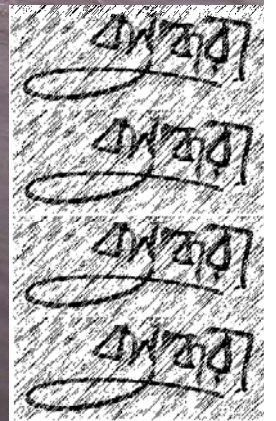


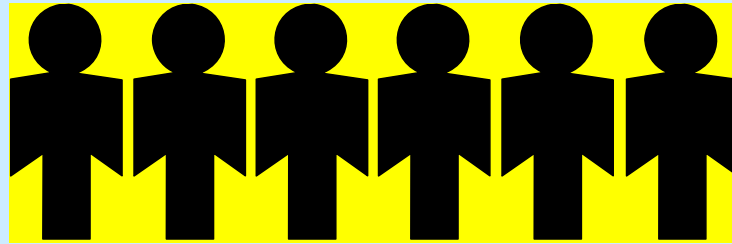
Understanding Urban Waterbodies before ‘managing’ them – Kolkata Study

Presented at Workshop by CSE
20 June 2013

Mohit Ray, PhD (Engineering)

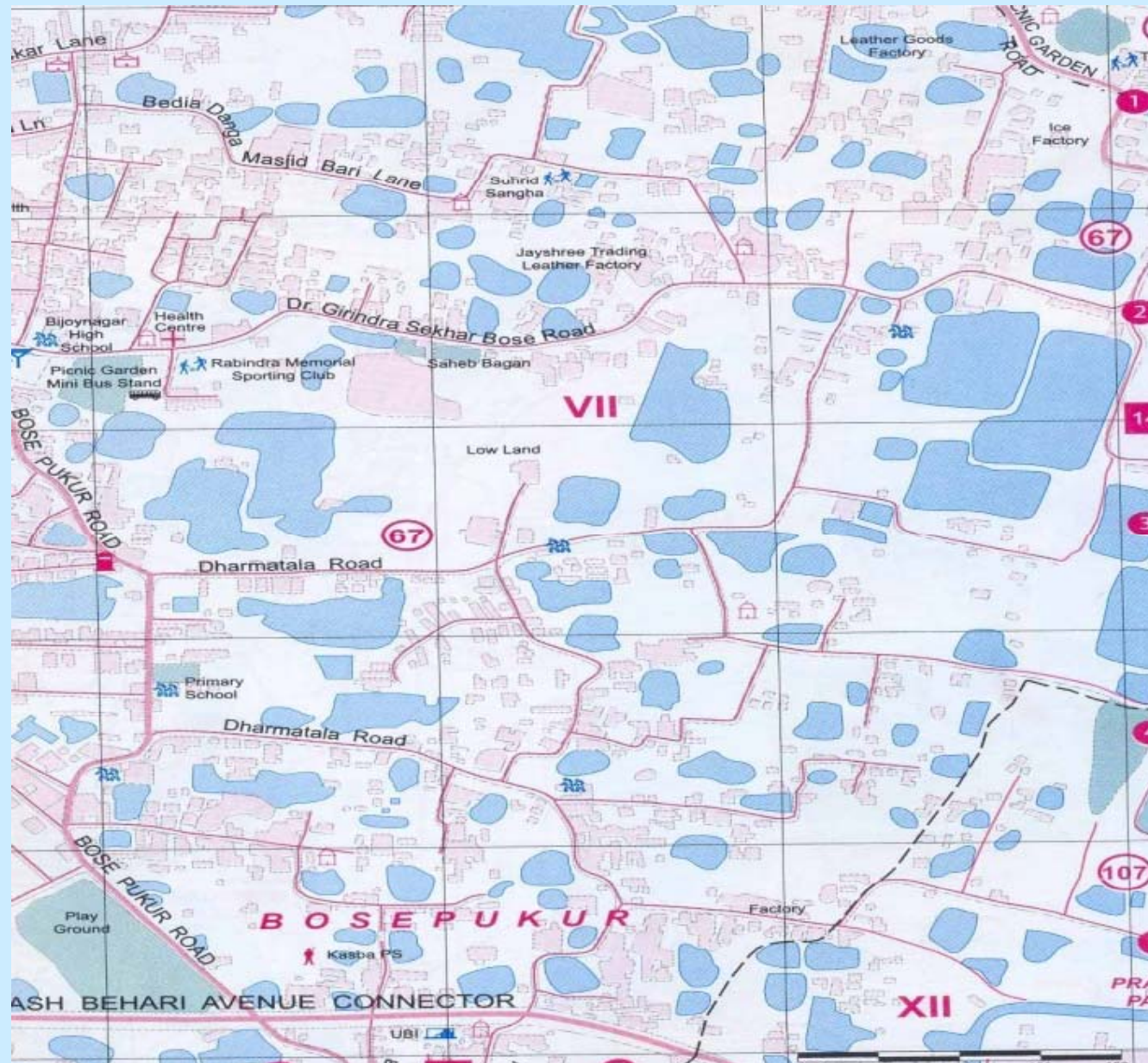
