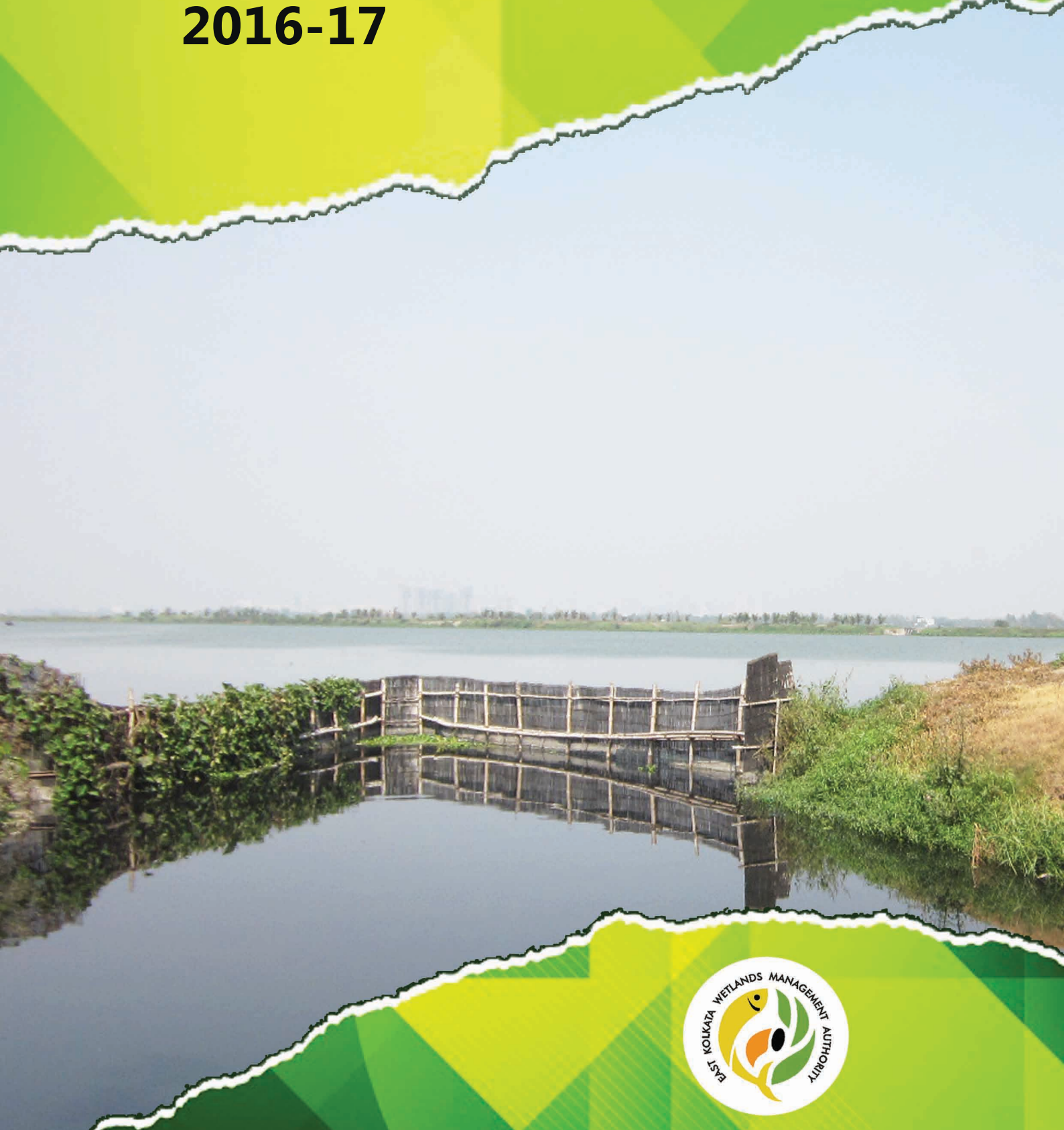
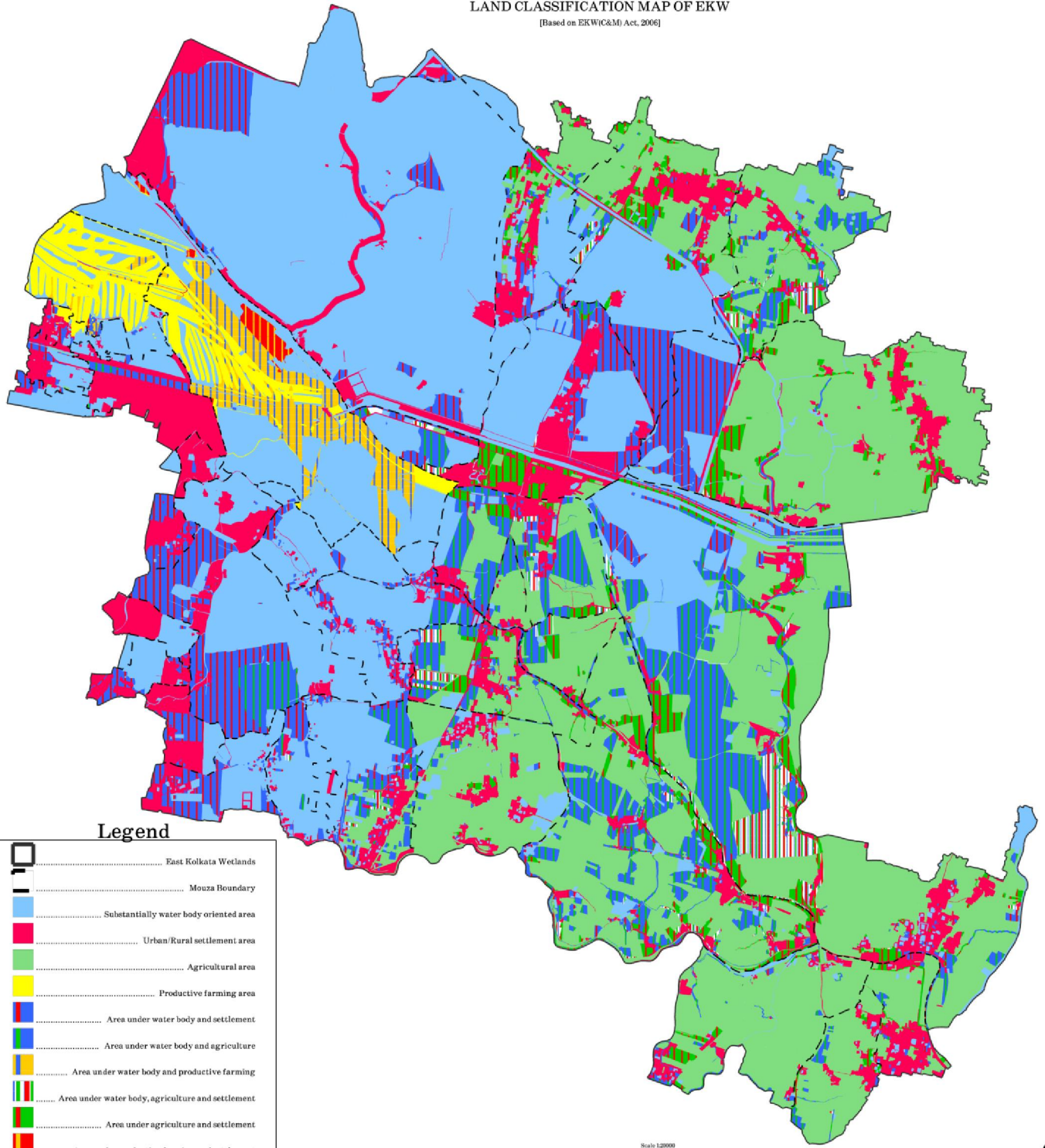


Annual Report 2016-17



**EAST KOLKATA WETLANDS
MANAGEMENT AUTHORITY**

LAND CLASSIFICATION MAP OF EKW
[Based on EKW(C&M) Act, 2006]



Land Classification Map of EKW (Based on EKW(C&M) Act, 2006)

EAST KOLKATA WETLANDS MANAGEMENT AUTHORITY

Annual Report 2016-17

**Department of Environment
Government of West Bengal
2017**

CONTENTS

1. The East Kolkata Wetlands	1
2. The East Kolkata Wetlands Management Authority	2-3
2.1 Constitution of the reconstituted EKWMA	
2.2 Organisational structure	
2.3 Functions and power of the EKWMA	
3. Major activities in the EKWMA	4-7
3.1 Publication of Book: Birds of East Kolkata Wetlands	
3.2 Workshop on East Kolkata Wetlands	
3.3 Field Inspection followed by regulatory action	
3.4 Right to Information	
3.5 Court Cases	
3.5.1 Smt. Radha Sanyal and others vs. State of West Bengal & Ors. (W.P.704(W) of 2012)	
3.5.2 Cases pending before the Hon'ble High Court of Calcutta and the National Green Tribunal, Eastern Zone Bench relating to the EKW	
3.6 Disposal of applications for NOC to the EKWMA	
4. Awareness Generation Activities	8
4.1 World Wetlands Day	
4.2 Educational trips to East Kolkata Wetlands	
5. Finances	9

LIST OF ANNEXURE

- I. The East Kolkata Wetlands (Conservation and Management) (Amendment) Act, 2017
- II. Environment Department Notification No. 163/EN/O-25/2015(Pt-I) dated 03.02.2017
- III. Record of proceeding: Workshop on East Kolkata Wetlands
- IV. EKWMA Order No. CTO/EN/2131(186)/11 dated 09.12.2011
- V. Seven Orders rejecting change of character of land or mode of use in prescribed Form 3 under Rule 9(4) of the East Kolkata Wetlands (Conservation and Management) Rules, 2006
- VI. List of Cases pending before Hon'ble High Court at Calcutta & Hon'ble National Green Tribunal, Eastern Zone Bench relating to EKW

LIST OF TABLES

Table 1	Police Station wise field report followed by regulatory action
Table 2	Synoptic view of the applications disposed of during 2016-17
Table 3	Study trips to EKW
Table 4	Abstract of receipts and expenditure of EKWMA for 2016-17
Table 8	Budget for 2016-17

FRONT COVER AND BACK COVER

Inside front cover: Land Classification Map of EKW

This map has been prepared based on Schedule I of the the East Kolkata Wetlands (Conservation and Management) Act, 2006.

Inside back cover: Some photographs of publication of Book: Birds of East Kolkata Wetlands

1

The East Kolkata Wetlands

East Kolkata Wetlands, the only Ramsar site in West Bengal, is a unique periurban ecosystem. It lies on the eastern fringe of Kolkata, covering an area of about 12500 hectares. Out of the total area, 5852.14 ha is primarily water body oriented area, 4718.56 ha is agricultural land, 602.78 ha is productive farming area and 1326.52 ha is urban / rural settlement area. This Ramsar site has more than 250 water bodies, of varying sizes ranging from 2 ha to over 20 ha. It also supports a resident population of over 1,30,000.

The area had traditionally been used as dumping ground of Municipal Solid Waste of the Kolkata Municipal Corporation, the Dhapa dumping grounds. It has also been traditionally used for disposal of sewage from the metropolis, where the city sewage is treated naturally in the water bodies, which offers a unique system of sewage treatment. These sewage fed water bodies are used for pisciculture, whereby it ensures recovery of resources by producing an estimated 10,500 MT of fish annually in addition to its sewage treatment function. It is often referred to as the “kidney” of Kolkata because of the important role it plays in treating sewage from the metropolis. This wise use of East Kolkata Wetlands has earned its recognition as a Ramsar site in the year 2002.

2

The East Kolkata Wetlands Management Authority

The East Kolkata Wetlands Management Authority (EKWMA) has been constituted under section 3 of the East Kolkata Wetlands (Conservation and Management) Act, 2006 for conservation and management of the East Kolkata Wetlands (EKW) and for matters connected therewith and incidental thereto. In order to bring forth better coordination amongst the different departments included in the EKWMA and also to streamline the decision making process of the EKWMA, sub-section 2 of section 3 of the EKW(C&M) Act, 2006 has been amended. The East Kolkata Wetlands (Conservation and Management) (Amendment) Act, 2017 is at **Annexure I**.

2.1 Composition of the reconstituted EKWMA

The EKWMA is now consisting of thirteen (13) members, namely:-

- | | |
|---|------------------|
| • Minister-in-Charge, Department of Environment,
Government of West Bengal | Chairperson |
| • Chief Secretary to the Government of West Bengal | Member |
| • Additional Chief Secretary or the Principal Secretary or the Secretary,
as the case may be, Department of Environment, GoWB | Member-Secretary |
| • Additional Chief Secretary or the Principal Secretary or the Secretary,
as the case may be, Department of Land and Land Reforms and Refugee
Relief and Rehabilitation, GoWB | Member |
| • Additional Chief Secretary or the Principal Secretary or the Secretary,
as the case may be, Department of Fisheries, GoWB | Member |
| • Additional Chief Secretary or the Principal Secretary or the Secretary,
as the case may be, Department of Forests, GoWB | Member |
| • Additional Chief Secretary or the Principal Secretary or the Secretary,
as the case may be, Department of Panchayats and Rural Development | Member |

- Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Irrigation and Waterways Member
- Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Tourism Department Member
- Four experts nominated by the State Government, each in the areas of wetland ecology, hydrology, fisheries and socio-economics Members

2.2 Organisational structure

The EKWMA functions from its office at Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106 (see [Annexure II](#)). Day to day activities of the EKWMA is being carried out through fifteen (15) employees under the supervision of Shri Sandipan Mukherjee, IFS, Chief Technical Officer (CTO).

2.3 Functions and powers of the EKWMA

Some of the important functions and powers as conferred in the East Kolkata Wetlands (Conservation and Management) Act, 2006 are:

- * Demarcating the boundaries of the East Kolkata Wetlands
- * Taking measures and preventing unauthorized development project or use or act
- * Directing demolition or alteration of any hoarding, post, etc. erected or exhibited illegally
- * Preventing any mining, quarrying, blasting to protect and conserve the EKW
- * Undertaking measures to abate pollution, and conserving biodiversity
- * Preparing action plans and implementing and monitoring the activities
- * Raising awareness on wetlands in general and EKW in particular.
- * Promoting conservation principles – like sewage fed fisheries and ecotourism
- * Conducting inquiry or scientific study, promoting research, networking with other Ramsar sites.
- * Constituting expert committee for any purpose of this Act.
- * Granting sanction for change of character or mode of use of a land if the change is for improvement of the environment

3

Major Activities in the EKWMA During 2016-17

3.1 Publication of Book: Birds of East Kolkata Wetlands

On 31st January, 2017 Shri Sovan Chatterjee, Hon'ble Minister-in-Charge, Department of Environment, Government of West Bengal released the book "Birds of East Kolkata Wetlands". This publication is the first attempt of the EKWMA not only to the nature lovers but also to every citizen concerned with the wetland. The book is a pictorial depiction with a brief description of the birds sighted in East Kolkata Wetlands.

3.2 Workshop on East Kolkata Wetlands

The East Kolkata Wetlands Management Authority organized a workshop on East Kolkata Wetlands on 2 -3 March, 2017. The objective of the workshop was to review the present status of the wetland, to evolve a wise use plan, strengthen conservation measures, to review the existing statues.

Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat, representatives from Ministry of Environment, Forest and Climate Change, Govt. of India were present with Hon'ble Minister-in-Charge, Department of Environment, Principal Secretary, Department of Environment, Chief Technical Officer, EKWMA, other government officers, representatives from NGOs, and other invitees.

A copy of record of proceeding is at **Annexure III.**

3.3 Field inspection followed by regulatory action

In order to measure any unauthorized development project in, or unauthorized use of, or unauthorized act on the East Kolkata Wetlands and as per requirement of the EKWMA field visits are conducted as and when required. After inspection, field report is submitted to the CTO. During the financial year 2016-2017, there were 66 field inspections. Based on field inspection reports, if necessary, show cause /stop work notice is served under section 11(1) of the East Kolkata Wetlands (Conservation and Management) Act, 2006. If required complaint in form of FIR against offenders/violators is lodged with the concerned police station within whose jurisdiction the illegal activity is going on. Police station wise field inspection report submitted, show cause/ stop work notices issued and complaints registered during the financial year 2016-2017 are given in following table:

District	Police Station	Field inspection report submitted	Show cause/ stop work notices issued	FIR lodged
		2016-2017	2016-2017	2016-2017
24 Parganas (South)	Sonarpur	27	4	15
	Kolkata Leather Complex	35	11*	19
	Purba Jadabpur	1	0	1
	Anandapur	1	0	0
	Pragati Maidan	2	0	0
Total		66	15	35

* One stop work notice was issued with direction to restore the land to its original character

Table 1: Police station wise field report followed by regulatory action

3.4 Right to Information

The basic object of the Right to Information (RTI) Act, 2005 is to empower the citizens, promote transparency and accountability in the working of the Government, contain corruption, and make the democracy work for the people in real sense. Being a 'Public Authority', the EKWMA is under obligation to furnish information sought for in various RTI applications that are received. During this financial year, 27 cases under RTI Act, 2005 were received and subsequently replied.

3.5 Court Cases

3.5.1 Smt. Radha Sanyal and others vs. State of West Bengal and others (W.P.704(W) of 2012)

Before the Hon'ble High Court at Calcutta, Smt. Radha Sanyal along with six other petitioners had challenged the order dated 9th December, 2011 issued by the Chief Technical Officer (Respondent No. 2) communicating the resolution adopted in the 17th meeting of the EKWMA held on 28.09.2011 whereby it was resolved that no new No Objection Certificate (NOC) for conversion of the land shall be granted by the Authority and all NOCs granted so far shall be revoked on the ground that such blanket order cannot be passed in view of Rule 9 of the East Kolkata Wetlands (Conservation and Management) Rules, 2006 which postulates that the Collector shall after taking necessary actions as required under the West Bengal Land Reforms Act, 1955 and Rules made thereunder, either pass an order of change of character or mode of use of land or reject the application.

Copy of the order dated 09.12.2011 is at **Annexure IV.**

As the petitioners had filed Form 1 under Rule 8(1) of the East Kolkata Wetlands (Management and Conservation) Rules, 2006 for change of character or mode of use of land and since the EKWMA referred the applications to the Collector, South 24 Parganas (Respondent No. 3) for taking necessary action under Section 4C of the West Bengal Land Reforms Act, 1955, the Hon'ble High Court in its order dated 21.03.2012 disposed of the writ petition by directing the Collector, 24 Parganas (South), the respondent no.3, to dispose of the applications filed by the petitioners by passing a reasoned order after giving an opportunity of hearing to the petitioners and other interested parties.

In compliance with the said order the District Magistrate and Collector, South 24 Parganas passed an Order dated 08.02.2017 by rejecting their application for conversion or mode of use of land in Plot No. 37 (R.S. Dag No. 9) of Mouza Jagatipota, JL. No. 3 on the ground that "before getting the final order from the EKWMA by grating sanction in prescribed Form 3 under Rule 9(4) of the East Kolkata Wetlands (Management and Conservation) Rules, 2006, the petitioners have been continuing constructions. It is a clear case of violations of the

provisions of the said Act and Rules of the EKW and the aforesaid order dated 09.12.2011 of the East Kolkata Wetlands Management Authority.”

After receiving the decision, the EKWMA issued Order rejecting change of character of land or mode of use in Prescribed Form 3 under Rule 9(4) of the East Kolkata Wetlands (Management and Conservation) Rules, 2006. Copy of the seven Orders is at **Annexure V**.

