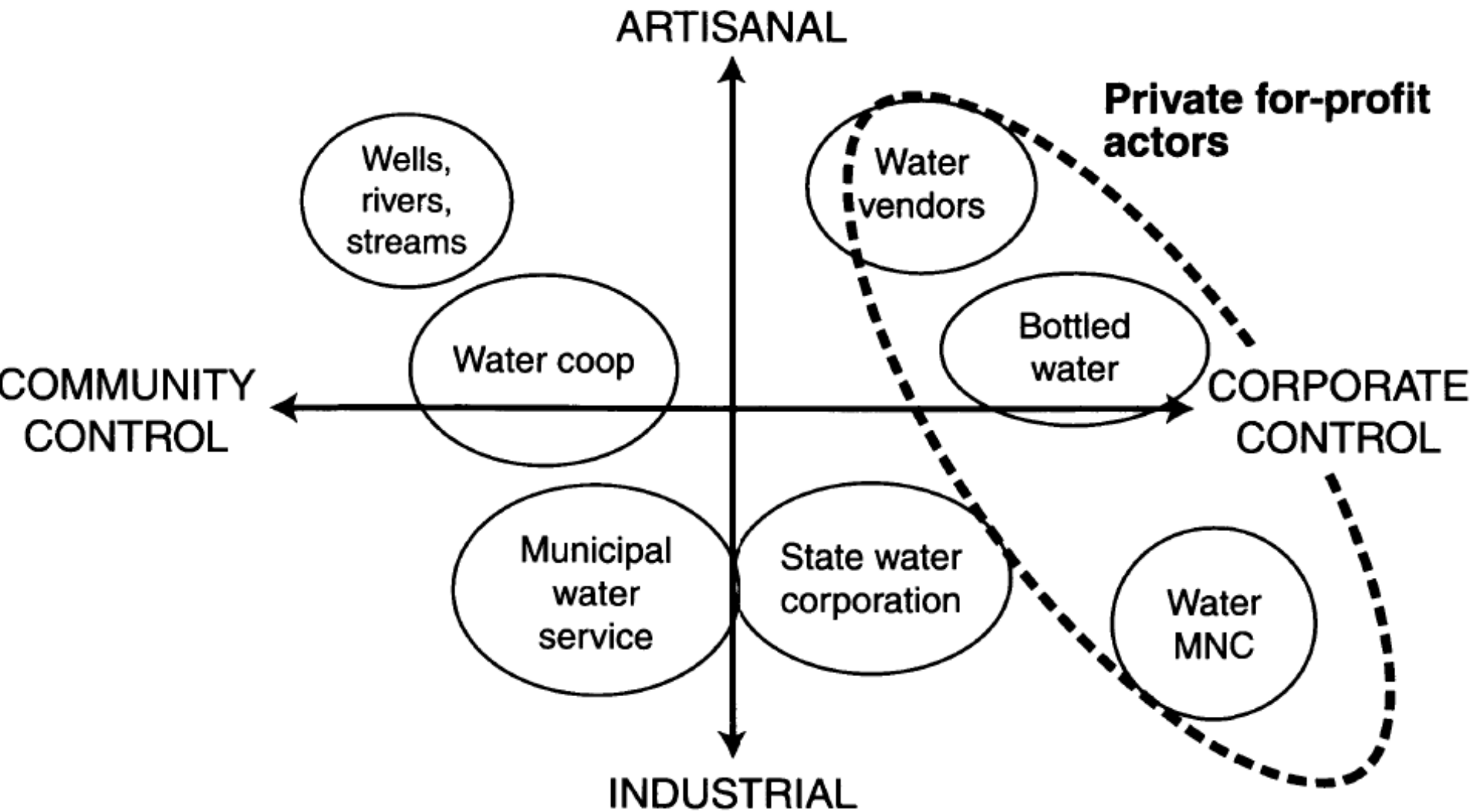


Figure 1 Modes of urban water supply provision

Karen Bakker, 'Archipelagos and Networks: Urbanization and Water Privatization in the South', *The Geographical Journal*, 169(4), Dec. 2003, p.337