Vasundhara Foundation, Kolkata, India

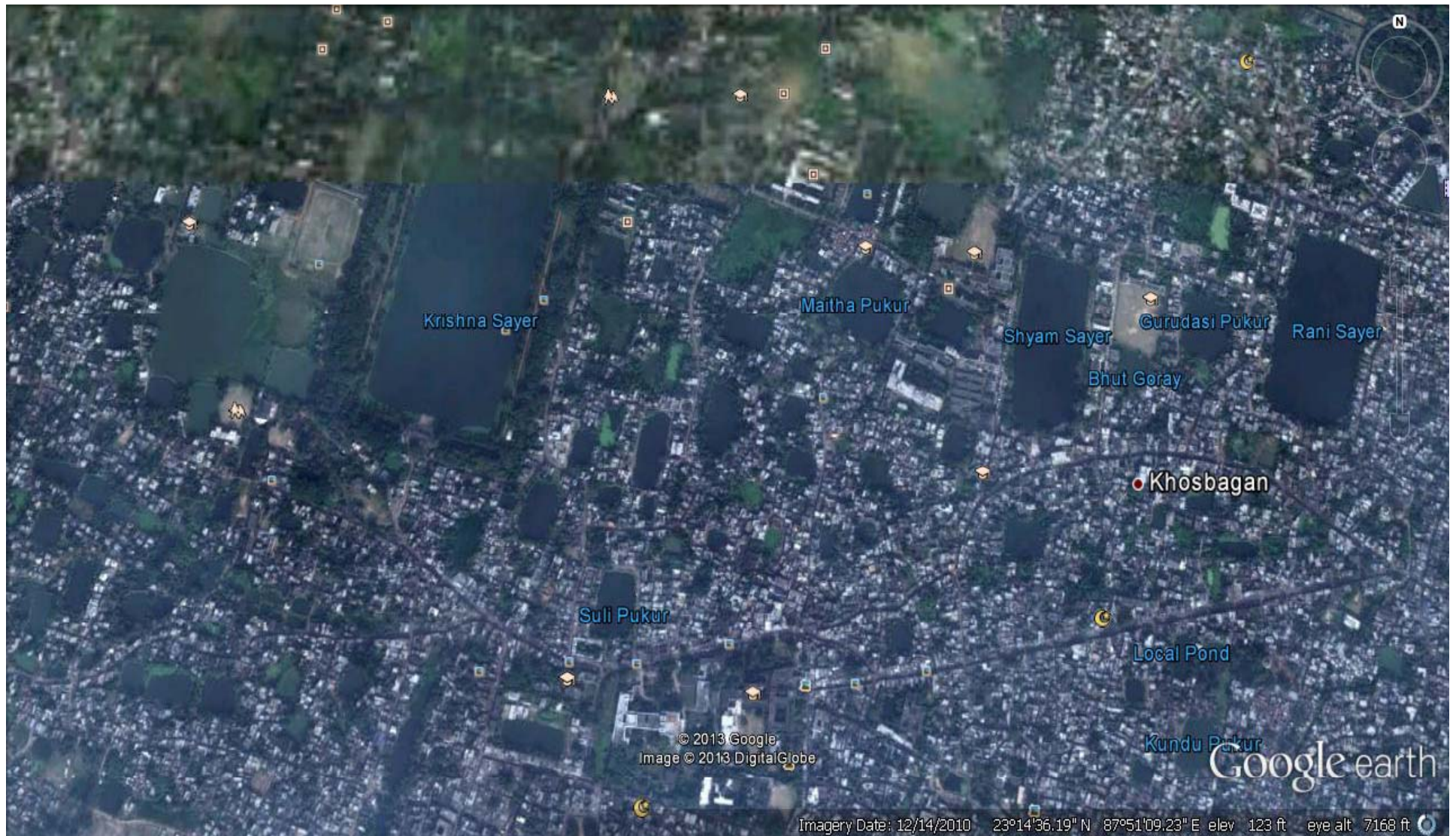




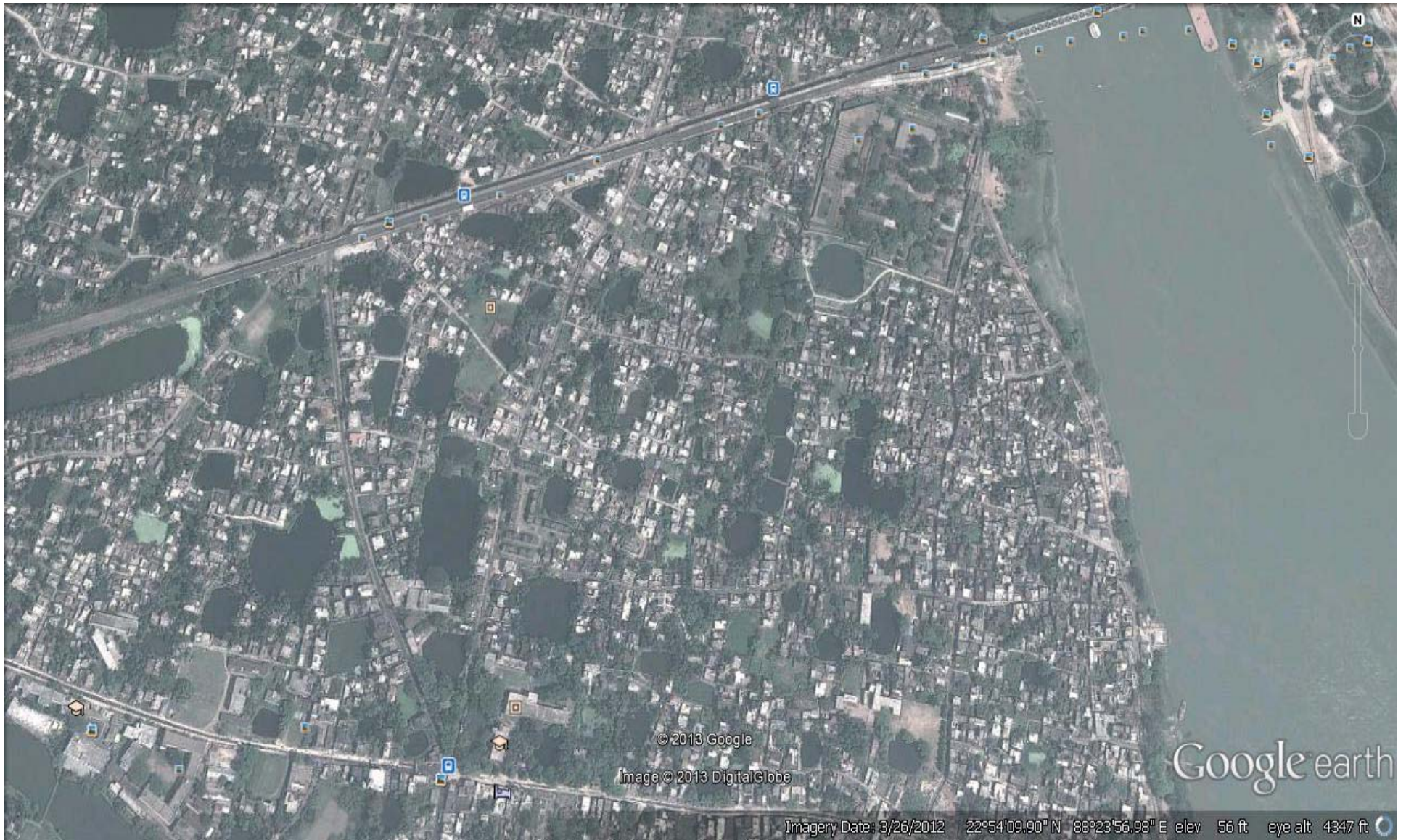
- India is fast getting urbanized. Level of urbanization increased from 27.81% in 2001 Census to 31.16% in 2011 Census
- The growth rate of population in rural and urban areas was 12.18% and 31.80% respectively. Bihar (23.90%) exhibited the highest decadal growth rate in rural population.
- This increase is mostly not a planned one. Thus, Urban India depends heavily upon various types of waterbodies to meet its daily requirement of water.