3.5.2 Cases pending before the Hon'ble High Court of Calcutta and the National Green Tribunal, Eastern Zone Bench relating to EKW

The list of cases pending before the Hon'ble High Court of Calcutta and the National Green Tribunal, Eastern Zone Bench relating to East Kolkata Wetlands is given in **Annexure VI**.

3.6 Disposal of application for NOC to the EKWMA

According to Section 10 of the East Kolkata Wetlands (Management and Conservation) Act, 2006 any person holding a land in the East Kolkata Wetlands may apply for change of character or mode of use of the land to the EKWMA in Form 1 under rule 8(1) of the East Kolkata Wetlands (Management and Conservation) Rules, 2006.

During 2016-17, three applications made under Form 1 were disposed of by rejecting the application. Synoptic view of the applications is given in the following table:

Name of the applicant	Land details	Purpose of application	Decision
Mr. Anup Santra and Mrs Manasi Santra Das. 118-C/A, Ananada Palit Road, Entally, Kolkata 700014	LR Dag no. 155 of Mouza Ranabhutia, JL No. 6, P.S. Sonarpur	Land conversion from “ <i>Bil</i> ” to “ <i>Bastu</i> ” and construction of residential building	Rejected
Shri Prafulla K Mondal, S/o Late Niranjan Mondal, Vill. Atghara, P.O. Dhalua, PS Sonarpur, Dist. South 24 Parganas	LR Dag no. 143 and 186 of Mouza Atghara, JL No. 5, P.S. Sonarpur	Land conversion from “ <i>Bil</i> ” to “ <i>Bastu</i> ” and construction of residential building	Rejected
Shri Rudra Prosad Sikdar and Shri Subha Brata Sikdar S/o Gyanendra Nath Sikdar, C/2/1 Rabindra Pally, PS Jadavpur, Kolkata 700086	LR Dag no. 143 and 186 of Mouza Atghara, JL No. 5, P.S. Sonarpur	Land conversion from “ <i>Bil</i> ” to “ <i>Bastu</i> ” and construction of residential building	Rejected

Table 2: Synoptic view of the applications disposed of during 2016-17

4

Awareness Generation Activities

4.1 World Wetlands Day

World Wetlands Day (WWD) is observed on 2nd February every year all over the world to commemorate the signing of Ramsar Convention on Wetlands of International Importance in 1971. In 2017, the theme of WWD was “Wetlands for Disaster Risk Reduction”. Ministry of Environment, Forest and Climate Change was identified Bhoj-Wetland-A Ramsar Site, Bhopal, M.P. for one day workshop on conservation of wetlands on the above theme.

4.2 Educational trips to East Kolkata Wetlands

Students from different educational institutes have visited the East Kolkata Wetlands for educational purposes at different intervals. The following table presents the abstract.

Date	Purpose	Participants
December, 2016	Educational field visit to the East Kolkata Wetlands	Students of B.Sc. Part I Environmental Science (Honors) of Netaji Nagar College for Women, Kolkata.
February, 2017	Visit to Waste Recycle Region	Prof Jean Simonis, Department of Hydrology, University of Zululand
March, 2017	Study Trip to the East Kolkata Wetlands	Students of B.Com 2 nd Year, from Department of Commerce, J. D. Birla Institute

Table 3: Educational trips to EKW

5

Finances

In terms of section 13 of the East Kolkata Wetlands (Conservation and Management) Act, 2006 the EKWMA has to maintain proper accounts which are audited by the Accountant General, West Bengal. Abstract of receipts and expenditure, and Budget Estimate of EKWMA for the period of 2016-2017 are given at Table 4 and Table 5 respectively.

Financial Year	Name of Head	Opening Balance (Rs.)	Receipts (Rs.)	Expenditure (Rs.)	Closing Balance (Rs.)
2016-2017	3435-03-102-SP-002-V-31-01	0.00	29,26,437.00	29,26,437.00	0.00
	3435-03-102-SP-002-V-31-02	41,77,793.00	15,00,000.00	24,84,780.00	31,93,013.00

Table 4: Abstract of receipts and expenditure of EKWMA for 2016-17

Financial Year	Name of Head	Budget Estimate (Rs.)
2016-2017	3435-03-102-SP-002-V-31-01	60,00,000.00
	3435-03-102-SP-002-V-31-02	20,00,000.00

Table 5: Budget for 2016-17

The



Kolkata Gazette

सत्यमेव जयते

Extraordinary
Published by Authority

PHALGUNA 26]

FRIDAY, MARCH 17, 2017

[SAKA 1938

PART III—Acts of the West Bengal Legislature.

**GOVERNMENT OF WEST BENGAL
LAW DEPARTMENT**

**Legislative
NOTIFICATION**

No. 304-L.—17th March, 2017.—The following Act of the West Bengal Legislature, having been assented to by the Governor, is hereby published for general information:—

West Bengal Act V of 2017

**THE EAST KOLKATA WETLANDS (CONSERVATION AND
MANAGEMENT) (AMENDMENT) ACT, 2017.**

[Passed by the West Bengal Legislature.]

[Assent of the Governor was first published in the *Kolkata Gazette*,
Extraordinary, of the 17th March, 2017.]

An Act to amend the East Kolkata Wetlands (Conservation and Management) Act, 2006.

WHEREAS it is expedient to amend the East Kolkata Wetlands (Conservation and Management) Act, 2006, for the purpose and in the manner hereinafter appearing;

West Ben. Act VII
of 2006.

It is hereby enacted in the Sixty-eighth Year of the Republic of India, by the Legislature of West Bengal, as follows:—

Short title and
commencement.

1. (1) This Act may be called the East Kolkata Wetlands (Conservation and Management) (Amendment) Act, 2017.

(2) It shall come into force on such date as the State Government may, by notification in the *Official Gazette*, appoint.

*The East Kolkata Wetlands (Conservation and Management)
(Amendment) Act, 2017.*

(Section 2.)

Amendment of
section 3 of West
Ben. Act VII of
2006.

2. For sub-section (2) of section 3 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the following sub-section shall be substituted:—

“(2) The Authority shall consist of the following Members:—

- | | |
|--|-------------------|
| (i) Minister-in-Charge, Department of Environment, Government of West Bengal, | Chairperson; |
| (ii) the Chief Secretary to the Government of West Bengal, | Member; |
| (iii) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Environment, Government of West Bengal, | Member-Secretary; |
| (iv) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Land and Land Reforms and Refugee Relief and Rehabilitation, Government of West Bengal, | Member; |
| (v) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Fisheries, Government of West Bengal, | Member; |
| (vi) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Forests, Government of West Bengal, | Member; |
| (vii) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of <i>Panchayats</i> and Rural Development, | Member; |
| (viii) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Irrigation and Waterways, | Member; |
| (ix) the Additional Chief Secretary or the Principal Secretary or the Secretary, as the case may be, Department of Tourism, | Member; |
| (x) four experts to be nominated by the State Government each in the areas of wetland ecology, hydrology, fisheries and socio-economics, | Members.”. |

By order of the Governor,

MADHUMATI MITRA,
Secy. to the Govt. of West Bengal,
Law Department.

Government of West Bengal
Department of Environment
Pranisampad Bhaban, 5th Floor, LB-2, Sector-III, Kolkata-700 098.

No ::163/EN/O-25/2015(Pt-I)

Kolkata the 03rd February 2017.**NOTIFICATION**

It is hereby notified that the Environment Department has been shifted from the address of Poura Bhavan, 415/A, FD-Block, Sector-III, Salt Lake, Kolkata-700 106 to the new address as Pranisampad Bhaban, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata-700 098 w.e.f 31.01.2017.

All correspondences will henceforth be made in the new address as mentioned above.

By order of the Governor

Sd/-S.Nayak
Deputy Secretary to the
Government of West Bengal

No ::163/1(14)-EN/O-25/2015(Pt-I)

Kolkata the 03rd February 2017.

Copy forwarded for information and necessary action to :

- 1) The Addl. Chief Secretary /Principal Secretary
Secretary.....*Science & Technology* Deptt.
- 2) The Secretary to the Hon'ble Governor, West Bengal
- 3) The Divisional Commissioner.....Division
- 4) The District Magistrate.....District
- 5) The P.S to Hon'ble Chief Minister
- 6) The Ministry of Environment, Forest & Climate Change, Govt. of India.
- 7) The Commissioner, Kolkata Municipal Corporation, 5, S.N. Banerjee Road, Kolkata.
- 8) The Commissioner, Bidhannagar Municipal Corporation
- 9) The Chairman, RTI Commission
- 10) The Chairman, PSC West Bengal
- 11) The Chairman, , West Bengal
- 12) Office of the SRO, Chinsurah/ Jalpaiguri/ Kolkata.
- 13) The Pay & Accounts Officer, Pay & Accounts Office-III.
- 14) WBSEDC Ltd., / Telephone- BSNL Office/ Vigilance Commission.

ofc

Sd/-S.Nayak

Deputy Secretary to the
Government of West Bengal

Workshop on East Kolkata Wetlands Record of Proceeding



*Department of Environment
Government of West Bengal
2 - 3 March, 2017*

CONTENTS

Page No.

BACKGROUND	1-2
WORKSHOP INAUGURATION	3-13
Welcome address by Shri Arnab Roy, Principal Secretary, Environment Department	4
Address by Dr. Kalyan Rudra, Chairman, West Bengal Pollution Control Board	5
Address by Shri Chandan Singh, Deputy Director, NRCD, MoEF&CC	6
Address by Dr. M. Ramesh, Joint Director, NRCD, MoEF&CC	7
Address by Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat	8-11
Address by Shri Sovan Chatterjee, Hon'ble MIC, Environment, Govt. of West Bengal	12
Vote of thanks by Shri Sandipan Mukherjee, CEO, Environment Department	13
TECHNICAL SESSION 1	14-25
REVIEW OF EAST KOLKATA WETLANDS-ACTS, RULES & CONSERVATION EFFORTS	
Introduction and background - <i>Shri Arnab Roy, Principal Secretary, Environment Department</i>	14-15
Present status of fisheries and future plans and prospects – present and future in EKW – <i>Shri P. K. Misra, Secretary, Fisheries Department</i>	16-17
Present status of sewage Fed Irrigation – needs for improvement in EKW – <i>Shri Kalyan Kumar Dey, Executive Engineer, Calcutta Drainage Outfall Division</i>	18-19
Present practice of sewage fed fisheries – <i>Shri Sasidulal Ghosh, Secretary, Fish Producers' Association</i>	20-25
TECHNICAL SESSION 2	26-41
NEED FOR CHANGES IN THE STATUTES AND PRACTICES	
Introduction and background - <i>Shri Sandipan Mukherjee, Chief Environment Officer</i>	26
Need for changes in the statutes in view of development plans – <i>Shri Subhasish Chattopadhyay, DG(SWM) and Shri Partha Pratim Saha of KMC</i>	27-33
Land classification, change of land use & conservation of wetlands – <i>Smt. Lalita Laxmi, Joint Secretary, Land and Land Reforms Department</i>	34-36
Approach to management of EKW and need for changes in the statutes – <i>Shri Aresh Sengupta, Research Coordinator, CIRA</i>	37-39
Livelihood prospects – changes in statutes to enhance livelihood – <i>Smt. Choten D. Lama, State Mission Director and CEO, WBSRLM</i>	40-41

TECHNICAL SESSION 3**42-71****DISCUSSION ON EVOLVING WISE USE PLAN AND PROGRAMME**

Introduction and background - <i>Shri Arnab Roy, Principal Secretary, Environment Department</i>	42
Wetland Park at Bantala - <i>Shri Chinmoy Chakraborty and Shri Soumya Ganguly, KEIP</i>	43-49
Proposal for ecologically sound land use of EKW – <i>Dr. Suchandra Bardhan and Shri P.K. Dhua, KMC</i>	50-57
Ecotourism prospects in EKW – <i>Shri Kaushik Bhattacharya, Joint Secretary, Tourism Department</i>	58-60
Prospects of micro and small scale industries in EKW – <i>Shri Vijay Bharati, Director, Micro, Small & Medium Enterprises and Textiles Department</i>	61-63
Wise use of EKW - <i>Smt. Bonani Kakkar, President, PUBLIC</i>	64-70
Wise use plan in EKW - <i>Shri Dipankar Chakrabarti, Confederation of Indian Industry</i>	71

GROUP DISCUSSION AND RECOMMENDATIONS**72-74**

Group I: Review of East Kolkata Wetland-Acts, Rules & Conservation Efforts

Group II: Needs For Changes In The Statutes And Practices

Group III: Evolving Wise Use Plan & Programme

WAY FORWARD**75****ANNEXURE****76-78**

Field visit on 2nd March, 2017

BACKGROUND

East Kolkata Wetlands, the only Ramsar site in West Bengal, is a unique periurban ecosystem. It lies on the eastern fringe of Kolkata, covering an area of about 12500 hectares. Out of the total area, 5852.14 ha is primarily water body oriented area, 4718.56 ha is agricultural land, 602.78 ha is productive farming area and 1326.52 ha is urban / rural settlement area. This Ramsar site has more than 250 water bodies, of varying sizes ranging from 2 ha to over 20 ha. It also supports a resident population of over 1,30,000.

The area had traditionally been used as dumping ground of Municipal Solid Waste of the Kolkata Municipal Corporation, the Dhapa dumping grounds. It has also been traditionally used for disposal of sewage from the metropolis, where the city sewage is treated naturally in the water bodies, which offers a unique system of sewage treatment. These sewage fed water bodies are used for pisciculture, whereby it ensures recovery of resources by producing an estimated 10,000 MT of fish annually in addition to its sewage treatment function. The East Kolkata Wetlands is often referred to as the “kidney” of Kolkata because of the important role it plays in treating sewage from the metropolis. This wise use of this Wetland has earned its recognition as a Ramsar site.

A court case in 1992 imposed injunction on reclamation of the wetlands and conversion of water bodies and agricultural lands to settlement areas. The area was declared as a Ramsar site in the year 2002.

Being on the fringe of Kolkata, which has a very high population density, and consequently, a very high demand for land, East Kolkata Wetlands, is subjected to pressures of urbanization. There is also a need for making provisions of basic amenities such as provisions for housing, education, sanitation and drinking water, communication and transport, medical facilities etc for those living within the boundary of the East Kolkata Wetlands, without damaging the ecological character of the wetland.

The existing Wetlands (Conservation and Management) Rules, 2010 of the Government of India following a ‘one size fits all’ approach specifically prohibits disposal of sewage or MSW in the Wetlands, though sewage flow is the lifeline of the EKW and garbage farming is another unique feature of the area. Thus there is an apparent contradiction in the rules and practices in managing the wetlands.

Keeping in view the importance of water bodies in maintaining the ecological balance of an area, and the ecosystem services that such an area can offer, there is a need to revisit the existing usages, explore possibilities of other potential use and to examine if there is need for relooking at regulations to make the management of the wetland more meaningful.

The consultative workshop was organized for eliciting views of different stakeholders connected with EKW, to analyse the present status and suggest modes of wise use commensurate with its ecological functions

and to find out whether there is a need for reviewing the statutes and practices. The recommendations of the workshop is expected to be used as a roadmap for the way forward so that the resources of the East Kolkata Wetlands could be put to sustainable wise use without conflict with its basic character.

A field visit was organised on 2nd March, 2017 and the presentations and discussions took place on 3rd March, 2017.

The deliberation in different sessions is outlined in the following pages.

WORKSHOP INAUGURATION

Shri Sovan Chatterjee, the Hon'ble Minister-in-Charge of the Department of Environment inaugurated the workshop by lightening the lamp. He was accompanied by Dr. Lew Young, Senior Advisor, Asia-Oceania, Ramsar Secretariat, Shri Arnab Roy, Principal Secretary, Environment Department, Shri P.K. Misra, Secretary, Fisheries Department, Dr. Kalyan Rudra, Chairman, WBPCB, Dr. M. Ramesh, Joint Director, NRCD, MoEF&CC, Shri Chandan Singh, Deputy Director, NRCD, MoEF&CC and. Shri Sandipan Mukherjee, Chief Environment Officer, Environment Department.



Welcome address by Shri Arnab Roy, Principal Secretary, Environment Department & Member Secretary, EKWMA



Shri Arnab Roy, Principal Secretary, Department of Environment welcomed all the delegates and guests at the workshop. He stated that the East Kolkata Wetlands (EKW) is a unique ecosystem on the eastern fringes of Kolkata. The Government of West Bengal protects and conserves the wetlands through the East Kolkata Wetland (Conservation and Management) Act, 2006. The Government of India has its Wetlands (Conservation and Management) Rules, 2010. Ramsar Secretariat has notified

the EKW as wetlands of International Importance in 2002. EKW, over the years, has attracted a lot of attention globally and locally as well. There are various different voices, voicing different concerns and asking for different sort of management in the EKW.

He further stated that the Workshop is an attempt to get all the people who are concerned about the wetlands together in one place to discuss, debate and move forward. He hoped that this Workshop would show the way for EKW to move forward.

He concluded his speech welcoming all the participants once again and requested them to take part in the workshop freely to ensure a healthy discussion and debate so as to evolve consensus on the issues of EKW.

Address by Dr. Kalyan Rudra, Chairman, West Bengal Pollution Control Board

Dr. Rudra began his speech by comparing the area of EKW which is about 125 sq. km with that of Kolkata which is about 187 sq. km. He said that in some geomorphic as well as official documents it was often described as inter-distributory swamp. He shared his long experience of research of the delta in West Bengal and stated that the EKW is an area of incomplete morphogenesis where fresh water and saline water regime initially juxtaposed. Since early 20th Century sewage was introduced into this wetland and it became a sewage-fed wetland. In the process of decay of upper fresh water regime and lower tidal regime, the character of the wetland changed and it became a sewage fed wetland which supplies about



11,000 MT of fish per year. The EKW recycles the city's waste water about 600 million litre per day which a normal mechanical treatment plant cannot do. He further mentioned that there are about 30,000 households in more than 100 villages in the EKW. The EKW is generally divided into core area i.e. water body and garbage recycling area and non-core area i.e. agricultural land and settlement area.

He told that the understanding about this wetland is incomplete. He observed that the official record shows about 46% of the area was water body, about 39% was permanent agriculture land, about 5% was garbage farming area and about 10 % was settlement area, but the situation has changed. However, there are many prohibitory orders from the Government and also from the court to protect this ecosystem. The existing wise use of the wetland is pisciculture and garbage farming that is going on from 1880.

He also stated that this Workshop is for reviewing the present status of the EKW and to find out more wise uses for this ecosystem and to assess the ecological services that could be rendered by this unique ecosystem in a more holistic way. He recommended that it could be achieved by preparing an updated database of the present land use and land cover status of the EKW using satellite imagery and secondly, a dedicated census for EKW.