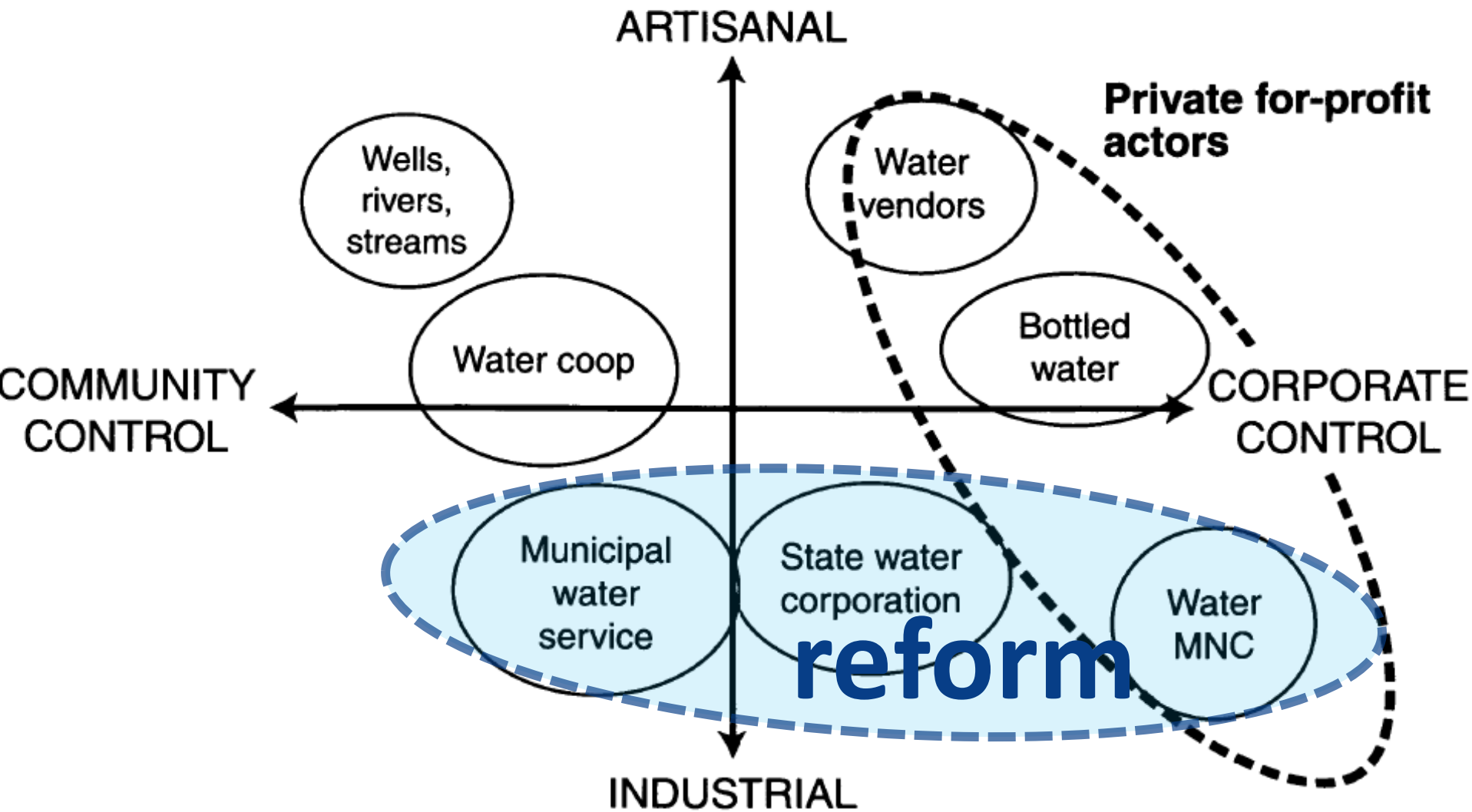


Figure 1 Modes of urban water supply provision

Karen Bakker, 'Archipelagos and Networks: Urbanization and Water Privatization in the South', *The Geographical Journal*, 169(4), Dec. 2003, p.337

