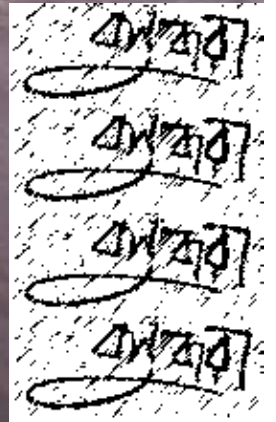




Community Movement for Conservation of Urban Waterbodies Experiences from Kolkata, India

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Lakes, East Kolkata Wetland and hundreds of Ponds in Kolkata

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.



Urban Ponds and Bangladesh

- Number of Important Cities and Towns still have substantial number of ponds.
- According to a survey conducted by District Fisheries Department in 1991, the number of water bodies in **Chittagong city** was **19,250** while the Physical Feature Survey conducted by Chittagong Development Authority in 2006-2007 indicated existence of **4,523** water bodies there.
- **Rajshahi** - The number of water bodies in the city as in 1981 there were **2,171** ponds and the number of ponds became only **729** in 1991. The Rajshahi Development Authority also said, according to its recent data, there are only **313** ponds in the city.
- The city of **Comilla** is known for its ponds once called city of **Tanks and Banks**.

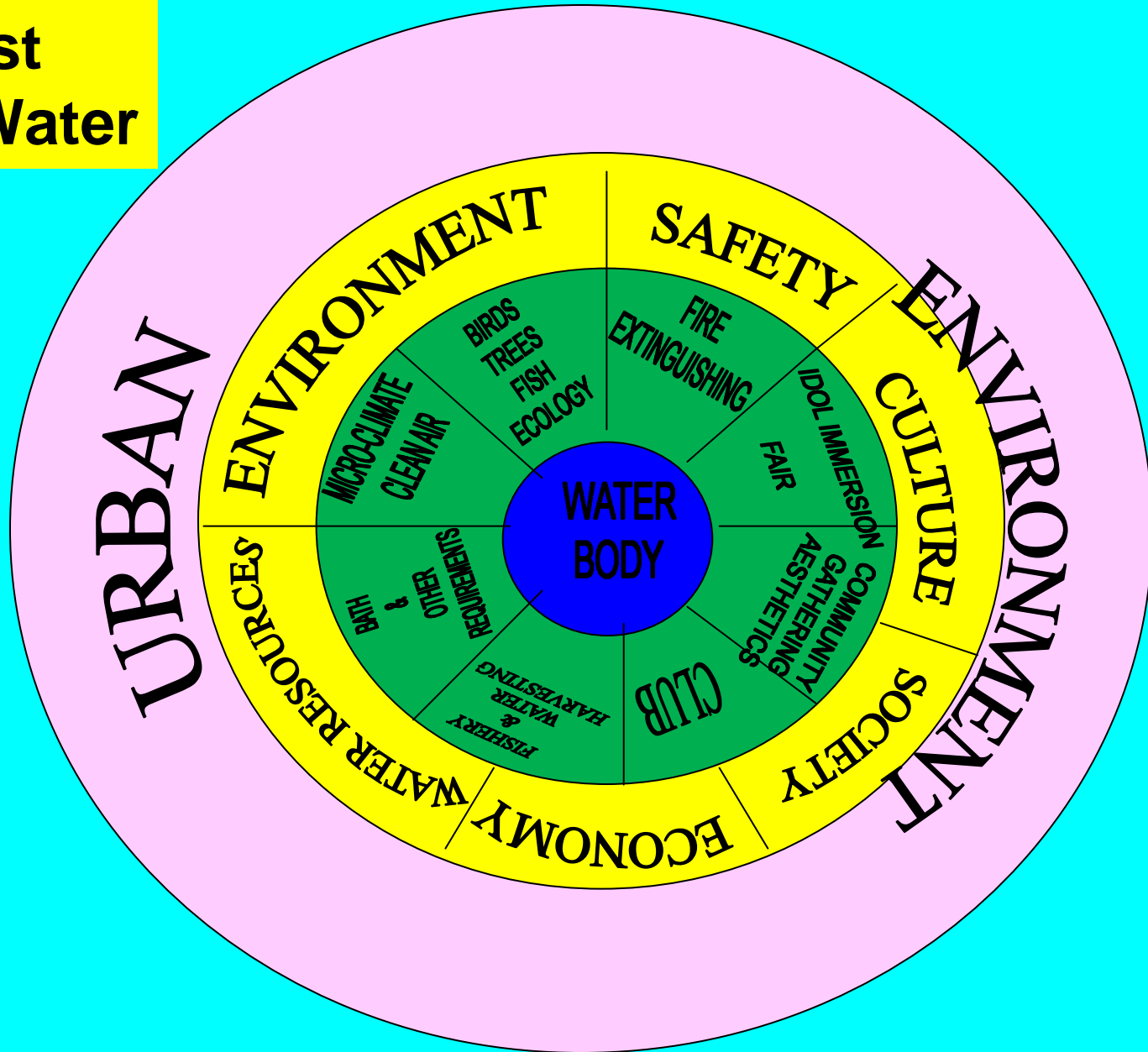
Urbanisation and Waterbodies

- India is fast getting urbanized. This urbanization is mainly a product of demographic explosion and poverty induced rural - urban migration.
- Urban India depends much on the unplanned sector for basic civic amenities such as upon various types of waterbodies to meet its daily requirement of water.
- The requirements fulfilled by these waterbodies, do not get reflected in urban water resource accounting.
- Requirement for more land for housing and other urban expansion, the very existence of urban ponds is 'critically endangered'.
- We take up the case of Kolkata Municipal Area to find out the extent of this importance of the urban waterbodies

Urban Ponds are not just pools of Water

The role of
the ponds
in urban
and peri-
urban
milieu is
multifacete
d.

It has a role
of social,
ecological
and civic
importance



WHO ARE THE USERS – WHAT ARE THE USES

❑ A survey was conducted in 73 ponds sizing 1000 square meter or more to find the number of users and various uses of these ponds.

This is the first ever such survey done.