Address by Shri Chandan Singh, Deputy Director, NRCD, MoEF&CC, Govt. of India



Shri Chandan Singh, Deputy Director, MoEF&CC began his speech by stating that the MoEF&CC, Govt. of India had been implementing National Wetlands Conservation Programme and National Lake Conservation Plan. In Feb 2013, both these programmes have been merged

into one integrated scheme for holistic conservation of the wetlands. The MoEF&CC has identified 115 wetlands in 24 States and two Union Territories in India. These wetlands have been identified based on water birds, fish and water life and culture. The GoI has released Rs 149 crores for conservation of 82 wetlands, additionally Rs 687 crore has been released for conservation of lakes. The MoEF&CC has notified the Wetlands (Conservation and Management) Rules, 2010 to contain certain activities within the wetlands. All State Governments have been advised for priority actions to constitute the State Wetlands Authority, identification of wetlands, development of integrated management plans, seeking resources for implementation of management plans, monitoring, evaluation and strengthening research management interface. A few states like Orissa, Karnataka, Bihar, Sikkim, Tamilnadu, Rajasthan, Madhya Pradesh and Punjab have already constituted the State Wetlands Authority.

He mentioned that the Management Action Plan was prepared by Wetland International for South Asia. Updated Ramsar Information Sheet is needed to form a comprehensive management action plan for EKW.

Address by Dr. M. Ramesh, Joint Director, NRCD, MoEF&CC, Govt. of India

While delivering his speech, Dr. Ramesh, Joint Director, MoEF&CC mentioned the Supreme Court order on conservation of wetlands throughout the country. The Supreme Court in its order stated above has directed MoEF&CC to focus on the 26 Ramsar sites. The MoEF&CC is also in the process of identification of wetlands in the country in consultation with the State Governments for ultimate conservation under the ambit of Wetlands (Conservation and Management) Rules, 2010. MoEF&CC is also considering several important steps in the way of identify the wetlands as separate land use category, which has been suggested by several experts. He requested the Government of West Bengal to take up programmes with financial assistance from MoEF&CC.

Address by Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat



Dr. Lew Young, representing the Ramsar Secretariat, began his speech by stating that this was the first time in India where a Workshop was organised to discuss the future of the Ramsar

site with so many stakeholders. He outlined the background of the Ramsar convention for conservation and wise use of wetlands signed in 1971. The Government of India joined the convention in 1982. One of the obligations of the contracting parties is to identify priority wetlands in their country for designation of wetlands of international importance or Ramsar sites. There are 26 Ramsar sites in India. The goal of this convention is the wise use of wetlands which could be achieved through cooperation at the local level, at the national level, and between all the relevant stakeholders. The aim of wise use is to maintain the ecosystem services of the particular site it provides.


He further mentioned that EKW was listed as a Wetland of International Importance (Ramsar Site) in 2002 under Criterion 1 which represents rare or unique type of wetland for the bio-geographic region. The main reason why EKW was designated as a Ramsar site was its treatment of urban sewage through traditional pond fishing and agricultural practices. When a site is designated as Ramsar site, the Government has to fill the Ramsar Information Sheet (RIS) which provides all the information about the site and this sheet should be updated in every six years. The RIS also talks about other services that the site provides such as sanitation, food production, livelihood, flood prevention and the potential for promoting education, recreation, and tourism. He emphasised on these other services to manage the site.

He observed during his visit to the site that the EKW was clearly facing some issues such as necessity of clear demarcation of the boundary of the site, addressing the pressures from increasing urbanization, encroachment, inappropriate land uses and for future land use proposal. He also stressed that there was a need to address the demand for increasing landfill sites, issue of increasing industrial effluents, issue of livelihood of the fishermen who live at the site, for having sufficient waste water for their ponds, having electricity and water supply, the need for housing, sanitation, repairing of the lock gates in a holistic and comprehensive way rather than an *ad hoc* basis.

He also informed that there is some kind of restoration programme run by the Ramsar Secretariat for restoration of a site when it faces some kind of threats. If restoration is not possible, compensation should be considered. The country at any time could request Ramsar Secretariat to form a team of experts to visit the site and to give recommendations. The change in the boundary of a Ramsar site could be considered if a part of a Ramsar Site has lost its services for whatever reason, or a part of a site was included by some kind of mistake, or, due to urgent national interest. However, the Contracting Parties should consider whether the change is consistent with national policy, whether new land use provides same ecological functions as the original site, and whether the proposed action benefits larger group of recipients.


Dr. Young also spoke on balancing Conservation and Development and showed the example of Mai Po Inner Deep Bay Ramsar Site in Hong Kong. He concluded his speech with thanks to the Hon'ble Minister-in-Charge, other dignitaries and all the participants in the workshop.

Full presentation of Dr. Young is given below.



East Calcutta Wetlands Ramsar Site

Lew Young
Secretariat, Ramsar Convention on Wetlands
young@ramsar.org

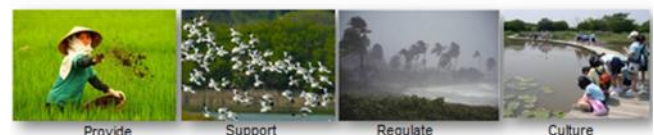



The Ramsar Convention on Wetlands

Mission: Conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.


To achieve this, it is essential that the vital ecosystem services that wetlands provide to people and nature, are fully recognized, maintained, restored and used wisely.

(Ramsar Strategic Plan 2019-2024)





East Calcutta Wetlands Ramsar Site

- Listed as a Wetland of International Importance (Ramsar Site) in 2002 under Criterion 1 of sites that 'contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region'
- It is the only known peri-urban wetland of this size (12,500ha) that treats urban sewage through traditional pond fishing and agricultural practices;
- Other services:
 - *Sanitation:* cycling nutrients from wastewater to fish protein;
 - *Food:* Produces 10,500 MT fish/year and 150 MT vegetables/day;
 - *Livelihood:* fisheries provide livelihood for about 50,000 persons directly and nearly the same number indirectly;
 - *Flood prevention:* by storing rainwater during the monsoon;
 - *Education, recreation and tourism:* potential for expansion.



East Calcutta Wetlands Ramsar Site

- Management pressure:
 - Clear demarcation of the Ramsar Site;
 - Pressure from increasing urbanization around its periphery (encroachment, inappropriate land-uses, proposed developments)
 - Demand for land for expanding waste disposal;
 - Increasing industrial effluent
 - Livelihood of fishermen (sufficient waste water, electricity and water, housing, development of cooperatives)
 - Siltation of the water channels;
- These pressures should be addressed in a holistic way



Promoting the conservation of Ramsar Sites



Contracting Parties and Ramsar Sites

- Promote the conservation of Ramsar Sites through maintaining their ecological character;
- Establish management planning and monitoring mechanisms for their Ramsar Sites;
- Update the Ramsar Information Sheet for the Site every six years;
- Inform the Ramsar Secretariat as soon as possible if the ecological character of any Ramsar Site has changed, is changing or is likely to change (Article 3.2);
- Seek ways of reversing the change in ecological character, including through implementing a site restoration programme;
- Only when such ecological character change is irreversible (i.e., when restoration is not a viable option) should consideration of compensation be considered;
- Request a Ramsar Advisory Mission (RAM) in order to bring international expertise to provide advice on appropriate actions.*

Ramsar Site boundaries



Boundary of Ramsar Sites

- An overarching principle is that the whole of the original extent of a wetland should remain designated as a Ramsar Site whenever possible and appropriate;

Scenarios when restriction of Ramsar Site boundaries may be considered

- Part of a Ramsar Site unavoidably loses the components, processes, and services for which it was included, or was included in error;
- Due to urgent national interest (Article 2.5) but Contracting Parties should, as far as possible, compensate for any wetland loss (Article 4.2);
 - whether the proposed change is consistent with national policies;
 - whether the functions and economic, social and ecological values of the proposed project is higher than that of the original site;
 - whether the proposed action benefits a larger base of recipients.

Mai Po Inner Deep Bay Ramsar Sites (Hong Kong, China)

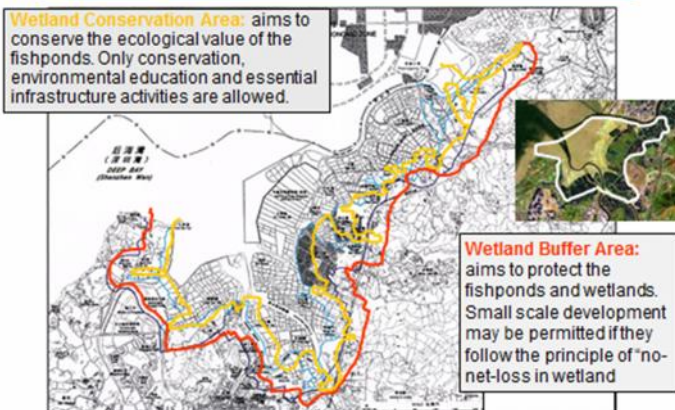


- Role of different gov departments: AFCD, Environment, Planning, Lands
- Role of NGOs: management, monitoring
- Role of local community, pond-fish farmers, public (volunteers, citizen science)

Mai Po Inner Deep Bay Ramsar Sites (Hong Kong, China)



Ramsar Site buffer zones



Wetland Conservation Area: aims to conserve the ecological value of the fishponds. Only conservation, environmental education and essential infrastructure activities are allowed.

Wetland Buffer Area: aims to protect the fishponds and wetlands. Small scale development may be permitted if they follow the principle of "no-net-loss in wetland"

Wetland education centre



Balancing Conservation and Development



- Total area = 80.1 hectares
- 95% set aside for wetland conservation on a long-term basis
- 5% set aside for housing development on a less ecologically sensitive section of the site



Summary

- The EKW is unique for the range of services it provide and management should be to maintain those services for people and the environment;
- The EKWMA has a vital role in promoting cooperation and coordinating management, deal with threats in a holistic way, and to explore opportunities for improvements;
- Management has to be based on:
 - solid information on the baseline condition of the Site;
 - regular programme of monitoring to understand change;
 - require a plan for management that is integrated into the planning of Kolkata Municipality;
- Change the view that the EKW is a "wasteland". Instead, look at the site as an asset for Kolkata;



Thank you!



Address by Shri Sovan Chatterjee, Hon'ble Minister-in-Charge, Environment, Govt. of West Bengal



Hon'ble Minister-in-Charge has expressed his gratitude to all the dignitaries present in the workshop. He specially gave his thanks to Dr. Lew Young for his participation in the workshop and his valuable speech. He shared his vast experience as the people's representative since the time he was an elected member of the municipal body and expressed his concerns regarding wetland and EKW.

He said that he is well aware about the importance of Ramsar Convention or Ramsar treaty and the Government honours this treaty. He is not against the treaty. But there are some practical problems which need to be addressed and solved. He explained that since long Kolkata Corporation is dumping the garbage in the EKW area and as Mayor of Kolkata he has no other alternative. On the other hand as Environment Minister he knows the importance of environment and Ramsar site. But his hands are tied.

He has also expressed that citizens of Kolkata would love to see a garbage free city. Many organisations like ADB, World Bank etc. are willing to grant loan to make the city garbage free and establish a scientific facility but whenever they observe the fact that the dumping site is under a Ramsar site they failed to sanction the loan. Due to huge urbanisation and growth of the city, this garbage problem needs to be addressed and solved. He expressed that whenever he is taking any projects in this area Government departments do not give NOC for this.

He also said that around 1.5 lacs people are living in the EKW area and it is under rapid urbanisation. It is also necessary to look after the livelihood development of these people and it is necessary to construct roads and to provide drinking water facilities in that area. People of this area are also facing many other problems.

He also proposed that a wetland park or Educational Hub may be set up in this area. But if it is not possible to construct auditorium, it may be not possible to establish educational hub.

He said that the Government is very much concerned about the environment and he has no intention to do anything against the Ramsar treaty or against the wetlands but he requested all to keep the practical issues in their mind.

He mentioned that as Dr. Lew Young stated, if there is some error then we should rectify it. Keeping in mind Dr. Young's view, Hon'ble Minister-in-Charge proposed a Management Plan regarding the use of the wetland and he requested all to join hands to rectify the problem areas of EKW.

He mentioned that Government is totally against the filling up of any wetland or conversion of the character of wetland but there should be a Management Plan for proper usage of EKW. He also stressed that after a certain period of time all these matters need to be reviewed keeping in view the practical situation.

He asked all the NGOs and stakeholders to come forward and cooperate with the Government and to contribute in the Management Plan and to find a way out and practical solution for proper usage of the land of the EKW.

He concluded his speech with thanks to everyone present in the work shop for their cooperation.

Vote of Thanks

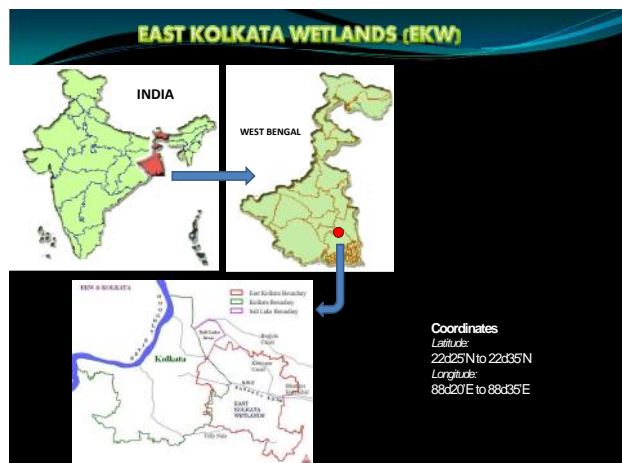
Shri Sandipan Mukherjee, Chief Environment Officer, Environment Department, Govt. of West Bengal & Chief Technical Officer, EKWMA delivered vote of thanks to all delegates and participants present in the workshop.



TECHNICAL SESSION 1

Review of East Kolkata Wetlands-Acts, Rules & Conservation Efforts

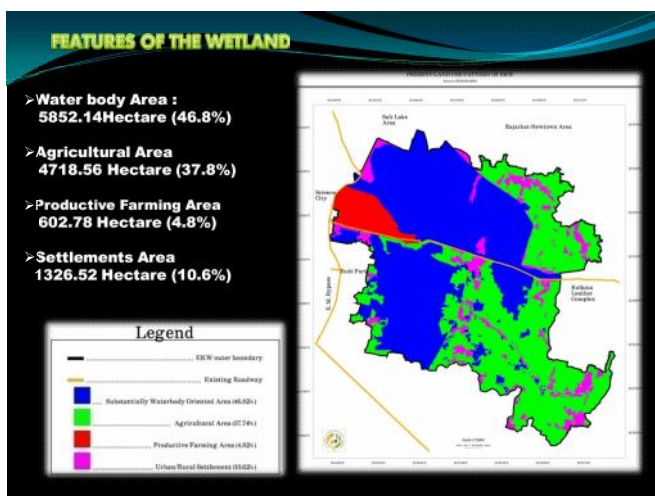
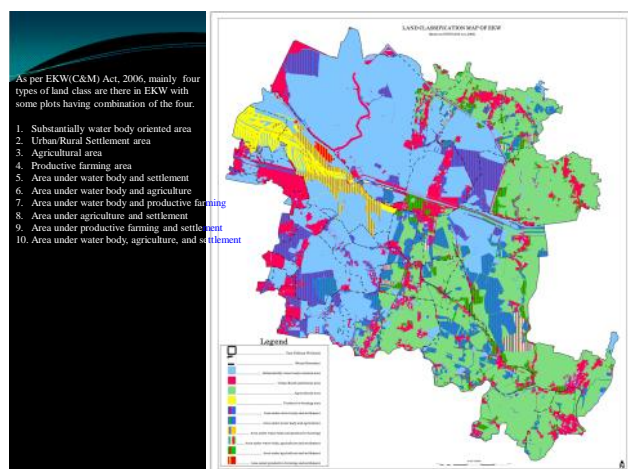
This session is chaired by Shri Arnab Roy, Principal Secretary, Environment Department, Government of West Bengal. He also introduced this session with the following presentation:



BRIEF HISTORY	
1. The city of Kolkata has grown up on the western side of a wetland, which is now known as the East Kolkata Wetlands.	
2. Initially recognized as a fallow non productive land. Part of this area has for long been used as a dumping ground of Municipal Solid Waste of the city.	
3. This area has also gradually developed as unique example of sewage fed pisciculture where in the sewage from Kolkata Municipal Corporation area is used extensively in fish ponds	
4. Before 1930 the main source of water for the fisheries was the tidal Bidyadhari River. The EKW is now totally fed by sewage of Kolkata and receives neither the fresh water from upstream nor tidal water from the sea.	
5. In the early sixties, this wetland area attracted the attention of the administrators for the purpose of reclamation for urban expansion.	
6. In a Judgment in 1992, the Calcutta High Court banned any conversion or changes in land use.	
7. In 2002, the area was declared as Ramsar site.	
8. In 2006 East Kolkata Wetlands (Conservation & Management) Act, 2006 came into force.	
9. Wetlands (Conservation & Management) Rules, 2010 were notified by MoEF, GoI.	

List of statutes and key features	
Statutes	Key features
Calcutta High Court's verdict (PUBLIC & Anr. vs. State of West Bengal and others) by Hon'ble Justice Mr. Umesh Chandra Banerjee	The Calcutta High Court imposed injunction restraining the state respondents from reclaiming any further wetland and prohibited the government from granting permission for changing the use of land from agricultural to residential or commercial and to maintain the nature of wetlands within the area specified in the case.
East Kolkata Wetlands (Conservation & Management) Act, 2006 and Rules, 2006	The East Kolkata Management Authority (EKWMA) was constituted under the provisions of this Act. The Act prohibited change in character of the land or mode of its use, except in cases where such changes could be permitted by the EKWMA for overall improvement of the local environment.

Statutes	Key features
Wetlands (Conservation & Management) Rules, 2010 by MoEF, GoI	Prohibits "reclamation of wetlands" Prohibits "discharge of untreated wastes and effluents from industries, cities or towns and other human settlements..." Prohibits "solid waste dumping....." Prohibits "any construction of permanent nature..."
Draft Wetlands (Conservation & Management) Rules, 2016 by MoEF&CC, GoI	Wetlands shall be conserved and managed in accordance with principal of 'wise use' for maintaining their ecological integrity. The draft rules prohibit <ul style="list-style-type: none"> Reclamation of wetlands and conversion for non-wetland uses Any diversion or impediment to natural water inflows and outflows of the wetland Any activity having or likely to have an adverse impact on ecological character of the wetland



LAND OWNERSHIP

- Total land area of East Kolkata Wetlands is approximately 12500 hectares
- There are over 250 fish ponds in EKW, which are either privately owned, owned by some partners, or under cooperatives.
- Nearly 50% of these ponds are of 2 to 10 ha in area, about 12% are of 10-20 ha and there are very few larger ponds
- The entire area is under private ownership except certain parts which are under KMC, I&W, Fisheries etc.
- Administrative control of the area falls under Panchayat and partly under KMC and BMC.
- The wetlands are extensively used by fisheries cooperatives for commercial pisciculture.

UNIQUE CHARACTERISTICS

- Acts as a natural Sewage Treatment Plant for Kolkata city
- Resource recovery from sewage and solid waste through Pisciculture and Horticulture
- Vast area for carbon sequestration
- Besides water bodies includes agriculture land, human settlement, landfill site and informal industries

Difference with other wetlands

- Not fed by natural water sources but through combined drainage system (storm water & sewage water) of KMC
- Not one big water body but a series of small ponds
- Not publicly owned. Areas are under private ownership with some land under the local body (KMC) & other departments
- Population of more than 1,30,000 reside within the area of EKW in 100 villages and part of two municipal corporations.