The City and Its Ponds





BARDHAMAN TOWN



Hugli - Chunchura

Lal Dighi – The city of Kolkata was initiated around this pond. British called it Great Tank



- Kolkata's waterbodies can be classified into three major groups:
- a) East Kolkata wetlands
- b) Two major lakes
- c) Ponds of various sizes numbering around 5000



Lakes, East Kolkata Wetland and hundreds of Ponds in Kolkata⁹

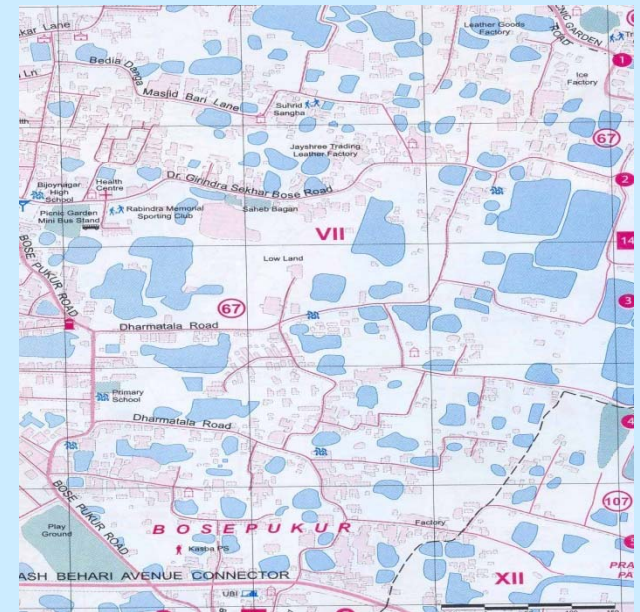
Wetland and Pond

Functions	Wetland	Urban Pond
Location	At the margin of human habitation	Inside Human habitation
User	A specific group of people like fishermen	Different groups of Common people
Size	Covers a wide area	Small but many in numbers
Ecological Importance	Important	Important
Wastewater Treatment	Can be utilised	Should not be utilised
Social importance	Less	Significant
Flood Control	Important role	Not so important
Management Level	Regional	Community