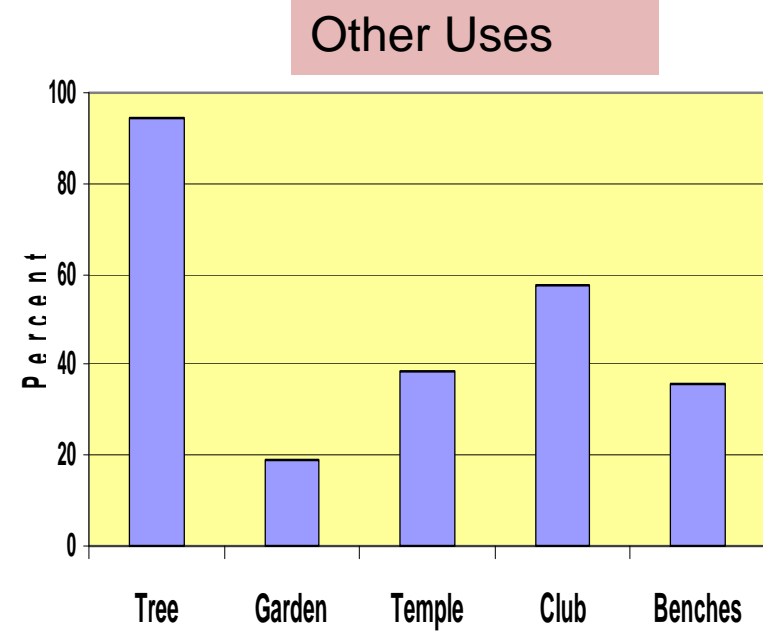
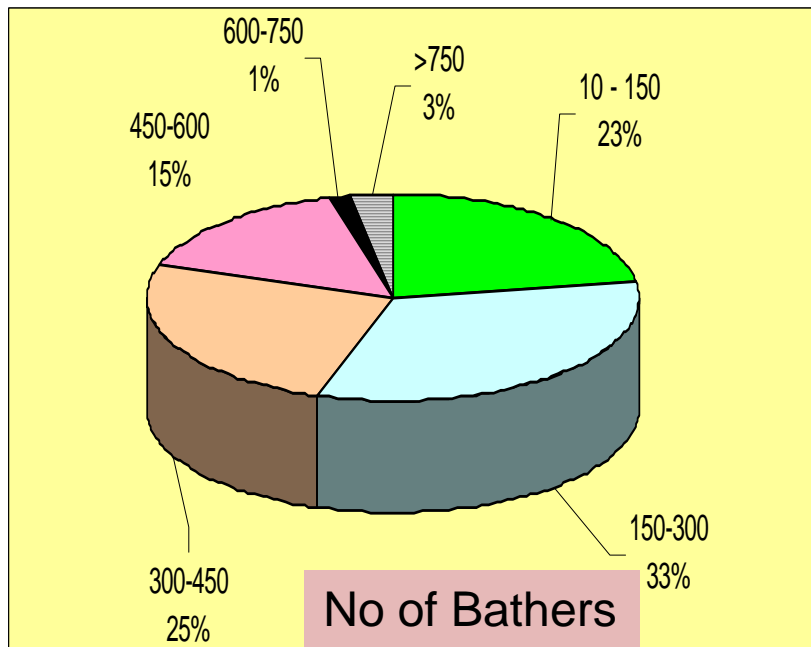
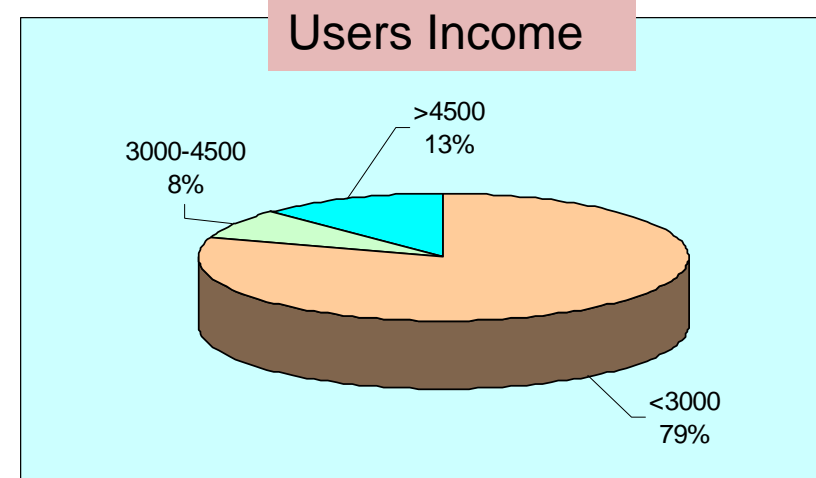
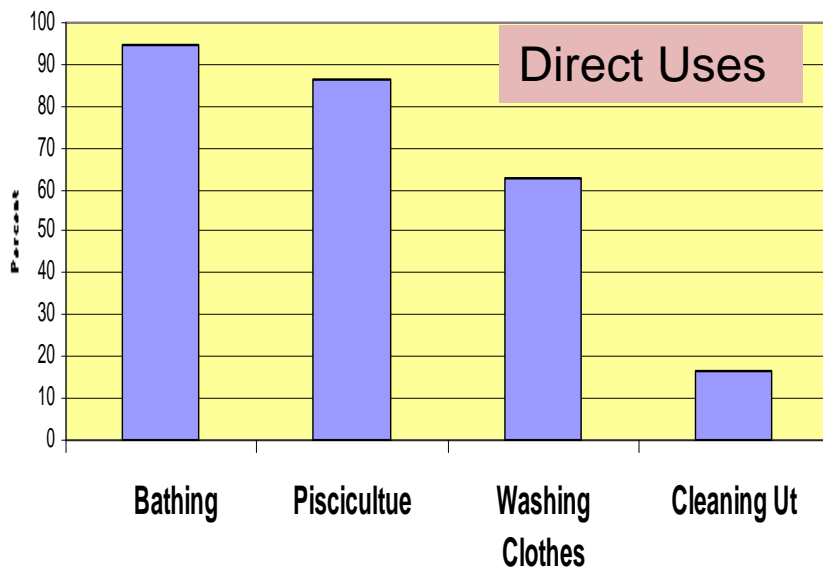
❑ 2088 people using these ponds were interviewed for their use pattern and economic status

❑ Present environmental status were noted

❑ Present management status were noted



Photo 5 Survey of Pond Users





Bathing & Washing



Fish Cultivation



Culture



Biodiversity, Water Harvesting

PONDS ARE WATER RESOURCE FOR URBAN POOR

1 Million Pond Users in Kolkata Everyday

Bathing is the most common activity. Considering total users in 71 ponds in summer period would be 29226. Average user per pond would be 441 persons. Considering 2500 ponds, about half of the ponds in the city, **total number of users** will be about **1027500**. So about **23 percent of the population of Kolkata is dependent on the ponds**.