Conservation Efforts

PRESNT ACTS AND RULES:

- It may be stated that the conservation efforts of the EKW started with the High Court of Calcutta order of 1992, in which injunction was imposed on change in character or mode of use of the land within the wetlands area.
- Subsequently, after the wetland was declared as a Ramsar site in 2002, the State of West Bengal promulgated the East Kolkata (Conservation and Management) Act and Rules in 2006.
- The Act prohibited change in character of the land or mode of use, except in cases where such changes could be permitted by the Authority, only in cases for overall improvement of the local environment.
- The State land Reforms Act governing provisions for conversions of lands, introduced provision for mandatory consultation with Environment Department of the State Government before taking any decision on conversion of Wetlands. In both the Acts mentioned above, there is provision for creating compensatory water body in the event of conversion of any wetland.
- State Fisheries Act also has provisions for prevention of conversion or filling up of water bodies more than 0.035 ha.
- The wetlands (Conservation and Management) Rules, 2010 was promulgated by the Government of India, wherein strict regimes of protection of wetlands were incorporated.
- Until today over 300 cases of violation have been detected and FIR lodged in respective Police Stations, who initiated case in local courts.

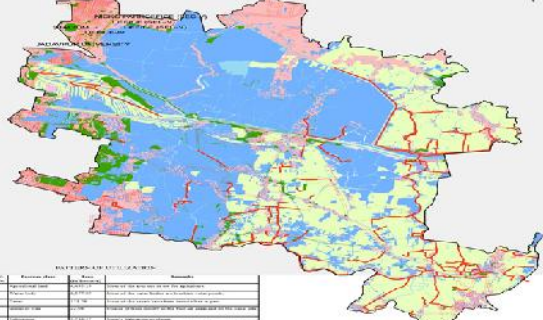
Introduction and background is followed by presentation of the following speakers:

Department of Fisheries, Government of West Bengal

The East Kolkata Wetlands were designated a "wetland of international importance" under the Ramsar Convention on August 19, 2002.



The East Kolkata Wetlands (22° 0' 27" N 88° 0' 27" E), are a complex of natural and human-made wetlands lying east of the city of Kolkata, West Bengal between the levée of the River Hooghly to the west and that of the River Bidyadhari, presently a derelict channel, to the east. The wetlands cover 125 square kilometers, part of the mature delta of river Hooghly. The wetlands are 'inter-distributary' marshes in the delta and include salt marshes and salt meadows, as well as sewage farms and settling ponds.



(Ramsar Information Sheet 1208)

- EKW has 3 components (a) the core area for fishing and waste recycling (b) The garbage farming land (c) Downstream area for Paddy Cultivation.
- EKW harbours rich Bio diversity.
- Floral diversity in the core area consists mostly of *Eichhornia* and **20 species of algae**; the Surrounding mesotrophic wetlands have 34 families, 68 genera and 104 species of Plants, besides there is rich diversity of other different planktonic, benthic and arthropod communities..
- About **20 different mammals** have been reported. Marsh mongoose, Indian Mongoose, Palm civet and small Indian civet are common.
- 15 species of reptiles including threatened Indian mud turtle, are reported in this region.
- **More than 40 species of birds have been registered here.**

- EKW Provides 3 basic securities - Nutritional, environmental (bio-treatment) and livelihood. Besides it also provides about 27 Ecosystem services.
- EKW produces 150 tonnes of fresh vegetables per day. 10500 tonnes of table fish per year is yielded from 272 bheries owned by 8 formal (registered) or rest informal cooperatives and FPGs
- Treats 980 to 1500 million Lts of city sewage with every day with 3 to 4 weeks retention time, (This would otherwise cost INR 400 crores /yr)
- Bheries or fisheries provide livelihood to about 1 lakh 80 thousand fishermen

- **Industrial effluents:** Effluents and Heavy metals from industrial units in upstream catchment areas and tanneries are polluting the wetland. However, fish is safe (for consumption) as it is harvested within 90-100 days.
- **Anthropogenic Encroachments:** Increasing population pressure has resulted in shrinking of EKW. This has adversely affected livelihood options and land use pattern, including fisheries.
- **Faulty Drainage System and Siltation:** Portions of the existing drainage system has faulty contour due to partial dredging and heavy siltation resulting in blockage of most of the channels. This has affected flow of sewage and hence production of fish.

EKW: IMPACTS

- Heavy siltation (107 Kg/Ha/day) reduces flood resilience of Kolkata and has impacted fish production. Average depth of water is rarely more than 1m, the water level increases by about 15-20 cm during monsoon.
- Fish production per hectare is presently 4-5 tons. However the potentiality is around 7-8 tons per hectare.
- No migratory birds reported to visit East Kolkata Wetlands since 2007.
- Livelihood vulnerability of local people has increased.

West Bengal Inland Fisheries Act 1984

- Section 17 A(1): (a) No water body can be utilised for any other purpose other than fishery; (b) it cannot be partially or fully filled up with any material; (c) also it cannot be divided into smaller segments by putting barriers
- Applicable to all water bodies holding water at least for six months
- Violation attracts 3 years imprisonment or fine of Rs 5 lakh or both (offence cognizable and non-bailable)

Future Prospect – Green Business hub

- One can target a fish production of 30,000 ton per year which may create a business of Rs 500 cr.
- Will need dredging, to increase the depth of fisheries upto 1 m or more
- Adequate supply of sewage through dry weather flow canal to be ensured by removal of encroachments and repairing of lock- gates.
- Optimal species diversity based on community knowledge with an **ecosystem approach to fisheries** to be practiced.
- **Good management practices coupled with scientific intervention during occurrence of fish mortality and disease will be the key to eco-friendly aquaculture.**

Way forward

- As is analysis of the EKW and its comparison with the status as in 2002.
- Economic evaluation of EKW in terms of its ecosystem functions and services.
- Ascertaining land ownership
- Doing away with the uncertainties about future land use and sensitisation for its wise use.
- Removal/dredging of silt (Green Climate Fund may be tapped) and no filling up of water bodies
- Synergy among the line departments for a holistic and sustainable development
- **Strengthening of fishermen cooperatives/FPGs and farmer's club through training and capacity building**
- Welfare measures for fishermen/farmers.

Sources of Information

- <https://rsis Ramsar.org/rsis/1208> (Ramsar Information Sheet)
- <http://www.moef.nic.in/sites/default/files/nlcp/P%20-%20World%20Case%20Studies/P-31.pdf>
- https://www.academia.edu/2071464/East_Kolkata_Wetland_Paper
- <http://www.indiawaterportal.org/articles/east-kolkata-wetland-system-low-cost-efficient-ecological-water-treatment>
- <http://www.moef.nic.in/sites/default/files/nlcp/G%20-%20Pollution%20Abatement/G-1.pdf>

THANK YOU

Present Status of Sewage Feed Irrigation and Needs for Improvement in the East Kolkata Wet Lands

The Calcutta Drainage Outfall System consists of drainage channels, namely Storm Weather Flow (S.W.F.) Channel and Dry Weather Flow (D.W.F.) Channel. These two channels were originally excavated by the Calcutta Corporation with a view to dispose off storm weather discharges and dry weather discharges, pumped out from the different pumping stations.

The System has been designed for immediate dispose off the drainage water and optimum use of dry weather flow for the use of pisciculture and agriculture which comes under purview of the system.

Due to rapid urbanization in the catchment area of the system run-off has been increased, for such, additional pump houses are installed as well as capacity of old pump houses are increased to give relief to people against water logging problem.

During period other than monsoon there is lean discharge from pumping stations which are routed through under ground conduit into Dry Weather Flow (D.W.F.) Channel. The pisciculture and agriculture are taken care of by proper operation of Bantala Regulator Gate.

Sl. No.	Pumping Station	Installable Capacity (Cusecs)	Discharge Shared by the drainage channels(Cusecs)				Remarks
			Suburban Head Cut(S.H.C.)	Dry Weather Flow(D.W.F.)	Feeder to T.H.C.	Defunct D.W.F.		Town Head Cut(T.H.C.)
1	Ballygunge	1560	1560				
2	Ambedkar Bridge	345	345				
3	Chowbhaga Old	450	450				
4	Chowbhaga 1st addl.	500	500				
5	Chowbhaga 2nd addl.	500	500				
6	Chowbhaga 3rd addl.	1100	1100				
7	Topsia	533.5		533.5			
8	Palmar Bazar	1754		764			990
9	Chingrighata	170					170
10	Kulia Tangra	108					108
11	Paglia Danga	220					220
12	Dhana Lock	720			540	180	540

Salient Features of Drainage Channels

Sl. No.	Drainage Channels	Length(Km.)	Bed Level (Metre) GTS at Bantala	Bed Width (Metre) from offtake to outfall	Remarks
1	Suburban Head Cut(S.H.C.)	7.32	-1.80	15.00 to 45.00	
2	Dry Weather Flow(D.W.F.)	1.95	0.174	5.00	
3	Feeder to T.H.C.	1.83	1.47 at Makallala	12.00	
4	Town Head Cut(T.H.C.)	7.78	0.155	30.00 to 40.00	
5	Storm Weather Flow(S.W.F.)	27.00	-1.80 and -3.78 at Chisvishala	45.00 to 50.00	

Dry weather Flow channel feed water for agriculture and pisciculture to Kheyadaha I & II G.P. through 3-vented 1200 mm diameter Lalkuthi syphon. Fishery feeding is also being done through Fishery Feeding Channel by suitable operation of Bantala Regulator.

Sl. No.	Drainage Channels	Nos of Gates	Size of each Gate	Sill Level	Remarks
1	Bantala Regulator Gate	10	2.3 m x 2.7 m	0.43 m	
2	Ghusighata Out Fall Sluice	36 x 2 = 72	1.75 m x 3.35m	-3.63 m	



Fishery Feeding Channel is being fed by Dry Weather Flow (D.W.F.) Channel which is high level Channel. The design discharge of the fishery feeding channel is 450 Cusecs(appx.).

The design discharge through Lalkuthi Syphon is 100 Cusecs(appx.).
Khevadaha I & II G.P. are benefited with this water.

The design discharge of Defunct Dry Weather Flow (D.W.F.) is about 100 Cusecs(appx.). Some fisheries are also fed with this water.

Fishery Feeding and irrigation are also done through Kheyadaha Canal, Karaidanga Canal, Dud Bibi Canal, Borali Canal, Nalmuri Canal, Bamunia & Santra Canal, Chandipur Canal&Ghoshpur Canal situated in the right side of S.W.F.(Storm Weather Flow) Channel.

Proposed Improvement

Rapid operation of gates of regulating structures will help for more effective use of water. Hence, operation of gates of major regulating structures may be done electrically.

Periodical cleaning of sediments will augment the discharge.

Presentation of Shri Sasidulal Ghosh, Secretary, Fish Producers' Association

Waste Water Aquaculture as low cost sanitation and Health and disease management

Sasidulal Ghosh
Director,

Bidhan Nagar Agro and Fisheries Projects Pvt Ltd

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

- We are in a critical phase with increasing population over decreasing resources. Waste, food and energy securities are emerging as increasingly important and vital issue of civilization and environment.
- Current and future water demand could be met by enhancing water use efficiency and demand management. Thus waste water is emerging as potential source for demand management

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

The EKW is the perfect example for resource recovery through Aquaculture and acts a low cost sanitation model through participation of local people to help meet some important basic problem of developing countries –

- Shortage of nutritious food.
- Shortage of employment opportunities.
- Shortage of funds to treat waste water.
- Shortage of water for sustainable development in food and non-food sector.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Waste water generation and treatment by STPs :

- 80% of total water supplied for domestic use gets generated as waste water. As per CPCB estimates (2009) total waste water generated from class-I cities (498 nos) – 35,558 mld and class-II cities (410 nos) – 2,696 mld in India. In India treatment capacity are only 11,533 mld and 233 mld respectively for class-I and class-II cities.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

- It is estimated that the cost for establishment of STPs for entire non-treated domestic waste water is as follows –
- Capital Cost – Rs. 26,468.00 cr.
- Annual Operation Cost – Rs. 2646.80 cr.
- Which is about 10 to 15 times the amount which the Indian Govt. plans to spend.
- A performance evaluation of STPs carried out by CPCB and observed that hardly 28 % STPs has not meet prescribed standard.

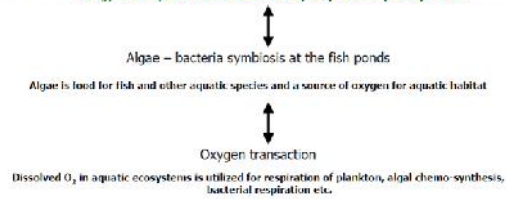
Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

World Bank Report came out strongly in favour of stabilization ponds as the most suitable waste water treatment system in developing countries, where land is often available at reasonable opportunity cost and skilled labour is in short supply

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Sewage fed fisheries: Ecological process

Fish ponds are the recycling ponds and act as solar reactor
Bacterial activities decompose organic compounds in the sewerage. Solar energy is trapped as chemical energy in the aquatic micro & macro flora by the process of photosynthesis.



FISH AS AN ECOLOGICAL MANIPULATOR

Algae → Fish → Humans

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

A comparative analysis

PARAMETERS	BIOLOGICAL	STP
Design	Simple (easy to implement)	Highly technical
Efficiency	Maximal	Optimal
Cost		
Capital	Moderate	High
Operating	Low	High
Revenue generation	Substantial	No scope
Management system	Decentralized	Centralized
Community participation	Substantial	No scope
Poverty alleviation	Effective	No scope

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Battery of fish ponds



Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Snapshots of the process



Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

How Fishes clean sewage?



Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

CHARACTERISTIC OF SEWAGE AND BIOLOGICALLY TREATED POND WATER

Parameter	Incoming Raw Swage at Fishery	In sewage fed fishery	Outlet water of fishery for Agriculture	Effluent standard for inland surface water by CPCB, Govt. of W.B.
Temp ^o C	32.0	29.27	29.0	40
P.H.	7.2	7.70	7.5	5.5-9.0
Transparency (cm)	Nil	15	10	
Total dissolved solid (ppm)	675	455	130.0	2100.0
Total suspended solid (ppm)	211	123	65.0	100.00
BOD (ppm)	128.4	25.0	17.9	30.0
DO (ppm)	Nil	3.9	4.5	4.0
Alkalinity (ppm)	273.7	130.0	83.0	
Phosphate (ppm)	2.94	0.8	0.2	

Nitrate (ppm)	3.7	2.41	0.8	
Free Ammonia (ppm)	40.0	1.04	0.5	1.2
Lead (as pb) (ppm)	0.57	Trace 0.09	Trace	0.1
Cadmium (as cd) (ppm)	0.32	Trace 0.12	Trace	2.0
Chromium(as Cr) (ppm)	5.80	Trace 0.08	Trace	2.0
Zinc (as Zn) (ppm)	0.56	Trace 0.44	Trace	5.0
Coliform, count/ml	10 ^{4.5}	10 ^{1.5}		500 Per/100ml
Feacalcoliform	10 ^{3.5}	10 ¹		10
Salmonella	10 ⁵	10 ¹		10

Note: From the above it is clear the aquaculture as a model of low cost sanitation is fully quality the norm of PCB

Source: S. D. Ghosh

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Sewage – Production relationship

Sewage Intake in fish ponds	Average production of fish / ha / annum (in MT)
100%	6.73
80%	5.20
50%	4.45
20%	3.65

200 - 400 m³ / ha / day – optimal intake for fisheries depending on Carrying capacity of the pond and species population

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

HOW SAFE IS THE FISH:

Aquaculture being a product oriented practice, public health concerns are being raised with regard to the suitability for consumption of fish/shell fish from such system.

Test program	Sample	Limit	Limit for export of fish.
	Sewage Fed (Tilapia sp.)	Marine Lutjanus sp.)	
Heavy metals			
Arsenic	0.0445 mg/kg	0.2610 mg/kg	1.0 mg/kg
Cadmium	0.0168 mg/kg	0.0845 mg/kg	0.5 mg/kg
Lead	0.0927 mg/kg	0.1033 mg/kg	0.5 mg/kg
Mercury	Nil	Nil	0.2 mg/kg
Antibiotic residue			
Chloramphenicol 30 mcg	Not detected	Not detected	BDL
Oxytetracycline 30 mcg	Not Detected	Not detected	BDL
Bacteriological			
Total Plate Count/gm	270000		500000 at 37 ± 0.5
E.coli/gm	Nil		20
Staphylococcus/gm	Nil		100
Salmonella/25gms	Not detected		Nil
Vibrio Cholerae/25 gms.	Not detected		Nil

(Source: S.D. GHOSH & EKUDUS)

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

METHODOLOGY FOR AQUACULTURE USING WASTE WATER

DESIGN:

Considering physico-chemical parameter of waste water, climate, solar radiation of the area, land availability etc different type of models available or design for waste water treatment through aquaculture to achieve the desire reduction of pollutants and trapping of nutrient. These are –

Flow-Through system – Waste water directly receive by fishes; land is not constraint.
eg. Integrated wet land system, EKW.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

- **Abstracted Flow-system** – Waste water treated through series of ponds and then used for fishes;
- The overall design – The hydraulic loading on the fish pond is 160 m³ /ha/day and BOD loading, assuming 80% removal in anaerobic and facultative ponds together. Considering 1000m³/day waste water intake area requirement 500 + 3340 + 62500 respectively for anaerobic, facultative and grow out ponds. Total effective water area 6.25 ha and total area is around 8 ha

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Dilution waste water
by adding fresh water -

Where fresh water available plenty and if the BOD level of waste water is more than 50/mg/l, then its necessary to dilute by adding fresh water.
eg.- CIFA- Rohara

Duck weed culture -

Where fresh water not available and land is constrain, then culture duck weed in ponds, where BOD level is reduce to 50mg/l and let into fish cultural ponds. The duck weed also harvest for fish food.
Eg. – Rohara CIFA

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Effective Micro organism (EM) Based System-

For extreme land scare situation waste water treated with EM
[Consisting of lactic acid bacteria (aerobic & anaerobic) yeast & Actinomyces etc.]

Note: The model may be centralized or decentralized manner considering contour of the area.