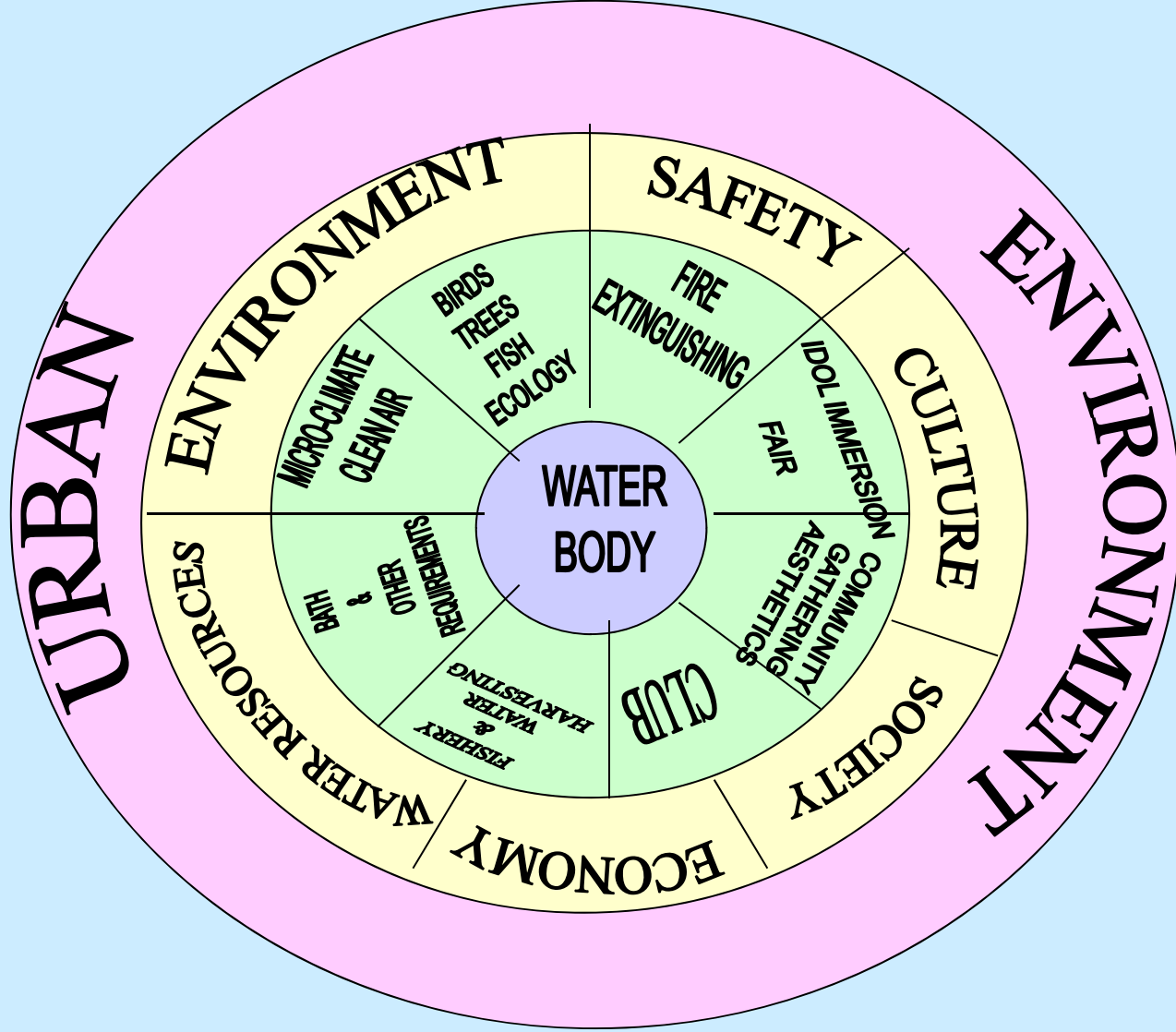
You can *swim* through Kolkata from one *pukur* (pond) to another. There are so many places in Kolkata with '*pukur*' attached to their names; for example *Monoharpukur*, *Ahirpukur*, *Bosepukur*, *Thakurpukur*, *Paddarpukur*, *Talpurpur*, *Keorarpukur*, *Hanspurpur*, *Shyampurpur*, *Muraripurpur*, *Jorarpukur*, *Jhampurpur*, *Beniapukur*, *Fariapurpur*, *Chunapurpur*, *Beniapukur*, *Tanupukur* and more.

HOW MANY PONDS IN KOLKATA?

The actual number of ponds within KMC area is still a guess. The KMC list of ponds showed **3874** ponds in 2006, **1736** ponds in 1997. A detailed map book of Kolkata containing 284 plates by NATMO in 2006 showed **8731**. Counted from Google's satellite imagery of Kolkata was **4889**. It may vary upto 10%, so the number of ponds would vary between **4400 to 5400**. This means about **44%** of the waterbodies have been **filled up in last two decades**.



Year	KMC 1997	KMC 2006	NATMO	Google
No of Ponds	1786	3873	8731	4889



ISSUES

- Public Health
- Environment
- Economy

Urban Pond - A Multiple Resource

- **WATER RESOURCE**
 - # Bathing
 - # Washing
 - # Receptors for rainwater harvesting,
 - # Maintaining local ground water levels.



Urban Pond - A Multiple Resource

ECONOMIC RESOURCE

Pisciculture

- **SOCIETY**

Clubs

Community
Gathering

Morning Walk

- **SAFETY**

Fire Extinguishing



Low Cost Swimming Pool



Urban Pond - A Multiple Resource

•ENVIRONMENT

These water bodies serve the purpose of an open space in the crowded urban localities.