About 80 percent users being poor,



Fish Economy

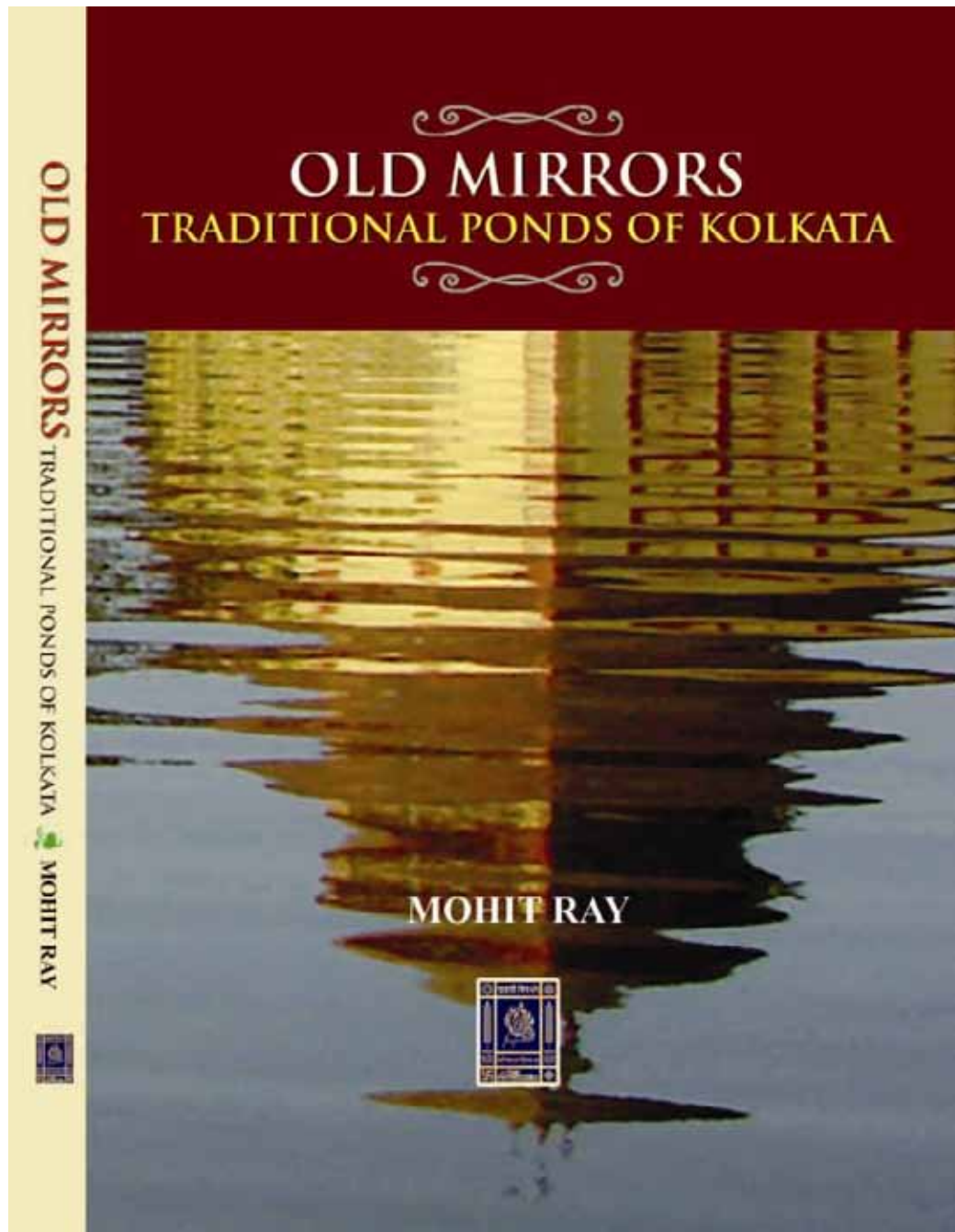
80% of Ponds are used for Pisciculture. Considering a modest annual average fish sale of Rs. 50,000 in a pond of size 0.5 hectare and considering 2500 ponds out of the 4500 ponds where such fish cultivation is done, the annual fish business in the city ponds is worth Rs.125 million (**US\$2.5 million**).