FOR DESIGNATING THE INITIAL STATUS, REFERENCE SITUATION STUDIES SHOULD BE CARRIED OUT IN THE FOLLOWING ASPECTS –

- Topography
- Species diversity
- Waste water quality
- Existing farming practice
- Health & livelihood of the target community.
- It should be blending of ecology, economics & engineering.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

SITE SELECTION

- Pond should be near the vicinity of waste water collection or swage pumping station.
- Located at a place 300 meter away from residential area & bore wells.
- Avoid flood prone area & soil of toxicity.
- Soil best suitable for pond construction are silt clays, clay, loams etc. Porous (sandy & gravelly) and peat soils must be avoided.
- Topography of area be consider sloping of land not steeper than 1%

[Source : Dr. C.C. Saha]

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

GUIDELINE FOR USE OF DOMESTIC WASTE WATER IN AQUACULTURE

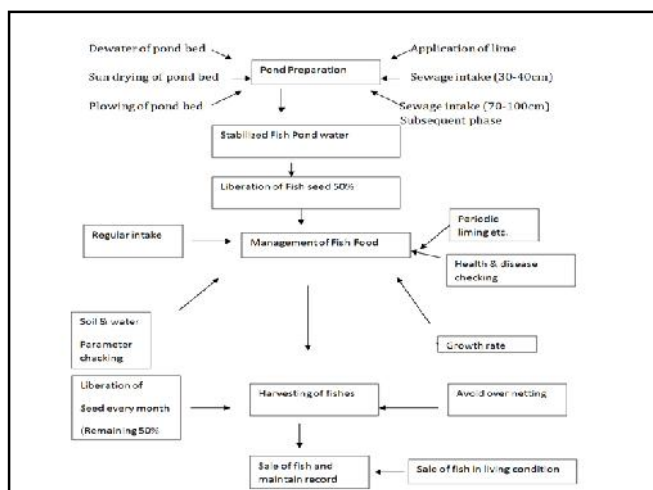
- Based on recommendation by WHO (1989) and bacterial quality standards and threshold concentrations for fish muscle, there are some guidelines for domestic waste water reuse in pisciculture:
-
- A minimum retention time of 5 to 10 days for raw sewage.
- A maximum critical density of 10^5 total bacteria/ml in waste water feed fish pond.
- Absence of viable trematode eggs in fish pond.
- Suspension of waste water loading for 1- 2 weeks prior to fish harvest.
- Less than 50 total bacteria per gram of fish muscle and no salmonella.
- Standard water quality and BOD level 10-20 ppm of fish pond.
- Good hygiene in handling and processing, including evisceration, washing and cooking.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

MANAGEMENT OF WASTE WATER-FED AQUACULTURE

- In wastewater fed aquaculture all type of fresh water fishes of economic important and some salt water species may also be culture. Production level 5 to 7 tones/ha/yr be achieve without feed & fertilizer and production 7 to 12 tones/ha/yr be achieve with supplementary feed but without artificial aeration.
- Method of Sewage – fed pisciculture (Multiple stocking & multiple harvesting policy) –

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com



PREVENTION, CONTROL AND TREATMENT OF COMMON FISH DISEASE IN WASTE WATER AQUACULTURE

All fish carry pathogens and parasites. Disease affecting fish mortality specially young ones. In waste water Aquaculture disease of fish are generally low in compare to fresh water due to ammonia and alkalinity level is on higher side than fresh water.

Type of diseases:

- 1) Communicable disease – Algae, Fungal, Bacterial, Parasites.
- 2) Abiotic disease – Due to unfavorable ecology (pollution-drug and chemicals, acidosis, alkalosis, intoxicates, hydrogen sulphide, ammonia etc)
- 3) Nutritional disease – deficiency of minerals, vitamins, amino acid, fatty acid.
- 4) Genetic disease – Deformed body etc.
- 5) Managerial deficiency diseases –
- 6) Miscellaneous – Hazard and disease – weed, snail, flood and heavy rain, extreme hot and cold climate, predators like snake, frog, birds, etc.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

PREVENTION OF DISEASE

1. Follow site selection and standard design norms (site specific).
2. Follow guidelines for use of domestic waste water in Aquaculture.
3. Follow management practice of waste water feed Aquaculture.
4. Inspection in regular interval.
5. Water and soil parameter.
6. Fish health and growth.
7. Application of cultural inputs (lime, pro-biotic etc) in regular interval.
8. Appearance of sign for diseases and immediate steps to control.
9. Record keeping of all cultural data and analysis.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

TIPS FOR WASTE WATER FEED AQUACULTURE

1. Intake of waste water allow that should not fall Dissolved Oxygen (DO) level below 3PPM.
2. Added waste water should not consume more than 1 to 2 PPM Dissolved Oxygen (DO)/ hr.
3. Waste water inflow rate desirable 150-200m³/ha/day (not 400 m³/ha/day which may create eutrofication)
4. Avoid hot and cloudy day for intake of waste water.
5. Transparency limit 25 to 35 cm.
6. Use of settling ponds, before intake of waste water **feed ponds** and velocity of out flow water from settling ponds should be – silting velocity. It is observed that disease is less in obstructed flow-system in compare to Flow through system.
7. Avoid over stocking.
8. Seed of fishes treated before liberation in ponds. (dip treatment – NaCl Solution @ 2.5% for 3-5 minutes, **Formalin** @ 250 PPM. group treatment – KMnO₄ (@ 5kg/ha) for 48 hr) Out sourcing seed first release in a pond and kept for 2-3 days and after treatment it may be released to grow out pond.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

9. Poly-culture, multiple stocking and multiple harvesting policy.
10. Algal count – Atleast 100 million cell/ cc and atleast 5 species.
11. After every crop sun dried pond bed if unit is small (below 1 ha), once in a year for big pond (below 10 ha), and once in 4-5 years (if the size of pond is above 10 ha). After drying application of lime and plowing.
12. liming of pond in regular interval specially during change of monsoon.
13. Application of chlorine @ 1PPM or iodine (20%) in regular interval.
14. Intermediate host identified and try to eliminate.
15. Sell of fish – Stop waste water intake 7 to 14 days before harvest, harvested fish are kept in fresh water pond (24 to 72 hrs) with provision of water exchange.
16. Temperature below and above the optimum limit (16.7 – 39.3 C) of fish stop production of antibody in the system and thereby the fish loses its defense mechanism and gets more susceptible to diseases. Maintain volume of water level above 1.5 meter.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

HOW DISEASE DEVELOP

- In the development of diseases three factor interact – Host, Disease agent and Environment. This is linked to a fulcrum with the factors in position.



Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

PHYSICAL SIGN OF DISEASE

The early detection of incidence of these diseases and the drawing up of a farming strategy that will minimize or prevent the onset of diseases.

Sign of disease causative agent and treatment in waste water Aquaculture –

1) Argulosis (Fish Louse) – Argulus species, generally appear in summer and pre monsoon months, sometimes in post-monsoon as well.

Treatment – Gammaxene @ 0.5 PPM, Novan (Dichlorovas) @ 0.1 PPM along with Potassium Permanganate solution @ 4 PPM.

2) Lernaeasis (Anchor Worm) – Lernia Species most common in IMC.

Treatment - Fish louse or butex @ 50 ml per 4,000 m³.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

3) Gyrodactylosis – Gyrodactylus species.

Symptoms – Folding of fins, often rest near the pond margins, fading of colour, excess secretion of mucus.

Treatment – Dipterex @ 0.5 PPM or Salt bath @ 3 % for 3-5 minutes or 1:5000 Formalin solution bath for 5-10 minutes.

4) Dactylogyrosis – Dactylogyrus species,

Symptoms – Black ovoid patches on body surface, cysts on head, body and fins.

Treatment – Same as above. Remove snail population.

5) Bloating belly (Dropsy) – Aeromonas species generally appear in summer month and where high organic load in pond bottom.

Treatment – Anti-biotic @ 100 mg/kg and physically eliminate the disease fishes from existing stocking.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

6) Whitest Cysts on skin, gills, fins – myxobolus species, generally observed in winter months. This is due to over stocking.
Treatment – Thinning of population, provision of yeast in feed (1 gm/kg), common salt bath @ 2-3 %.

7) Tail and Fin rot – Saprolegnia species. Generally observed in summer months.
Symptoms – Presence of cotton wool like tufts on fish, less response to external stimuli.
Treatment – Anti-biotic @ 100 mg per kg feed and Potassium Permanganate @ 5kg/ha.

8) Gill Rot – Brachyomyxosis species. Notice where water is acidic, low D.O level or high algal bloom. Gulping air at water surface, gill turn yellowish brown.
Treatment – Lime (CaO) @ 200 kg/ha, Copper Sulphate (CuSO₄) @ 12 kg/ha, Formalin @ 14 lit/ha.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

9) Bulged Eye - Aeromonas species. Specially observed in Catla. Eyes appears reddish and finally cloudy lenses and eye ball gets putrefied leading to death.

Treatment – Potassium Permanganate (KMNO₄) @ 1PPM, Terramycin @ 75 mg per kg feed for 3 to 7 days.

10) UDS – Pseudomonas species.

Symptoms – Develops red spot finally ulcer in body.

Treatment – Enhance Alkalinity of water, application of CIFAX.

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

Thank you

Sasidulal Ghosh - 9433004738 -
ghosh1955india@gmail.com

TECHNICAL SESSION 2

Need for changes in the statutes and practices

This session is chaired by Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat.

Shri Sandipan Mukherjee, Chief Environment Officer, Environment Department, Government of West Bengal presented the introduction and background the topic. His presentation is as follows:

Definition of wetlands

- The US Fish and Wildlife Services (1956): Lowlands covered with shallow and sometimes temporary or intermittent water.
- Canadian Wetland Registry (1979): Wetland as areas having water table at, near or above the land surface or saturated for a long enough period to promote wetland or aquatic processes as indicated by hydric soils etc.
- The US Fisheries and Wildlife Services (1979): Wetlands as lands transitional between aquatic and terrestrial systems where the water table is usually at or near the surface or the land covered by shallow water.
- Another well known definition defines wetland as areas inundated or saturated by surface or ground water a frequency and duration sufficient to support a prevalence of vegetation typically adopted for saturated soils.
- The Ramsar convention defined wetlands as areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters. In addition, wetlands "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands."

Contd...

Definition of wetlands

- Government of India, has partly accepted the Ramsar definition with further features added, eg. " includes all inland water such as lakes, reservoirs, backwaters, lagoon, creek, estuaries and manmade wetland and the zone of direct influence on wetland, i.e the drainage area or catchment region of the wetlands as determined by the Authority, but does not include main river channels, paddy fields and coastal wetland covered under CRZ notification.
- The East Kolkata Wetland (Conservation and Management) Act, 2006, does not specifically define Wetlands at all.

Thus, in the face of such variation in the concept of wetland, there is a need to define wetland in the Statutes in keeping with international norms and standards.

MAJOR ISSUES

Different provisions of the existing Acts and Rules prohibits a number of activities in EKW, such as

- ❖ **sewage fed pisciculture with EKW**
It may be mentioned that Sewage disposal through the water bodies in the wetlands actually play the role of sewage treatment as well as aids in pisciculture, and this is a unique example of wise use recognized by Ramsar. Hence, accordant changes in the corresponding statutes is essential.
- ❖ **Disposal of MSW within EKW**
MSW disposal, which is also associated with agricultural practices and has been a part of the ecosystem of EKW, and this also needs to be recognized and continued.
- ❖ **New constructions with in EKW**
It may be mentioned that the area under EKW is primarily under private ownership with human settlements. There has been significant population growth in EKW since its inception. Such local population cannot be provided many civic amenities such as schools and hospitals, drinking water, garbage disposal facilities etc because of restrictions imposed on the Wetlands under existing rules and regulations.

It is felt that the existing statutes need to be revisited to allow provisions for creation of such civic amenities and income generating opportunities in the area without compromising on the ecological characters of the area so as to promote sustainable growth.

BOUNDARY OF EAST KOLKATA WETLANDS

As per RIS information 2002, the designated conservation area of East Kolkata Wetlands comprised of 32 mouzas (which is now 34 mouzas) where as per EKW(C&M) Act, 2006 the EKW is comprised of 37 mouzas – i.e. there are three added mouzas namely part of Kalikapur, part of Nonadanga, and part of Thakdari.

So, there is an anomaly between originally declared Ramsar Site and present Ramsar Site.

It is required to remove such confusion.

Items for consideration

1. Defining Wetlands
2. Reconciliation of extent of the wetlands between Ramsar notification and EKW(C&M) Act [32 mouzas /37 mouzas]
3. Recognition of sewage fed wetlands in Wetlands (Conservation & Management) Rules of Govt
4. Recognition of the presence of solid waste landfill site and recycling facilities & KMC water filtration plant in EKW or exclusion of these areas from EKW
5. Consideration of whether areas without presence of significant water bodies i.e. agricultural land and settlement land needs to be kept in EKW or they may be kept within EKW recognising the different usage.

Contd...

Items for consideration

6. Precise definition of zone of influence of EKW
7. Consideration of whether the EKW area will have zones – viz. core, buffer and fringe. Specifying permitted usage for different zones
8. Prescribing a Standard Operating Procedure for application on conversion of land
9. Permitting activities of improvement of residence and common infrastructure in settlement areas

Introduction and background of this topic is followed by presentation from following speakers

Presentation of Shri Subhasish Chattopadhyay, DG(SWM) and Shri Partha Pratim Saha of KMC

“Needs for Changes in the Statutes for Development Plans of Solid Waste Treatment and Disposal Facilities”
Part -I

Kolkata Municipal Corporation
5, S.N. Banerjee Road, Kolkata - 700087

Agenda

- *Introduction to SWM in Kolkata*
- *Existing Solid Waste Treatment and Disposal Facilities in Kolkata*
- *Need for the Future*
- *Wise Use of EKW by various SWM initiatives*
- *Need for Augmentation of Existing Dhapa Landfill site*
- *Our Proposition and Planned Projects by wise use of EKW*
- *Conclusion*

East Kolkata Wetlands

East Kolkata Wetlands – Approximate Area Distribution

S. No.	Item	Area
1.	Total Area of East Kolkata Wetlands	12,500 ha
2.	Substantially water body oriented area	5852.14 ha
3.	Agricultural area	4718.56 ha
4.	Productive Farming area	602.78 ha
5.	Urban settlement	91.53 ha
6.	Rural settlement	1234.99 ha

Total KMC Area

607 ha

Water Body

81 ha

Solid Land

526 ha

1

Introduction to SWM in Kolkata

Introduction to SWM in Kolkata

Brief History of Solid Waste Disposal and Treatment in Kolkata

<p>1865 Corporation of Calcutta acquired a square mile of Salt Water Lake Region for dumping of garbage. An embankment was built which stood out in the swampy marshland.</p> <p>1867 A light rail system was built to carry the garbage disposal site at Dhapa.</p> <p>1877 343 wagonloads reached the garbage dump</p> <p>1881 Over 1,11,000 wagon loads reached the garbage dump</p> <p>1968-74 System of garbage disposal was replaced by tipper trucks from wagons. Estimated quantity of solid waste 1640 tpd</p>	<p>1999-00 700 tpd capacity compost plant was set up to process municipal solid waste</p> <p>2002 Dhapa, part of EKW declared as Ramsar Site</p> <p>2016-17 <ul style="list-style-type: none"> Waste generation increased to 4000 metric ton per day 500 tpd capacity compost plant on 23 Acre land (as per revised Agreement) is functioning at Dhapa disposal site One of the disposal sites with 12.14 Ha. Land is closed and implementation of bio-remediation project has been taken up for its environmental improvement. Dhapa still remains the only Garbage Disposal site for the city of Kolkata </p>
--	--

Introduction to SWM in Kolkata

SWM – Sources of MSW Generation



Introduction to SWM in Kolkata		
Dhapa Dumping Site – Kolkata's only Garbage Disposal Site		
S. No.	Item	Area
1.	Total Area of Dhapa Dumping Site	50 ha
2.	Remediation Project	12.5 ha
3.	Land exhausted by virtue of dumping activities	24 ha
4.	Land being used for dumping presently	13.5 ha (to last for 1-2 years)
Daily Waste Generation for the city of Kolkata is 4000 mt. tons per day		
Facts		
<ul style="list-style-type: none"> Quantity and Characteristics of the waste determine adoption of processing technology. Exploration of capturing of methane gas for further use Repeated burning of waste significantly decreases the potential to capture methane 		
Dos		
<ul style="list-style-type: none"> Landfilling of inert rejects (residual waste) from processing facilities. 		
Don'ts		
<ul style="list-style-type: none"> Disposal of organic matters into sanitary landfills 		
Existing land at Dhapa is almost exhausted and may suffice for another 1-2 years		

2

Existing Solid Waste Treatment and Disposal Facilities in Kolkata

Existing Solid Waste Treatment and Disposal Facilities in Kolkata

Compost Plant – with capacity of 500TPD is operational in Dhapa



Modes of Wise Uses of Compost Plants

- It minimizes or avoids green house gas emission from anaerobic decomposition of organic waste.
- It improves the soil quality, enhance water retention capacity of soil, improves pest resistance of crops
- It increases the design life of other waste management facilities

Existing Solid Waste Treatment and Disposal Facilities in Kolkata

Bio- Remediation Project

MSW dump site covered scientifically with different protection layers:
 Impermeable HDPE Liner
 Installation of Drainage Layer
 Protection of soil layer
 Vegetative layer seeded with grass and shrubs

Development of laboratory scale process know how for making common building blocks is possible as per the study conducted by CGCRI



Wise Uses

- No windblown waste problem; Prevention of transportation of waste by surface water
- Venting of landfill gas through compost windrows for oxidation of methane thereby reducing odour problem.
- Elimination of Leachate contaminated surface water by prevention of infiltration of rain water inside the dump
- Improvement in the aesthetic appearance of the area; elimination of insect breeding and lowering environmental related diseases
- Treatment of trapped leachate inside the dump through leachate treatment plant

3

Need for the Future

Need for the Future

Waste Generation Capacity of Kolkata is 4000 MT/ day

- Requirement of Land Area for Construction & Demolition Waste Management Facility
- Requirement of Land Area for Waste to Energy projects
- Development of Engineered Landfills
- Augmentation of Dhapa dumping site for construction and development of waste management facilities

In case of non-availability of land for augmentation of Dhapa, Garbage Disposal will be a big challenge in Kolkata.

4

Wise Use of EKW by various SWM initiatives

Wise Use of EKW by various SWM initiatives

Construction and Demolition Waste Management Facility



Wise Uses

- Residue utilization for construction of bricks, pavement blocks, construction materials etc.
- Profitable use of C&D waste will minimize both the cost of managing such waste, and requirement for valuable landfill space
- Generation of employment opportunity
- Reduction in use of virgin soil

Wise Use of EKW by various SWM initiatives

Waste to Energy Projects



Wise Uses

- Proven waste to energy technology include incineration of MSW with recovery of energy either as heat or converted to electricity and production of calorific value RDF which is fast gaining acceptance for Kolkata city waste
- Reduction in Landfill Volumes

Wise Use of EKW by various SWM initiatives

Engineered Landfill



Wise Uses

- Residues from Processing and Treatment Plants will be dumped in Engineered Landfills.
- Reduction of Ground and Under Water Contamination.
- Reduction of Air Pollution and Elimination of Bad Odour.
- Control of other problems like rodents, fire, bird menace, erosion etc.

5

Need for Augmentation of Existing Dhapa Landfill site

Need for Augmentation of Existing Dhapa Landfill site

- 1 Common disposals of waste of KMC and neighbouring Municipalities to the augmented Dhapa Disposal Site
- 2 Less Transportation Cost by availing a nearby dumping site
- 3 Lack of space in Kolkata and surrounding regions for Augmentation of Existing Landfill site
- 4 Geographical Location of Dhapa is distant to Ganga thereby ensuring prevention of contamination of Ganga
- 5 No requirement of Land Acquisition as part of EKW belongs to KMC
- 6 Service Level of Benchmark of SWM

6

Our Proposition and Planned Projects by wise use of EKW

Our Proposition

Objectives

To undertake development work related to construction of Engineered Landfill, C&D Waste Management facilities, Composting Plants, Waste to Energy plants, wastewater treatment plant, etc.

To seek land that can be used as a dumping site as the existing Dhapa dumping site is almost exhausted

To attract funding from various donor agencies like World Bank, Asian Development Bank, etc.