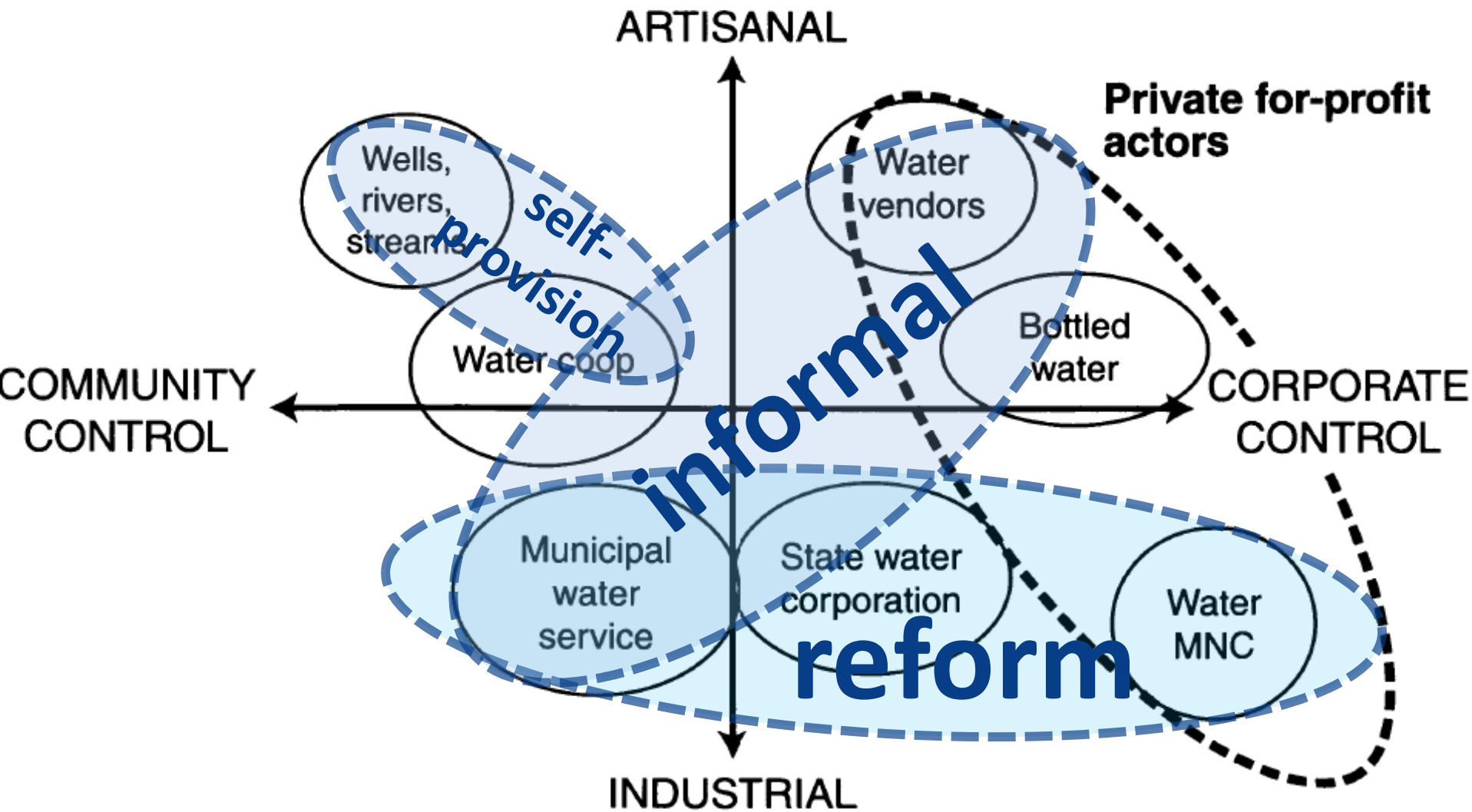


Figure 1 Modes of urban water supply provision

Karen Bakker, 'Archipelagos and Networks: Urbanization and Water Privatization in the South', *The Geographical Journal*, 169(4), Dec. 2003, p.337



matthbirkinshaw.wordpress.com