Biodiversity, Water Resource

94.5 % of the ponds have trees around the surveyed ponds. Ponds and surroundings is an important part of Urban ecology. It recharges ground water, stores rainwater.

Culture

There are benches beside the pond for people to sit and relax beside 35.62% ponds. 57.53% of the ponds have clubs beside them. 38.36% of the ponds also have temples beside them. Many of these temples and mosques are quite old having a historical value attached to them.



**A book on
HERITAGE
PONDS OF
KOLKATA**

Published by
**Kolkata Municipal
Corporation**

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.**

Community Movement and Pond Management

- 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 with local popular support.
- There has been no external funding for this and no central NGO intervention. No Foreign NGO or their Indian Beneficiaries have worked on that
- There have been a number of success stories. The community groups are managing the ponds without any government support.
- Vasundhara has been a part of this movement, both on field and research level

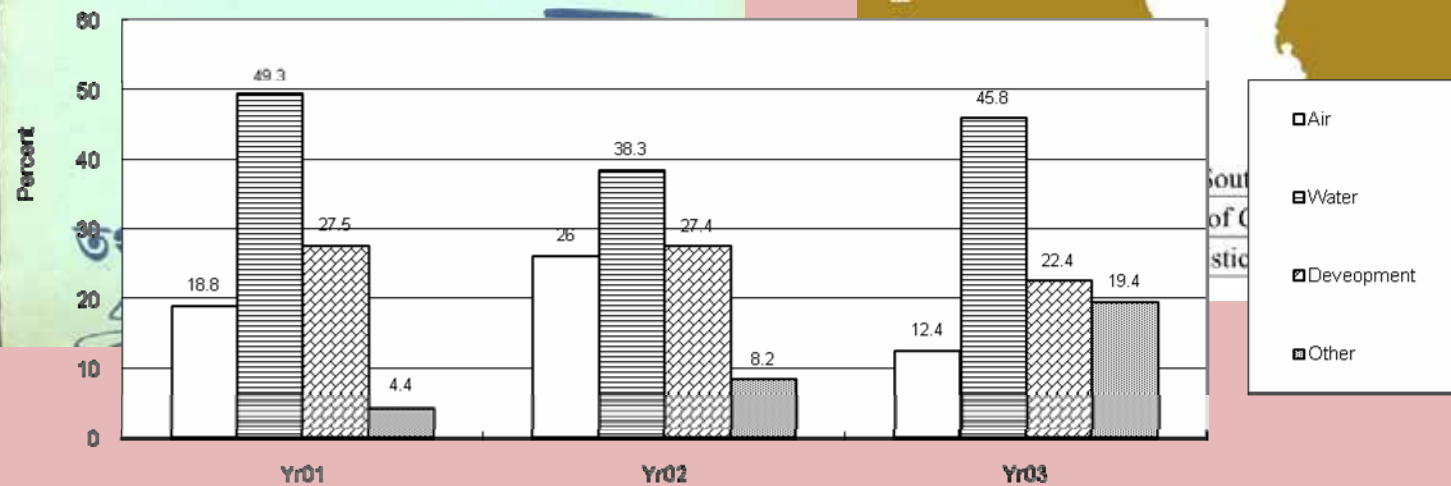
রবি ঠাকুরের পুকুর

যেমন ছিল পুরোনো কলকাতার ছবি। সেই রবিঠাকুরকেই
ফরসা করি। তাঁর মেয়েবেগমার কথা — "জানালার নীচেই একটি ঘাট
খাঁড়ানো পুকুর ছিল। তাহার পূর্বপ্রান্তের ঘাটীরের পায়ে প্রকাণ্ড একটি
"না কাট, — মকিলখানার নাবিকেলগেদী। গরী-বান্দনের কলী ঘামি
"খড়খড়ি খুঁটিয়া লায় সমস্তদিন সেই পুকুরটিকে একঘরনে
"হা বেগিয়া কাটহিয়া বিতাম। সকল হইতে সেবিতাম,
"হ হান করিতে আদিতোছে। তাহাদের কে কখন
প্রত্যেকের ঘানের বিশেষকটুকুও আমায়
"চপিয়া তুলতুল করিয়া ফতমেখে
"হ-না তুল না দিয়া গানছার
"হ; কেহ-না জলের
"জল কাটহিয়া
"হ দিতি