Planned Projects

SWM Projects

Sl. No.	Projects/ Activities	Capacity	Status	Land Required	Location
1	Existing Composting Plant	500 TPD	Running	23 acre	Dhapa disposal site
2	Augmentation of Compost Plant	1000 TPD	Planned	35 acre	Adjacent to the existing plant if notification is amended
3	Waste to Energy Project	600 TPD	Planned	6 acre	Chapna Mouza, Rajarhat
4	Waste to Energy Project (2 nd Phase)	1500 TPD	Planned	15 acre	Dhapa site if notification is amended
5	Construction and Demolition waste processing plant	500 TPD	Planned	5 acre	Dhapa site if notification is amended
6	Construction of engineered landfill at Rajarhat	500 TPD	Sanctioned	20 acre	Chapna Mouza, Rajarhat
7	Construction of engineered landfill	2500 TPD	Planned	250 acre	Dhapa site if notification is amended

7

Conclusion

Conclusion

Kolkata Municipal Corporation proposes to have the solid land under the East Kolkata Wetlands be taken off the Ramsar Convention so that those lands can be of wise use to the city of Kolkata and various development activities can be undertaken on such lands

End of Part- I

“Needs for Changes in the Statutes & Practices” – Part- II

Agenda

- *Applicable Legislations in the East Kolkata Wetlands Area*
- *Excerpts from the Legislations*
- *Proposed Modification related to East Kolkata Wetlands Area from the Schedule I & II of the East Kolkata Wetlands (Conservation And Management) Act, 2006 [West Bengal Act VII of 2006]*

1 *Applicable Legislations in East Kolkata Wetlands Area*

Applicable Legislations in East Kolkata Wetlands Area

- The East Kolkata Wetlands (Conservation And Management) Act, 2006 [West Bengal Act VII of 2006]
- The East Kolkata Wetlands (Conservation And Management) Rules, 2006
- Wetlands (Conservation And Management) Rules, 2010
- Wetlands (Conservation And Management) Amendment Rules, 2016
- Environment (Protection) Act, 1986 (29 of 1986)
- West Bengal Land Reforms Act, 1955

2 *Excerpts from the Legislations*

Excerpts from the Legislations

In the matter of : - The East Kolkata Wetlands (Conservation And Management) Act, 2006 [West Bengal Act VII of 2006]

Sl. No.	Sections	Section Name	Act in a Nutshell
1.	9	Maintenance and preservation of land in East Kolkata Wetlands	.... Not converted for any purpose other than the purpose for which it was settled or previously held, except with the previous <i>sanction of the Authority under Section 10.</i>
2.	10	Procedure for granting sanction	1).....Application for change of character or mode of use of land to the Authority. 2).....Authority shall examine the merit & if necessary, inspect the proposed site. 3) Authority shall refer to the Collector of concerned District for issuance of an Order U/S 4C of the West Bengal Land Reforms Act, 1955. 4).....On receipt Collector's Order, the Authority may pass, with restrictions & conditions as order granting sanction for change of character or mode of use of the land. 5) Authority to grant sanction for change of character or mode of use of a land unless the change is for improvement or upkeep the local environment & its surroundings.

Excerpts from the Legislations			
In the matter of : - The East Kolkata Wetlands (Conservation And Management) Rules, 2006			
Sl. No.	Rules	Sub-Rules	Act in a Nutshell
1.	8	Application for change of character or mode of use of land	..... Procedure of Application (as specified in <u>Section 10</u> of the East Kolkata Wetlands (Conservation And Management) Act, 2006) [West Bengal Act VII of 2006]
2.	9	Permission for change of character or mode of use of land	.....Procedure of Permission (as specified in <u>Section 10</u> of the East Kolkata Wetlands (Conservation And Management) Act, 2006) [West Bengal Act VII of 2006]

Excerpts from the Legislations			
In the matter of : - Wetlands (Conservation And Management) Rules, 2010			
Sl. No.	Rules	Sub-Rules	Act in a Nutshell
1.	4	(3)	.... .. The Central Government may permit any of the prohibited activities or non-wetland use in the protected wetland on the recommendation of the Authority.
2.	4	(4)	.....State Govt. shall ensure detailed Environment Impact Assessment is carried out according to the prescribed procedure.
3.	4	(5)	..... wetland shall be converted if the Central Government is satisfied on the recommendation of the Authority that it is expedient in the public interest.

Excerpts from the Legislations			
In the matter of : - Wetlands (Conservation And Management) Amendment Rules, 2016			
Sl. No.	Rules	Sub-Rule	Act in a Nutshell
1.	2	(i)	.... .... the term "Authority" has been modified / amended.

Excerpts from the Legislations			
In the matter of:- Environment (Protection) Act, 1986 (29 of 1986)			
Sl. No.	Section	Section Name	Act in a Nutshell
1.	3	POWER OF CENTRAL GOVERNMENT	.... Central Govt. confers / gets the power to make Rules.
2.	25	POWER TO MAKE RULES	.... Central Govt. confers / gets the power to frame Rules.

Remarks- Amendments may be made under the above mentioned Section 3 & 25 of Environment (Protection) Act, 1986 (29 of 1986).

Excerpts from the Legislations			
In the matter of:- West Bengal Land Reforms Act, 1955			
Sl. No.	Section	Section Name	Act in a Nutshell
1.	4C	Permission for change of area, character or use of land.	.... ....the Collector can take necessary action for issuance of an order under Section 4C of the Act.

<div>3</div> <p><i>Proposed Modification related to East Kolkata Wetlands Area from the Schedule I & II of the East Kolkata Wetlands (Conservation And Management) Act, 2006 [West Bengal Act VII of 2006]</i></p>			

Proposed Modifications

That the land status in EKW Area consists of four types as follows:

1. Substantially Water body-oriented Area, 2. Agricultural Area, 3. Productive Farming Area, 4. Urban/Rural Settlement, part of which belongs to KMC.

The said above land which belongs to KMC and is included in the list of RAMSAR Sites as specified in the Schedules (I & II) of The East Kolkata Wetlands (Conservation And Management) Act, 2006 [West Bengal Act VII of 2006], may be proposed for amendment by omission from the Schedules of the above-said Act, for subsequent wise-use.

The above proposed amendments may be placed by any Contracting Parties, where Govt. of India is one of them, as per Article 10 of the Convention on Wetlands (Ramsar, Iran, 1971).

THANK YOU

Presentation of Smt. Lalita Laxmi, Joint Secretary, Land and Land Reforms Department, Govt. of West Bengal

LAND CLASSIFICATION, CHANGE OF LAND USE & CONSERVATION OF WETLANDS

WEST BENGAL LAND REFORMS ACT

LAND CLASSIFICATION...

- CLASSIFICATION HAS BEEN DONE DISTRICT WISE
- LIST IS AVAILABLE ON WEBSITE
www.banglarbhumi.gov.in
- REFLECTED IN THE RECORD OF RIGHT

CONVERSION OF LAND USE..LEGAL PROVISIONS

- SEC 4B: OBLIGATION OF THE RAIYAT
 - MAINTAIN AND PRESERVE LAND
 - ENSURE THAT AREA IS NOT DIMINISHED
 - CHARACTER IS NOT CHANGED WITHOUT PERMISSION OF THE COLLECTOR

CONVERSION OF LAND USE..LEGAL PROVISIONS

- SEC 4C:
 - RAIYAT MAY APPLY TO COLLECTOR FOR PERMISSION FOR CONVERSION
 - COLLECTOR MAY
 - AFTER MAKING ENQUIRY
 - ALLOW OR REJECT SUCH PETITION

POINTS FOR CONSIDERATION BEFORE COLLECTOR ...

- APPLICATION IN PRESCRIBED FORMAT
- COPY OF ROR/MUTATION CERTIFICATE
- COPY OF UP TO DATE RENT RECEIPT
- INTEREST OF BARGADAR
- PUBLIC EASEMENT
- NOC FROM LOCAL BODY
- POSSESSION OF LAND
- PRESENT USE
- PROPOSED USE AND ITS COMPATIBILITY WITH THE LAND USE PATTERN OF THE AREA

CONVERSION -QUASIJUDICIAL PROCEEDING

- OPPORTUNITY OF HEARING TO THE APPLICANT/INTERESTED PERSONS
- ORDER U/S 4C (2)
- CONVERSION CERTIFICATE
 - DATE OF EFFECT
 - TIME WITHIN WHICH THE CONVERSION MUST BE CARRIED OUT ON GROUND
 - MODIFICATION OF CLASSIFICATION IS INCORPORATED IN ROR AFTER ACTUAL CONVERSION.
- APPROVALS FOR CONSTRUCTION BY OTHER DEPTS/LOCAL AUTHORITIES ONLY AFTER PERMISSION OF COLLECTOR FOR CHANGE OF LAND USE. SEC 4C (4A)

REGULARISATION...SEC 4C(6)

SL NO	LOCATION	LIMIT
1	MUNICIPAL AREAS	0.03 ACRES
2	NON-MUNICIPAL AREAS	0.08 ACRES

POWERS OF COLLECTOR...

SL.NO	DESIGNATION	JURISDICTION
1	BLOCK LAND AND LAND REFORMS OFFICER	NOT EXCEEDING 0.10 ACRES
2	SUB-DIVISIONAL LAND AND LAND REFORMS OFFICER	EXCEEDING 0.10 ACRES BUT NOT EXCEEDING 1 ACRE
3	DISTRICT LAND AND LAND REFORMS OFFICER	ALL CASES NOT MENTIONED IN SL NO 1 AND 2 ABOVE

**CONVERSION OF WATERBODIES
...SPECIAL PROVISIONS**

- ALL PETITIONS FOR CONVERSION OF WATERBODIES ARE DISPOSED BY DL & LRO IRRESPECTIVE OF THE QUANTUM OF LAND INVOLVED
- COMPENSATORY WATER BODY OF EQUAL OR LARGER SIZE TO BE CREATED
- THE APPLICANT HAS TO FURNISH DETAILS OF PLOT NO, AREA OF PLOT, EXISTING CLASSIFICATION WHERE THE COMPENSATORY WATER BODY IS PROPOSED.

**CONVERSION OF WATERBODIES
...SPECIAL PROVISIONS**

- COMPENSATORY WATER BODY TO BE CREATED WITHIN 90 DAYS OF ISSUE OF THE ORDER
- APPLICANT TO SUBMIT DOCUMENTARY EVIDENCE SHOWING CREATION OF WATERBODY WITHIN 15 DAYS AFTER THE EXPIRY OF THE 90 DAY PERIOD
- WATER BODY SO CREATED SHOULD BE MAINTAINED
- IN CASE OF FAILURE TO CREATE, PERMISSION FOR CONVERSION IS LIABLE TO BE CANCELLED
- IF EXISTING WATER BODY IS ALREADY CONVERTED TO OTHER USE, THE APPLICANT IS LIABLE TO RESTORE THE SAME/OR PAY RESTORATION COST
- REGULARISATION OF WATERBODY CONVERTED WITHOUT PRIOR PERMISSION IS NOT ALLOWED

PENAL PROVISIONS (SEC 4D)...

- ANY CHANGE EXCEPT IN ACCORDANCE WITH PROVISIONS OF SEC 4C/VIOLATION OF THE ORDER OF THE COLLECTOR; COGNIZABLE AND NON-BAILABLE OFFENCE
- IMPRISONMENT FOR MAXIMUM OF 3 YEARS
- FINE UPTO RS.50,000/-

**WBLR ACT READ WITH
EKWCM ACT...**

- SEC 10 OF EKW(C&M) ACT
 - APPLICANT MAY APPLY TO AUTHORITY UNDER EKW(C&M) ACT PERMISSION FOR CHANGE IN LAND USE
 - THE AUTHORITY SHALL EXAMINE THE MERIT OF THE CASE AND INSPECT THE SITE IF REQUIRED
 - THE AUTHORITY SHALL REFER THE CASE TO THE COLLECTOR FOR DISPOSAL UNDER SEC 4C OF THE WBLR ACT
 - UPON RECEIPT OF COLLECTOR'S ORDER, THE AUTHORITY MAY PASS NECESSARY ORDERS.

**WBLR ACT READ WITH
EKWCM ACT...**

- **ORDER DATED 03/03/2008 ISSUED
BY MEMBER SECRETRAY EKWA**
- COLLECTOR TO TAKE CLEARANCE FROM
EKWA BEFORE ISSUING ORDER U/S 4C
- LOCAL AUTHORITIES TO TAKE
CLEARANCE FROM EKWA BEFORE
SANCTIONING BUILDING PLAN ETC

THANK YOU

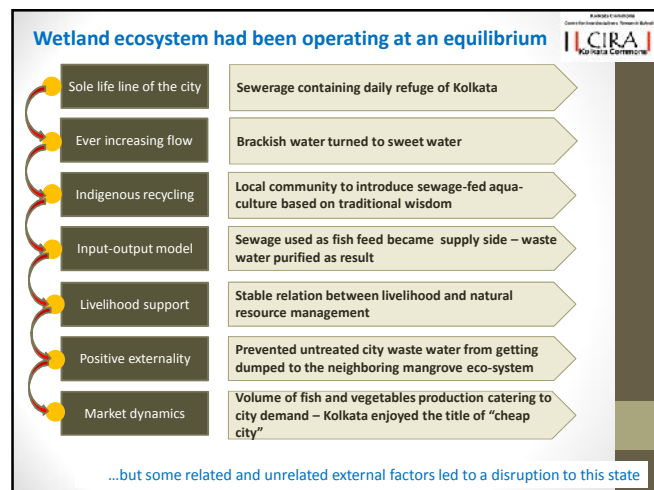
Presentation of Shri Asesh Sengupta, Research Coordinator, CIRA

East Kolkata Wetland: Management Approach

Presented at Policy Workshop on East Kolkata Wetland on 03rd March, 2017

Kolkata Commons
Centre for Interdisciplinary Research & Analytics

CIRA
Kolkata Commons



"It is unrealistic to expect any earnest efforts towards conservation to succeed if the ecology of an area is underrated by the people who should be its custodians."

(The Green Travel Guide, 1998)

- The livelihood question of the population residing within East Kolkata Wetland yet to be addressed adequately
- People living in Kolkata has never been made responsible to the same extent as people in East Kolkata
- The socio-economic changes since 1985 when the map was first drawn has not been addressed adequately in the conventional kind of conservation effort. Protected area approach to conserve these wetlands has not worked.
- Instead of treating the issue in an integrated ecosystem way, the wetland has been addressed from more sort of a law and order perspective.

Conservation in management context: important concepts

Evolutionary change
Not to stop genetic change and thus evolutionary change, not to try and conserve the status quo, but rather to ensure that populations may continue to respond to environmental change in an adaptive manner.

Dynamic ecology
To understand how the interplay between nonequilibrium processes and the hierarchy of species interactions determines community structure and biodiversity.

Landscape ecology
To understand the interrelationship among natural resources and interconnection of ecosystems within landscape and interconnection among landscapes

The human presence
Any conservation efforts that attempt to safeguard nature from humans will fail.

A comparison between management approaches

Conventional Management	Ecosystem Management
<input type="checkbox"/> Emphasis on natural resource extraction and commodities	<input type="checkbox"/> Emphasis on balance between commodities, amenities and ecological integrity
<input type="checkbox"/> Equilibrium perspective	<input type="checkbox"/> Non-equilibrium perspective
<input type="checkbox"/> Ecological stability	<input type="checkbox"/> Dynamics, resilience
<input type="checkbox"/> Climax communities	<input type="checkbox"/> Shifting mosaics
<input type="checkbox"/> Reductionism	<input type="checkbox"/> Holism
<input type="checkbox"/> Prescription, command, and control management	<input type="checkbox"/> Uncertainty and flexibility; adaptive management
<input type="checkbox"/> Site specificity	<input type="checkbox"/> Attention to context
<input type="checkbox"/> Solutions imposed by resource management agencies	<input type="checkbox"/> Solutions developed through discussions among stakeholders
<input type="checkbox"/> Optimization, problem simplification, search for single best answer	<input type="checkbox"/> Multiple solutions to complex problems
<input type="checkbox"/> Confrontation, single-issue polarization	<input type="checkbox"/> Consensus building, multiple issues
<input type="checkbox"/> Public seen as adversary	<input type="checkbox"/> Public invited as partners

Meffe, G.K., et al. 1997. Principles of Conservation Biology

◆ The objectives of management of land, water and living resources are a matter of societal choices.

Indigenous peoples and other local communities living on the land are important stakeholders and their rights and interests should be recognized. Both cultural and biological diversity are central components of the ecosystem approach, and management should take this into account.

◆ Management should be decentralized to the lowest appropriate level.

Management should involve all stakeholders and balance local interests with the wider public interest. The closer management is to the ecosystem, the greater the responsibility, ownership, accountability, participation, and use of local knowledge.

◆ Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

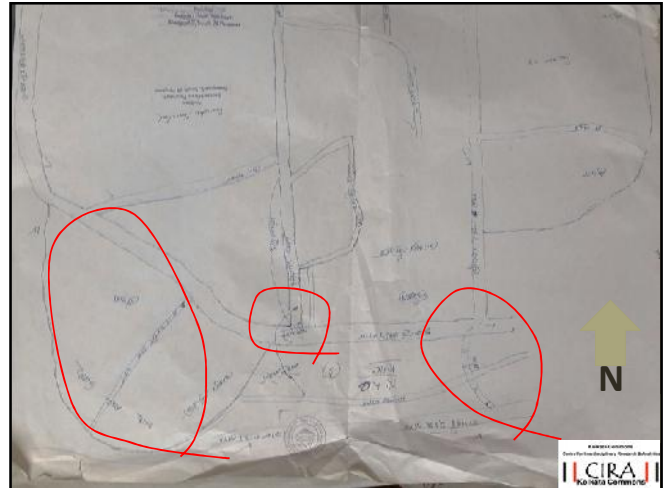
Management interventions in ecosystems often have unknown or unpredictable effects on other ecosystems; therefore, possible impacts need careful consideration and analysis.

An exercise:

- While failed to gather data, we approached each of the seven gram panchayats, with similar exercise:

1. What are the steps necessary to enhance natural resource regime of the wetland?
2. What are the immediate development needs of the area?
3. How do they synergize age old way of life and the urban expansion.