Improving Air Quality

Controlling Micro-Climate



Urban Pond - A Multiple Resource

•BIODIVERSITY

In many cases the banks of these water bodies are the only spaces for development of greenery.

Local natural life – aquatic, avifauna and terrestrial – sustains around these ponds –
A major component of Urban Ecology

Urban Pond - A Multiple Resource

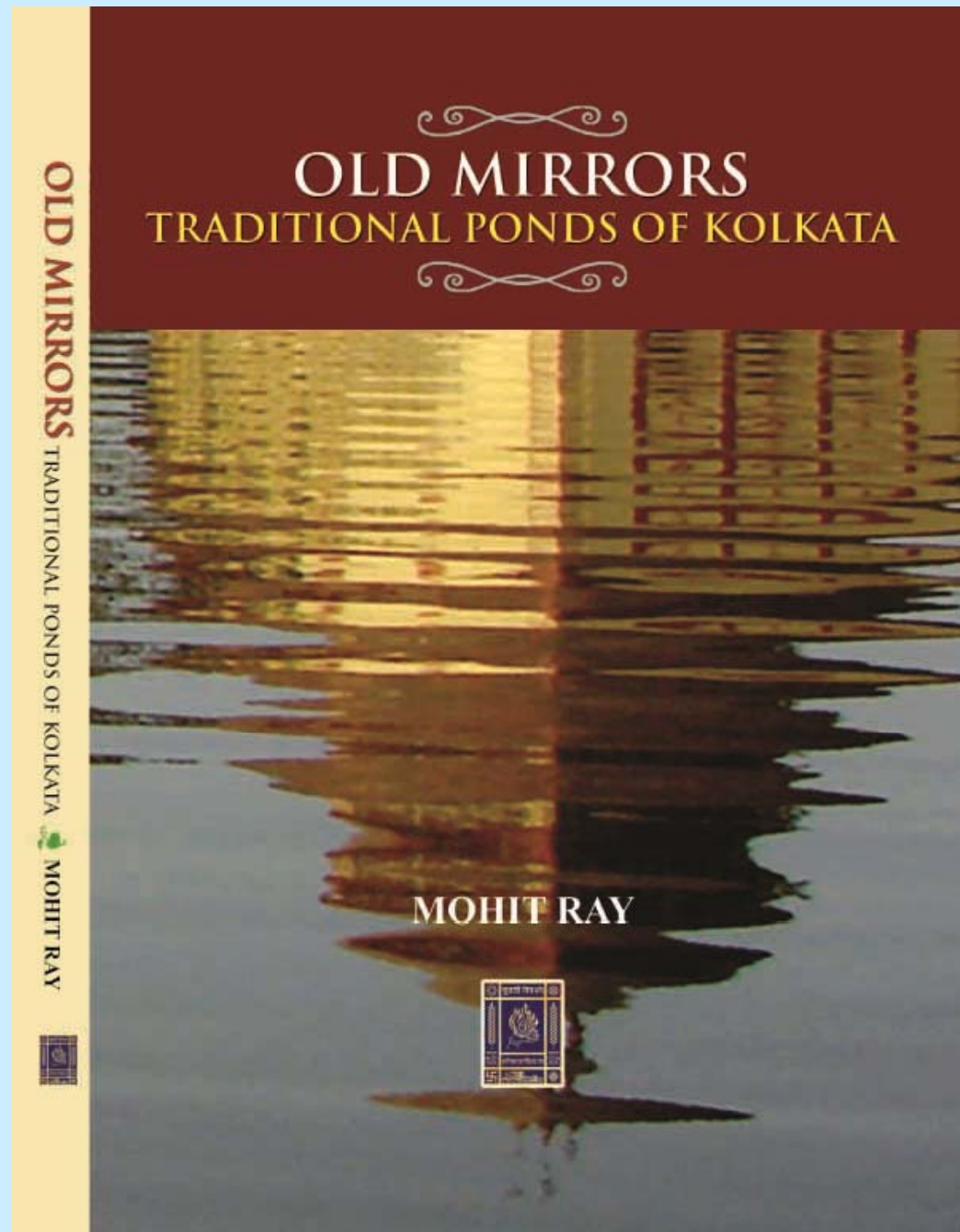
- **CULTURE**
 - # Temples & Heritage Ponds
 - # Fairs
 - # Aesthetics