ANNUAL SURVEY OF ENVIRONMENT KOLKATA 2006

H A R A 2 0 0 7

Share of Environmental News Compiled for Annual Surveys (%)



Saving A Dying Jheel at Vivek Nagar



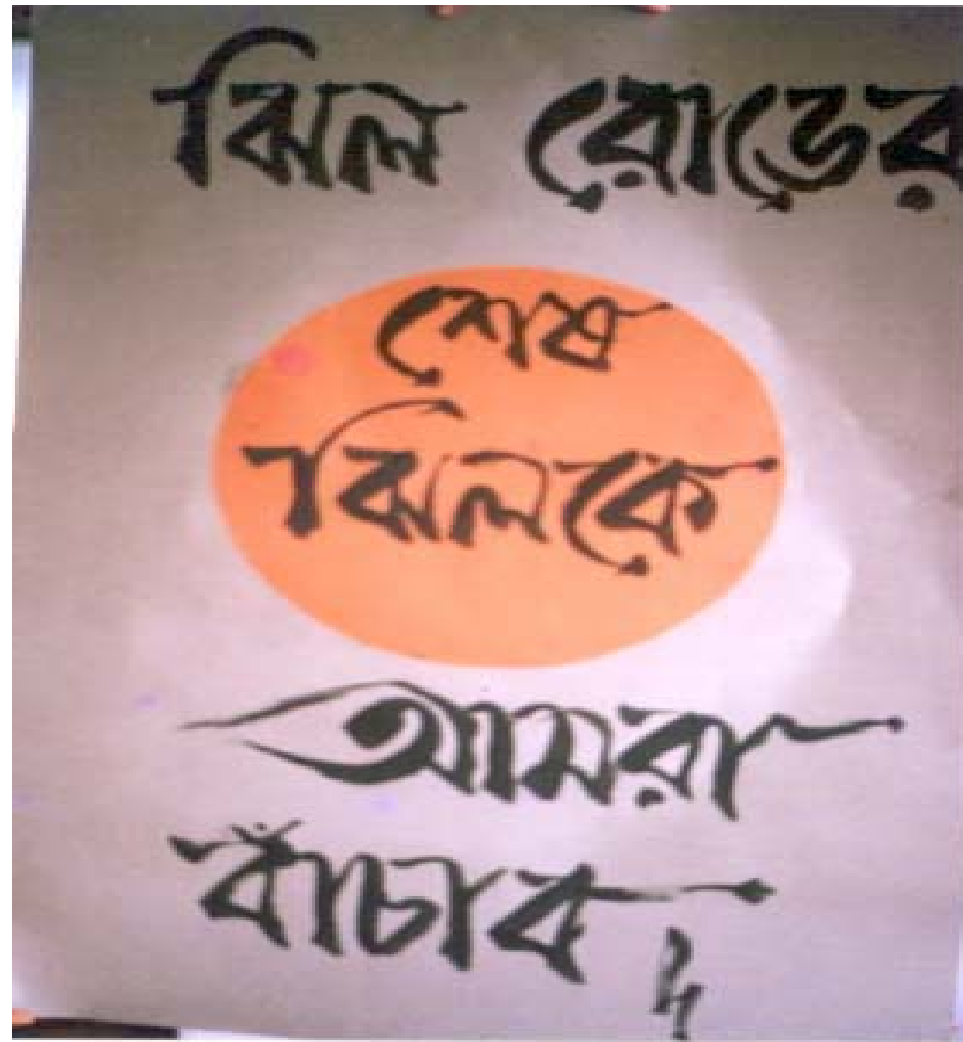
Encroaching the Jheel



Jheel as Waste Dump



The Pledge



Campaign



Reclamation



Encroachment Removed



And Resettled



Restoration



New Jheel



Management of Jheel

- **Jheel Sanrakshan Committee was formed out of a mass movement in April 1999**
- **It campaigned and organised mass support for restoration of the Jheel**
- **It carries out strict vigil to keep Jheel always clean**
- **Prohibiting washing but continuing bathing**
- **Organising a number of workshops with academics, local pond committees and environmentalists on pond improvement**
- **Organising modern cleaning programme after immersion of idols**
- **Involving local school students by organising painting by them on Jheel's boundary wall, planting trees, elocution & quiz competition on environment**