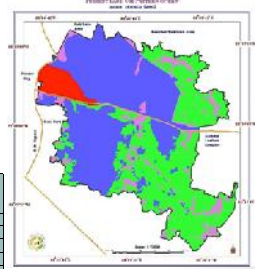
- We first organised group discussions with people of the village
- After all corners were covered, we arranged a meeting in Gram Panchayat Office itself, with all/most panchayat members present, along with the people we have interacted
- Sometime in one day, sometime after series of meetings the maps were drawn by the people along with the elected members of the Panchayat
- The process was not always conflict free but finally attained consensus
- In each case, we found,
 - ✓ They are quite careful to maintain, in some places to increase the water area.
 - ✓ And to get most from the water bodies, the need for canal renovations, need for extension of canal networks, need to increase sewage supply to get the wan to repair sluice gates, need to install new sluice gates



Urbanization and Wetland: Census data 2001 vs 2011

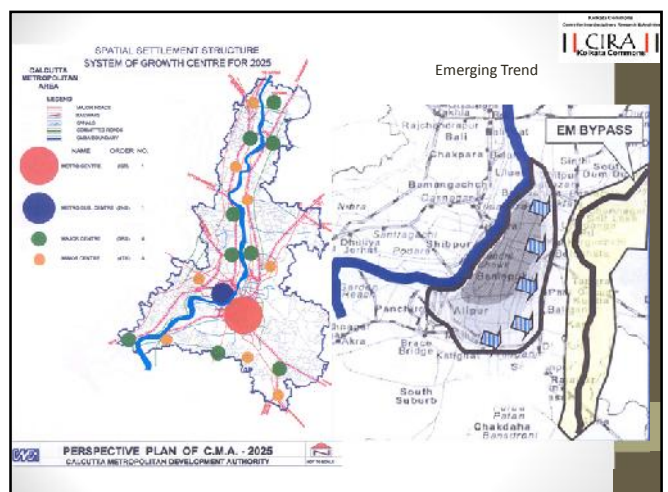
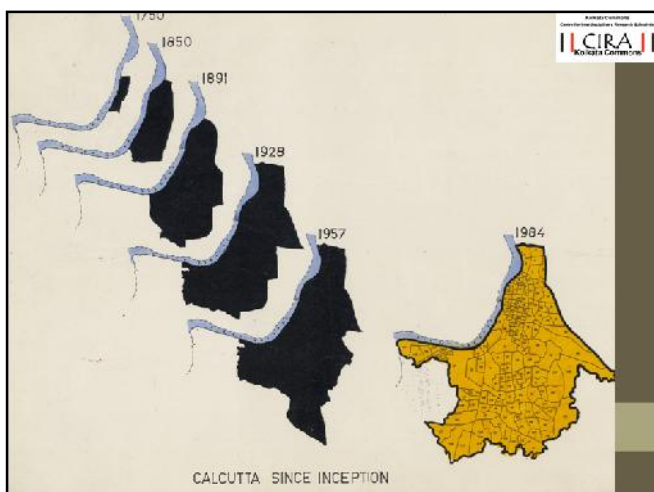


Mouja	% Household increase	% Population increase	% of increase in working population independent of Wetland Ecosystem
Dharmatal Panchuria	40	24	118
Hatgachha	29	22	88
Kulberia	27	20	33



Mouja	Household increase	Population increase	% of increase in working population independent of Wetland Ecosystem
Karimpur	58	53	111
Jagatipota	276	223	218
Bhagabanpur	296	258	238
Mukundapur	567	431	476
Alghara	94	76	133
Ranabhatia	107	89	109

- ✓ East Kolkata Wetland is to be saved the concerns of the custodians of this wetland – a management plan for this Wetland to be made to address these concerns
- ✓ The livelihood of the people residing in East Kolkata is instrumental. All the uncertainties related to the livelihood of the local commons, that in turn depend on the unique natural resource management system, are to be resolved.
- ✓ These concerns involve, supply of sewage to fisheries, maintenance of canal network, making agriculture viable, provision for better market linkages, civic amenities like education, health, drinking water, transport, electricity for the locals



To reduce the threat perception and uncertainty factors, there needs to be a long term urban planning for the metropolis, in which East Kolkata Wetland Ecosystem should be an integral part

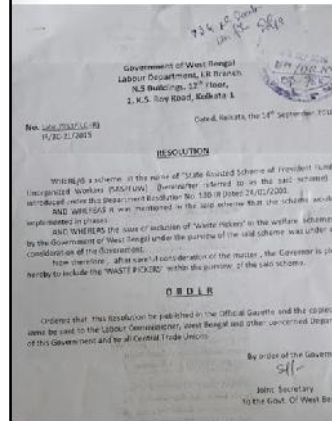
The management need for East Kolkata Wetland is to incorporate this wetland in the urban expansion planning of the metropolis keeping its ecological character intact

The management plan may keep a provision for an institutional arrangement to act as a monitoring system for an effective implementation of the plan. To achieve this a prerequisite would be creating a structured approach for regular collection and maintenance of Demographic and Socio-economic data

Designing and developing appropriate Communication, Education and Public Awareness tools targeting people of Kolkata and people of East Kolkata as well, addressing respective gap areas.

A Brilliant Start:

According to a recent government order on waste pickers which is historic in a sense, it is for the first time waste pickers of any state will be extended with provident fund benefit. This was a result of particular interest shown by the Chief Minister of our state.



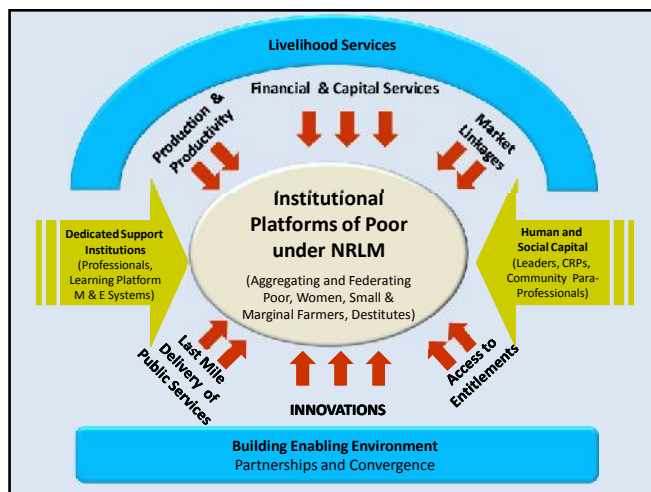
A Proposal from Dr. Dhrubajyoti Ghosh:

Declare the East Kolkata Wetlands as a **World Heritage Site** for the reason that the ecosystem holds a unique example of community knowledge in recycling urban waste, both garbage and sewage. If we lose this, this will be lost to the world forever.

Questions?

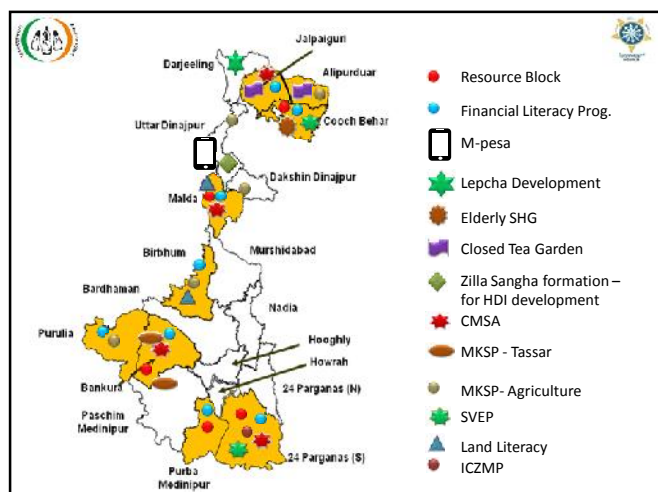
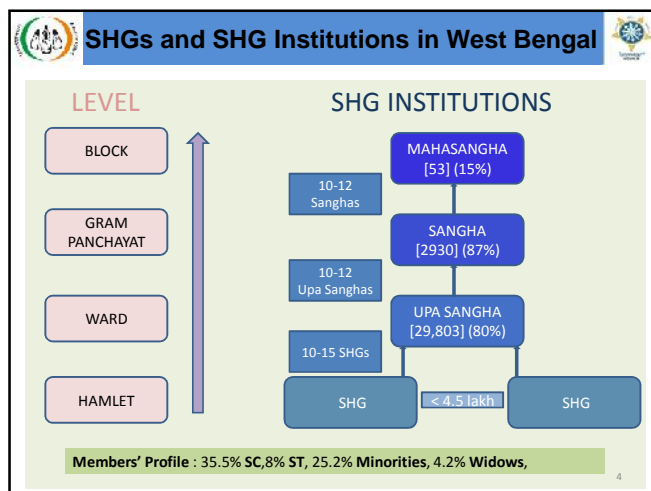


Presentation of Smt. Choten D. Lama, State Mission Director and Chief Executive Officer, WBSRLM




SHG BASICS

- Underlying philosophy is **Strength in Numbers and Discipline**
- 10-20 members from poor womenfolk
- Member must be more than 18 years of age
- Practice of Panchasutras
 - #1. Regular Meetings
 - #2. Regular Savings
 - #3. Regular Inter-lending
 - #4. Regular Repayment
 - #5. Regular Record-Keeping
- Opening of Bank Account
- Credit linkage

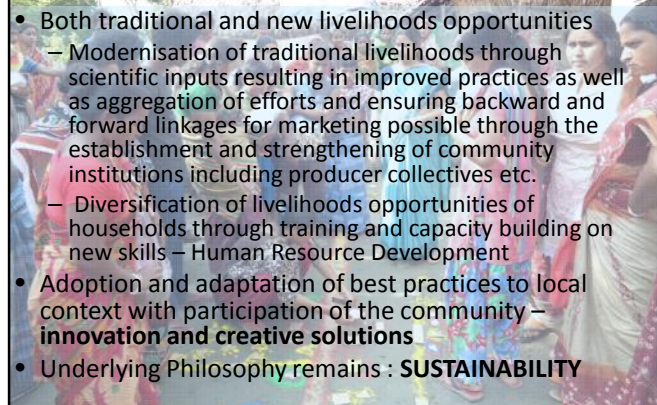


5 Year Vision


- 6 Lakh vibrant women SHGs – covering the most vulnerable sections of society : 3.24 Crore poor people impacted positively by the movement.
- 3349 Women's Cooperatives in the State at the Gram Panchayat providing financial services to members.
- SHG Institutions playing a positive and significant role in the poverty reduction plan of the Gram Panchayat (meaning the entire rural landscape).
- Women leaders developed at the grass-root level for ensuring women have a voice in determining their future as well as the future of their community.



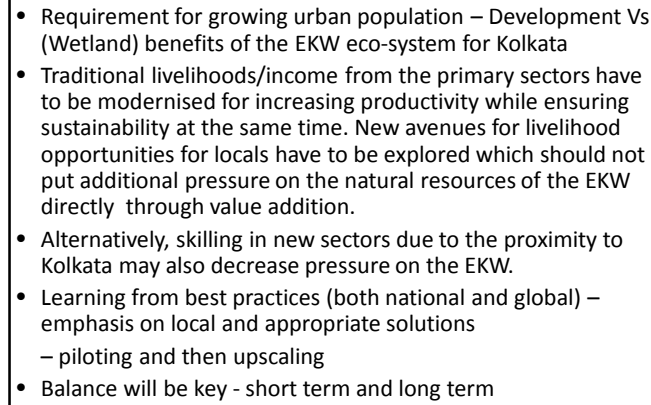
Ensuring Livelihoods and Enhancing Incomes - WBSRLM's Strategy



- Both traditional and new livelihoods opportunities
 - Modernisation of traditional livelihoods through scientific inputs resulting in improved practices as well as aggregation of efforts and ensuring backward and forward linkages for marketing possible through the establishment and strengthening of community institutions including producer collectives etc.
 - Diversification of livelihoods opportunities of households through training and capacity building on new skills – Human Resource Development
- Adoption and adaptation of best practices to local context with participation of the community – **innovation and creative solutions**
- Underlying Philosophy remains : **SUSTAINABILITY**



Livelihoods in the EKW Context



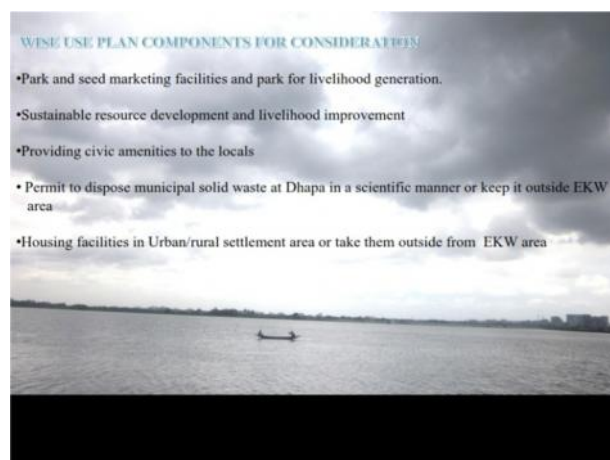
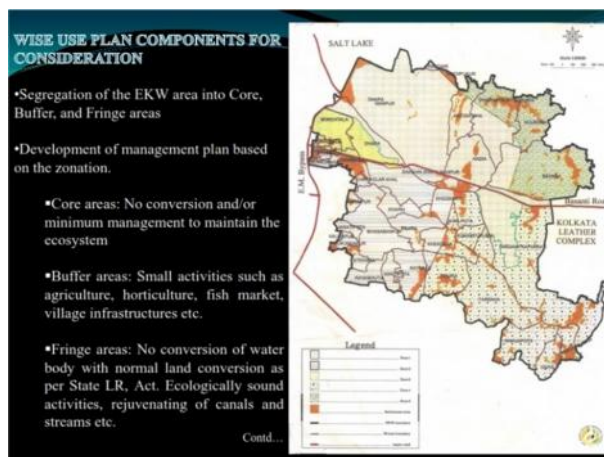
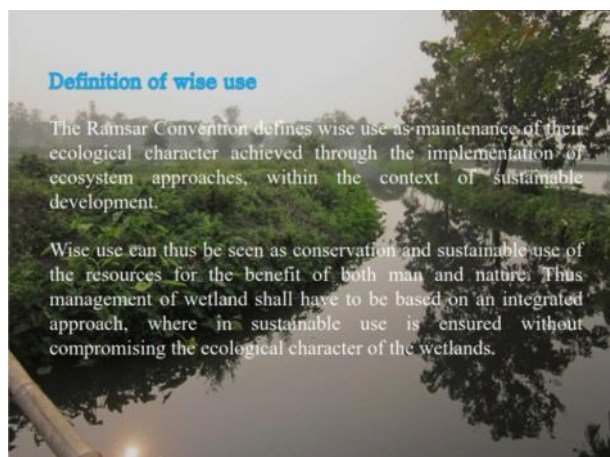
- Requirement for growing urban population – Development Vs (Wetland) benefits of the EKW eco-system for Kolkata
- Traditional livelihoods/income from the primary sectors have to be modernised for increasing productivity while ensuring sustainability at the same time. New avenues for livelihood opportunities for locals have to be explored which should not put additional pressure on the natural resources of the EKW directly through value addition.
- Alternatively, skilling in new sectors due to the proximity to Kolkata may also decrease pressure on the EKW.
- Learning from best practices (both national and global) – emphasis on local and appropriate solutions
 - piloting and then upscaling
- Balance will be key - short term and long term



TECHNICAL SESSION 3

Discussion on evolving wise use plan and programme

Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat and Shri Arnab Roy, Principal Secretary, Environment Department, Government of West Bengal jointly chaired the session. Shri Roy introduced this session with the following presentation:



Introduction and background of this topic is followed by presentation from following speakers

Presentation of Shri Chinmoy Chakraborty and Shri Souma Ganguly of Kolkata Environmental Improvement Project (KEIP)

PROPOSED EAST KOLKATA WETLAND PARK (EKWP)

OF
KOLKATA MUNICIPAL CORPORATION

-- An unique outdoor wetland interpretation centre near Kolkata--

ESSENTIAL FACTS ABOUT EKW

- COVERS APPROX 12500 HECTARES
- CONSISTS OF FOUR LAND USE COMPONENTS:
 - > CORE (4000 HECTARES) FISH POND SYSTEMS
 - > GARBAGE FARMING LAND
 - > CULTIVATION AREA
 - > HABITATION AREA
- DESIGNATED A RAMSAR SITE IN 2002
- LAND USE CHANGE PROHIBITED BY KOLKATA HIGH COURT
- ACTS AS AN URBAN FACILITY TREATING KOLKATA'S WASTE WATER

WILDLIFE VALUES OF EKW

EKW SUPPORTS EXCEPTIONALLY DIVERSE

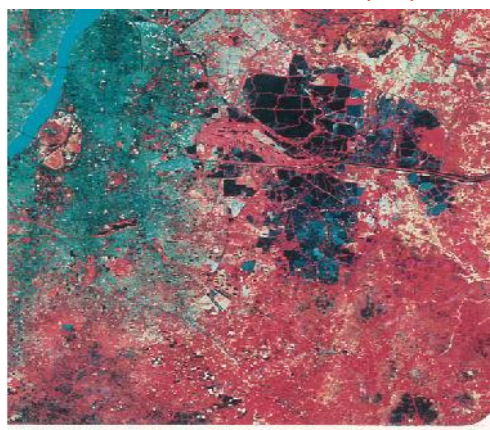
MAMMAL SPECIES LIKE MARSH MONGOOSE, INDIAN GREY MONGOOSE ETC

RARE REPTILE SPECIES LIKE YELLOW MONITOR LIZARD, INDIAN COBRA ETC

AMPHIBIA LIKE GREEN FROG, BULL FOG, COMMON TOAD ETC

LOCAL & MIGRATORY BIRDS

EKW SATELLITE IMAGERY (1997)



OBJECTIVES OF DEVELOPING EKWP

TO PROMOTE A MINIMALLY INVASIVE VISITOR
ATTRACTION CENTRE

- THEMED ON VALUES AND NEED TO CONSERVE WETLAND ECO-SYSTEM
- PROVIDING OUTDOOR RECREATION
- CREATING OPPORTUNITIES FOR STUDENTS, NATURALISTS, COMMON PEOPLE AND LOCAL COMMUNITY TO STUDY BIOLOGICAL RESOURCES OF A PERI-URBAN WETLAND

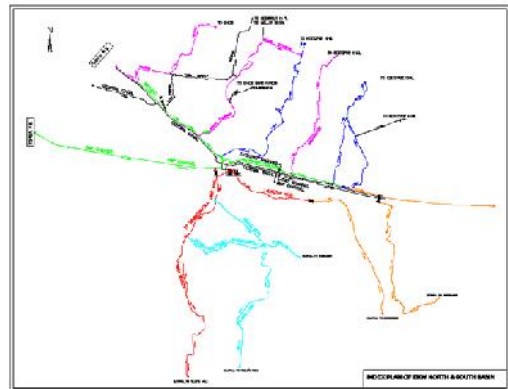
THE BANTALA SITE

- EKWP PROPOSED TO BE LOCATED NEAR BANTALA WITHIN EKW
- ABOUT 12 HECTARES IN SIZE
- FALLS WITHIN LARGER RAMSAR SITE
- SITUATED OFF MAIN ROAD TO BASANTI

CURRENT WILD LIFE VALUE OF BANTALA & SURROUNDING AREAS

- PROVIDE OPPORTUNITIES FOR WETLAND RESTORATION
- ALLOWING NATIVE SPECIES TO GROW
- PROMOTING A HIGH QUALITY HABITAT OF SPECIES INDIGENOUS TO EKW