Photo 10 Heritage pond – Sen Dighi – A pond with 700 years of history

Urban Planning and the Waterbodies - Kolkata

- All Government Plans for development of Kolkata has bypassed the existence of these thousands of ponds.
 - **Calcutta Environmental Management Strategy and Action Plan (CEMSAP 1997) did not include the ponds in its plan**
- KMDA planning of Kolkata : Perspective Plan for CMA: 2011 and Planning for Metropolitan Development 1990 – 2015 have not considered ponds as a resource
- **Kolkata Municipal Corporation (KMC) has no department for all these 5000 waterbodies. It has repaired and rebuilt a number of ponds but it has no plan for their maintenance and operation or any overall management plan.**
 - None of the Universities and Technical Institutions of Kolkata has done any meaningful studies on these vital water resources.



**A book on
HERITAGE
PONDS OF
KOLKATA**

Published by
**Kolkata
Municipal
Corporation**

কলিকাতা পুকুর কথা পরিবেশ ইতিহাস সমাজ • মোহিত রায়

কলিকাতা পুকুর কথা

পরিবেশ ইতিহাস সমাজ

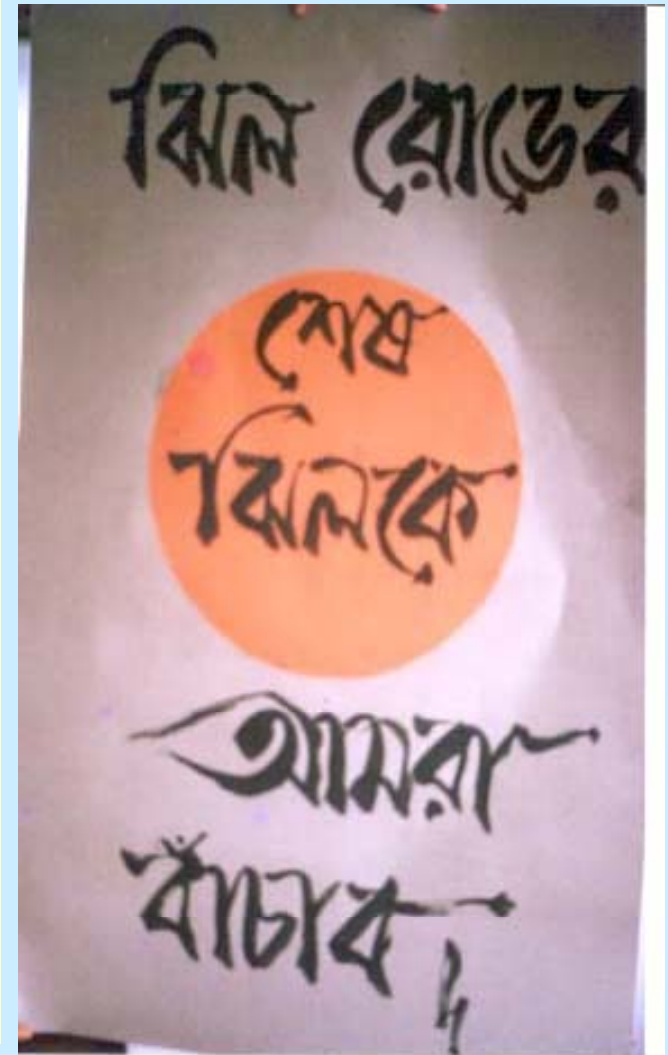
মো হি ত রায়



A book by Mohit Ray
On Kolkata's Ponds.
It contains the water
quality, biodiversity,
history, economics, fish
cultivation, community
management, fights to
save the waterbodies,
politics of
environmental
movement, legal aspects
and management
guideline.

People's Movement to save Waterbodies

- In last two decades the major environmental movement in and around Kolkata has been the movement to save the waterbodies
- Community organisations have led the movement
- There has been no external funding , no central or Foreign NGO intervention.
- There have been a number of success stories. **Vasundhara** has been a part of this movement, both on field and research level



In Lieu of Thanks

Rowing Traditional Boat in Restored Pond