Notice



Providing Clean Water to 700 Bathers Everyday



Fish Cultivation



Eco-friendly Immersion



Eco-friendly Immersion



Photo 16 Separating wastes during Idol Immersion at night – Jheel Road

Volunteers



Photo 18 Community Volunteers during Immersion Ceremony

Eco-friendly Immersion



Photo 17 Crane lifting idols' frames in the next morning – Jheel road

Paintings on Jheel Wall



Community Meeting

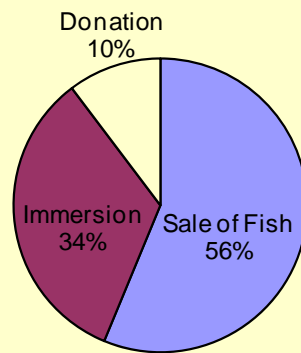


Wetland Day

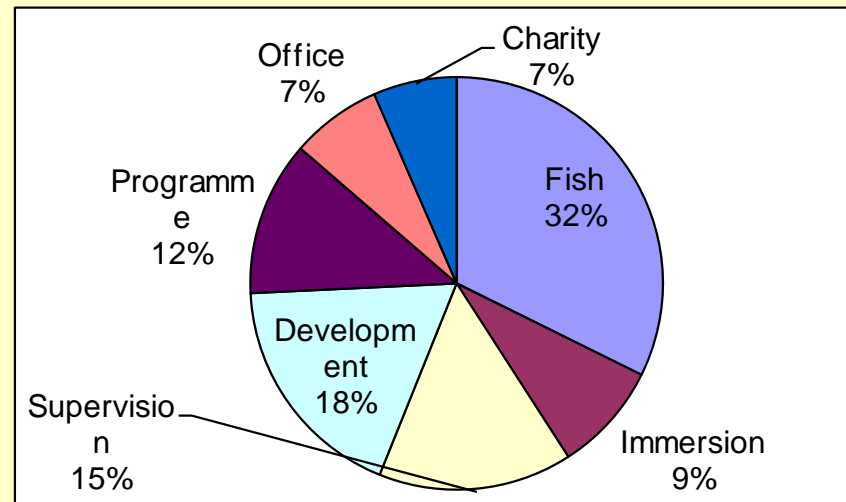


Economic Sustainability

Viveknagar Jheel - Income Pattern



Expenditure



KAJI PUKUR UNNAYAN SAMITY

- Pond was once source of drinking water
- After tubewells became common in the area, it started to be polluted.
- For about 30 years some local toughs carried out fish cultivation without caring for the pond.
- In 2002, 600 local residents formed an organisation, provided money to take back the control of the pond, went to court and got legal order.
- It cleaned the pond, restored the surrounding in ecofriendly way, providing special washing facilities for the poor and earns its revenue from fish cultivation.
- A successful community effort

OLD KAZIPUKUR POND



NEW KAZIPUKUR POND



Golf Garden



Jadu Colony



Panchasayar



Rashmoni Bagan



Photo 12 Rashmoni Bagan Pond (RB) – A well managed pond with garden around

Ganguli Pukur



To compare the ponds managed by community organisations with those of unmanged ones, detailed water quality study throughout the year for five (5) ponds were carried out. The ponds were selected on the basis of number of users, different levels of management, different types of polluting sources and practice of pisciculture.

Salient Features of the Ponds for Water Quality Survey

Pond	Owner-ship	Management	Major Pollution Source	Fish Cultivation	User Control	Visual Impression
Rashmoni Bagan (RB)	Govern-ment	Community Organisation	No external source	Yes	Only bathing without soap	Very Good
Jheel Road (JR)	Private	Community Organisation	No external source	Yes	Only bathing	Good
Rashmoni Bazar (RZ)	Private	Owner and Community Organisation	Domestic Sewage	Yes	No Control	Bad
Chanditala (CT)	Private	Owner	Domestic Industrial Waste	Yes	No Control	Bad
Sil lane (SL)	Private	Owner	Domestic Municipal waste	Yes	No Control	Very Bad

Water Quality Parameters Monitored

General Variables	Indicator to Organic Pollution	Nutrients	Metals & Others	Biological
pH Temperature Odour Colour Turbidity Sechi Disc Depth Total Suspended Solids Total Dissolved Solids	Dissolved Oxygen Biochemical Oxygen Demand (BOD) Chemical Oxygen Demand (COD)	Nitrates Organic Nitrogen Phosphates	Lead Zinc Oil & Grease	Faecal Coliform Total Coliform

Water Quality Index (WQI) is a 100 point scale that summarizes results from a total of eight parameters (pH, DO, BOD, Faecal Coliform, Nitrate, Phosphate, Turbidity and Total dissolved solids, excluding temperature). **The Results show that community managed ponds have better water quality**

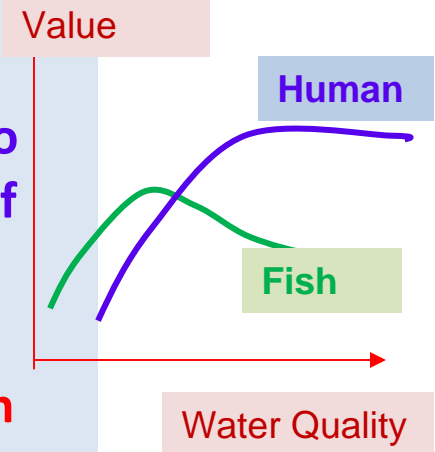
Pond	Annual Avg WQI	Status
Rashmohi Bagan (RB)	64.5	Medium
Jheel (JR)	63.44	Medium
Rashmohi Bazar (RZ)	46.32	Polluted
Chanditala (CT)	49.14	Polluted
Sil Lane (SL)	44.12	Polluted

Community Management Activities

	Rasmoni Bagan Pond	Jheel Road Pond	Kazipukur Pond
	Diversion of all drains	Diversion of all drains	Diversion of all drains
	No disposal of any garbage in or nearby	No disposal of any garbage in or nearby	No disposal of any garbage in or nearby
	No washing of clothes	No washing of clothes	No washing of clothes but alternative arrangement made
	No washing of utensils or animals	No washing of utensils or animals	No washing of utensils or animals
	Bathing without soap only		
	No idol immersion	Idol immersion with restriction	No idol immersion
	No leasing to outsiders for fish cultivation	No leasing to outsiders for fish cultivation	No leasing to outsiders for fish cultivation.
	No use of toxic chemicals for pond cleaning	No use of toxic chemicals for pond cleaning	No use of toxic chemicals for pond cleaning
	Periodic cleaning of ponds	Periodic cleaning of ponds and regular guarding by paid employee	Periodic cleaning of ponds
	Maintaining a garden by the side of the pond	Maintaining a garden by the side of the pond	Maintaining a garden by the side of the pond
	Planting different commercial trees	Planting fruit bearing trees for birds alongwith decorative trees	Planting fruit bearing trees for birds alongwith decorative trees
			Maintaining green pond bank for better biodiversity
	Constant vigilance	Constant vigilance	Constant vigilance
	Social activity by organisation	Social activity by organisation	Social activity by organisation

Major Findings of the Study

- Bathing is the major activity in urban ponds and therefore safe bathing water quality should be the primary management goal.
- Fish cultivation provides economic sustainability of the ponds
- Fish cultivation impacts water quality detrimental to human uses. Thus the pond owners cannot have any interest in improving bathing water quality.
- Community Groups have improved the water quality and also the surrounding environment by eliminating major sources of external pollution e.g. drainage to pond, garbage dumping, washing and cleaning.
- Absence of data about the waterbodies is the major lacuna in urban waterbodies management.
- The present management by the community groups is a spontaneous effort. There is a total absence of any institution to provide technical, managerial or other assistance to these community groups.



Last Words

- The above studies clearly shows that **community managed ponds** are providing better water quality for people and at the same time sustaining biodiversity.
- **The present management of the ponds by the community groups is a spontaneous effort.**
- There is a total absence of any institution to provide technical, managerial or other assistance to these community groups.
- There is also absence of networking between the community groups and therefore there is no exchange of ideas and experiences.
- There is an immediate need for developing water institutions to ensure preservation, improvement and optimum utilization of this critical resource for the people and environment.

In Lieu of Thanks

Rowing Traditional Boat in Restored Pond