BANTALA LOCATION



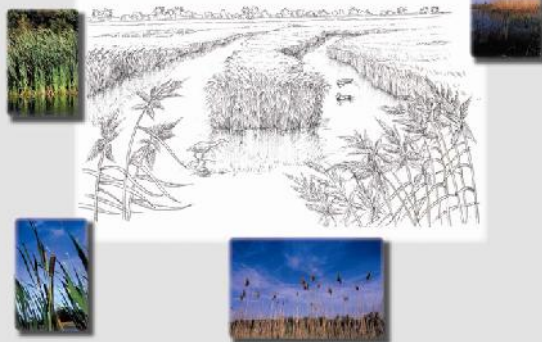
GENERAL LAY OUT OF BANTALA HABITAT AREA



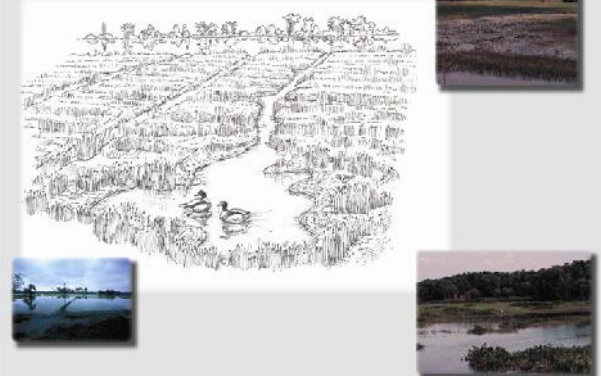
FOLLOWING HABITATS SUITABLE FOR DEVELOPMENT AT BANTALA SITE

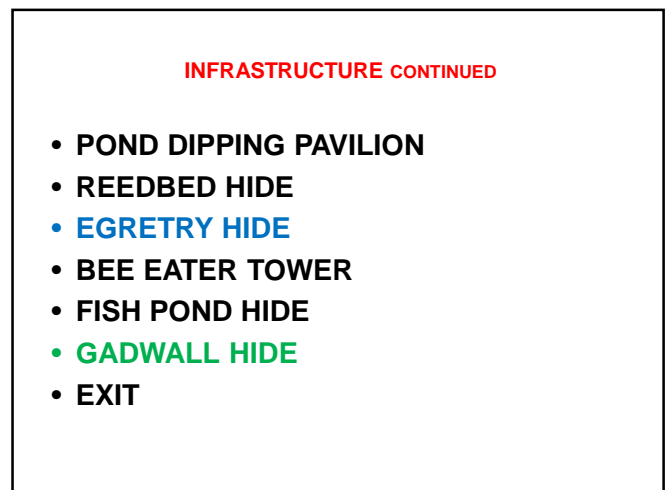
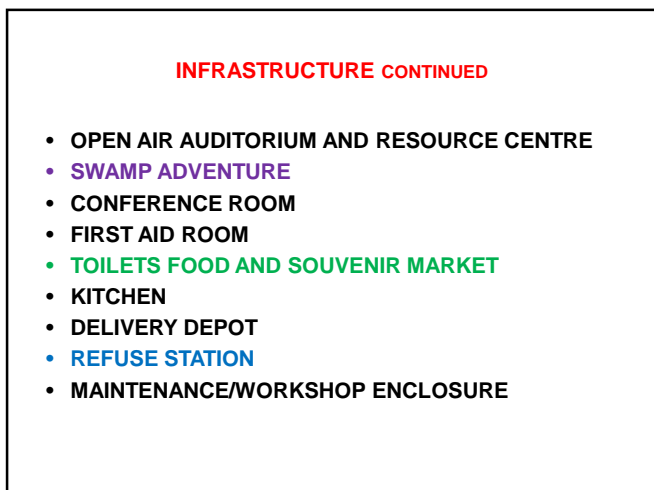
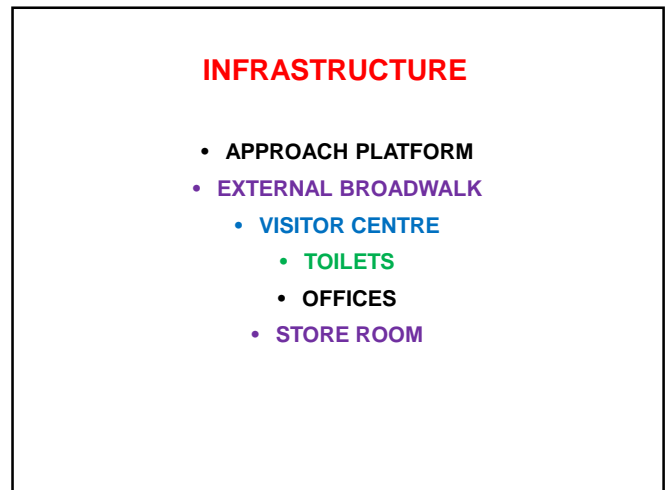
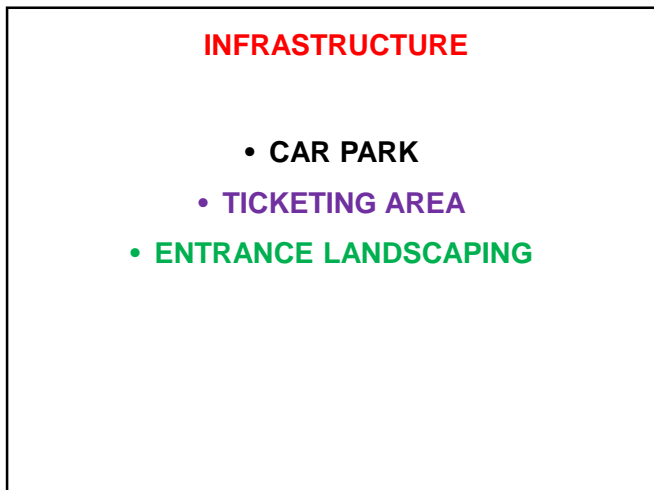
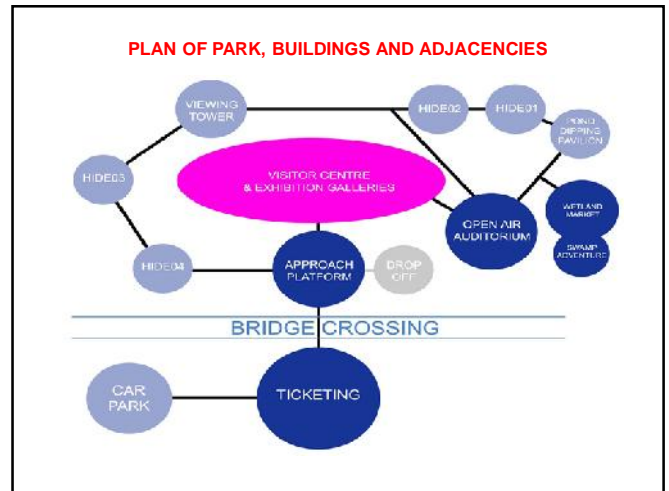
- REED BED
- WET GRASSLAND WITH WADER SCRAPE
- ISLAND WITH TREES
- OPEN WATER WITH VEGETATION FRINGE
- WET WOODLAND

Reedbed Hide View



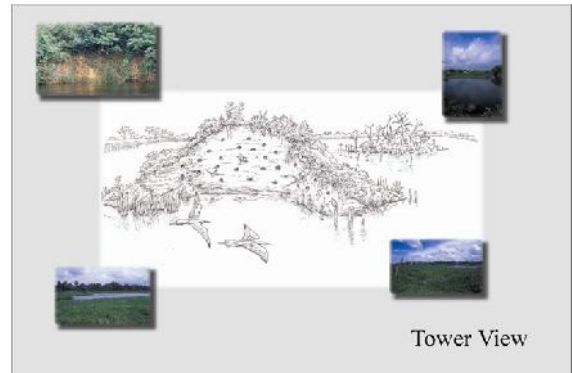
Wet Grassland Hide View



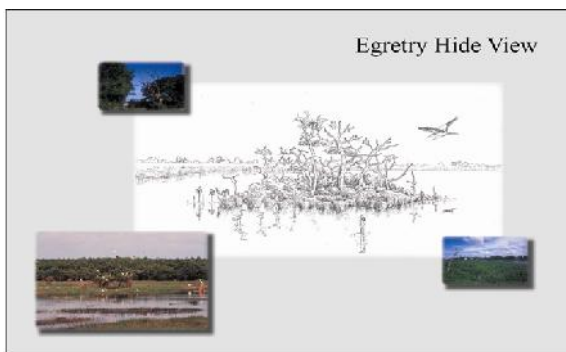


OUTDOOR OBSERVATORIES

EGRETRY TOWER VIEW



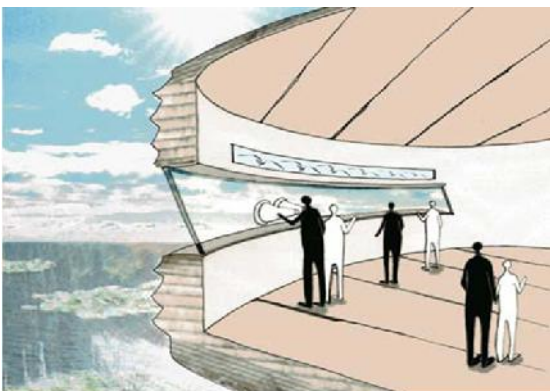
EGRETRY HIDE VIEW



REEDBED HIDE SKETCH



BEE EATER TOWER



FISHPOND HIDE SKETCH



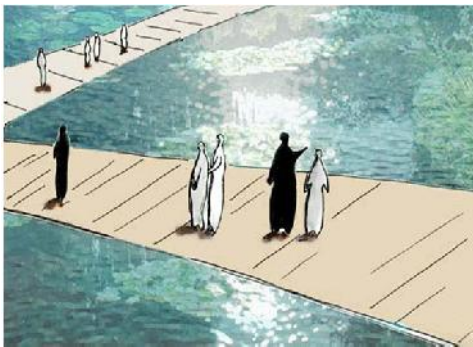
GADWALL HIDE SKETCH



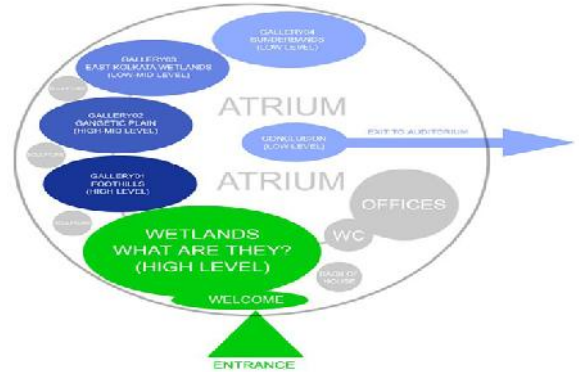
Approach Platform



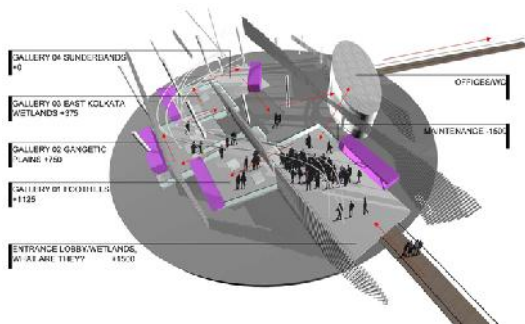
External Boardwalk



WETLAND VISITOR CENTRE



WETLAND VISITOR CENTRE (INTERIOR PLAN)



WETLAND VISITOR CENTRE (BUILDING EXTERIOR VIEW)



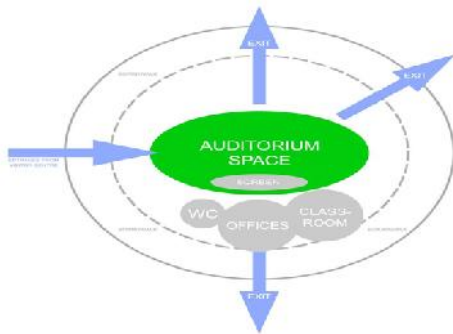
WETLAND VISITOR CENTRE (BUILDING EXTERIOR REAR VIEW)



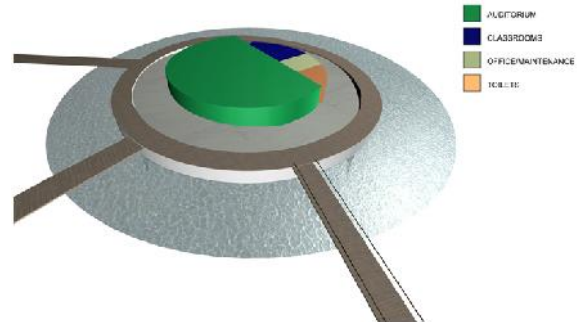
WETLAND VISITOR CENTRE (BUILDING INTERIOR VIEW)



AUDITORIUM PLAN



AUDITORIUM ARCHITECT VIEW



REST AND PLAY AREAS



POND DIPPING PAVILION



BUDGET ESTIMATE

- Estimated capital expenditure Rs. 30.0 Crores
- Estimated Initial Operating Expenditure Rs. 6.0 Crores per year
- Estimated Revenue earning Rs. 0.2 Crores per year

CONCLUSION

- NEED FOR A WETLAND INTERPRETATION CENTRE USING ADVANTAGES OF EKW ON EASTERN FRINGES OF KOLKATA IS UNEQUIVOCAL
- NO CHANGE IN LAND USE IN EKW AREA DUE TO EKWP
 - PROMOTION OF ECO TOURISM
- CONSTRUCTION WITH LOCAL MATERIALS AS FAR AS PRACTICABLE
- PROMOTION OF VALUE OF EKW AS A PERIURBAN RAMSAR WETLAND TO STUDENTS, NATURALISTS, TOURISTS AND LOCAL COMMUNITY

Presentation of Dr. Suchandra Bardhan and Shri P.K. Dua of KMC

PROPOSAL FOR ECOLOGICALLY SOUND LAND USE OF EKW



Krishi-krishti Veethi
Utilising KMC land on the Eastern side of E. M. By-pass, Kolkata for socio-economic/ cultural purpose

Dr. Suchandra Bardhan,
M. Landscape Arch., PhD.
Professor, Dept. of Architecture,
Jadavpur University
Through IIPC-JU

CONTENTS

- I: Introduction
- II: Site & SWOC Analysis
- III: Guiding Principles & Vision Statement
- IV: Proposed Landscape Concept
- V: Area Statement
- V: Expected Benefits

2

BASICS	
1	WHO Kolkata Municipal Corporation (KMC)
2	WHAT Utilize approx 14 Acres of land on the eastern side of the EM By-pass (opposite Silver Spring Housing Complex)
3	WHY For socio-economic / cultural purposes by adopting sustainable practices of landscape planning and design.
4	WHERE Mouza - Bonchtola

Introduction




SITE & 'SWOC' ANALYSIS

- Location**- East of E.M. By-pass opp. Silver Spring Hsg. Complex
- Site**: Essentially a linear stretch extending in approximate north-south direction, separated by a road and canal into a northern & a southern flank.

SITE

- Northern flank- 28270.2 Sqm (6.98 acres);
- Average width – 88.5 Metres
- Southern flank- 29174 Sqm (7.2 acres);
- Average width – 103.5 Metres
- Total site area - 57444.2 Sqm or 14.2 acres**



Existing Land character



Type	Land Use/condition	Area (Sq m)
Land	Vegetable farming/ degraded	52829.2
Water-body	Weeded and semi-dried	4615
TOTAL SITE AREA		57444.2

Existing Land character



SWOC Analysis

Aspects	Characteristics	Addressing the aspects
Strength	i. Vast openness and being part of a larger protected area ii. Good accessibility iii. Good visibility from adjoining city- edge	Visual and environmental quality to be enhanced and reinforced.
Weakness	i. The linearity of the site ii. Exposure to noise and air pollution due to adjacency to heavy traffic iii. Ecologically sensitive and vulnerable	Appropriate buffer and selection of native & endemic wetland species preferred. Structural foot-print to be minimum and only temporary structures that are reversible & do not alter the land character significantly to be used.
Opportunities	i. Engaging public in environmentally sensitive activities	Awareness through Exhibition/workshops may be proposed
Challenges	i. Protection from incompatible use ii. Augmentation & Retention of ecological health	Retaining all existing trees, rest same as '2'

GUIDING PRINCIPLES & VISION STATEMENT

GUIDING PRINCIPLES :

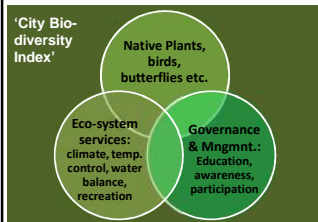
•CITY BIO-DIVERSITY INDEX (Singapore Index)

•IUCN AICHI BIO-DIVERSITY TARGETS

•UNEP's Foresight Process: 21 Issues for 21st C.

•Centre for Science & Environment's Research

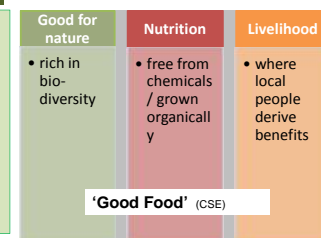
GUIDING PRINCIPLES:



IUCN AICHI BIO-DIVERSITY TARGETS

•**Strategic Goal C:** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity (**3 targets**)

•**Strategic Goal D:** Enhance the benefits to all from biodiversity and ecosystem services (**3 targets**)



VISION STATEMENT



LINKING NATURE & SOCIETY

- By reinforcing the 'Eastern Lungs'
- Nature based tourism

CONCEPT for realising the vision:

Recognizing the ecological significance of the site, this has been visualized as a **'wetland orientation park'** – a **wetland ecology awareness and promotion hub** that may act as an embarkation point for tourists as well as interested citizens for the core wetland area of the city in an **Integrated Kolkata Wetland Tourism Circuit**, that may subsequently include other important wetlands or wetland parks like Eco-park (more importantly, after its maturity), Mudiali etc. to highlight the sustainable management of these ecological assets.

Reinforced with some compatible and permissible public activities, these would open new fronts of nature-based tourism for engaging and educating people in environmentally acceptable and responsible actions.

PROPOSED CONCEPT OF LANDSCAPE DEVELOPMENT



Objective - Proposition

Sl.	Objectives	Proposed Design Highlights
1	To attempt manifold enhancement of eco-system services and productivity of the existing landscape including urban bio-diversity enrichment.	Concept of green-way creation with peripheral plantation of select native evergreen trees having a mix of fruit and flowering species, creation of additional water-bodies, plantation of indigenous & endemic plant species, increasing plant species diversity for ecological corridor formation for birds & butterflies and finally, act as a sink for both Carbon & other air pollutants.



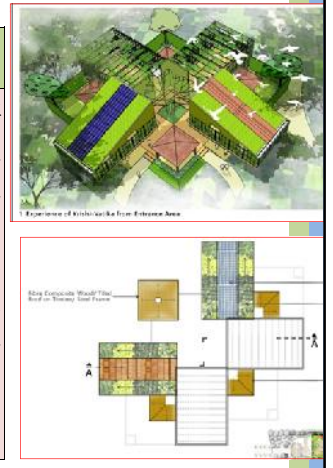
Objective - Proposition

Sl.	Objectives	Proposed Design Highlights
2	To establish a model of environmental augmentation and sustainable use-cum-management of resources for dissemination and public awareness.	Retain natural topography, retain existing water-bodies, clustering existing farming practices in a better way, adopt only organic farming practices, manage organic wastes through composting, 'board walk' for student community.



Objective - Proposition

Sl.	Objectives	Proposed Design Highlights
3	To facilitate 'Nature & Wetland Interpretation' for deeper understanding of the importance of EKW and serve educational purpose through recreational facilities (temporary display/galleries of wetland flora-fauna) created with minimal intervention, for the widest range of audiences.	Some enclosed spaces of temporary nature for Environment related display/exhibition/workshops with vertical farming on their walls and inclined roofs, also with solar PV panels (12 kWp) for self-sustenance in power requirement.





Objective - Proposition

Sl.	Objectives	Proposed Design Highlights
4	To establish a promotional concept in the existing agricultural practices followed along with ideas of sustainable urban living - where the knowledge 'take-away' will be given priority so that people can adopt / apply their new learning in their own environment.	Stand-alone vertical farming/ garden panels (a hydroponic system) for replicating in urban homes, benefits of consuming organic farm produces, vermi-composting of bio-degradable wastes to sensitize separation at source of domestic wastes.



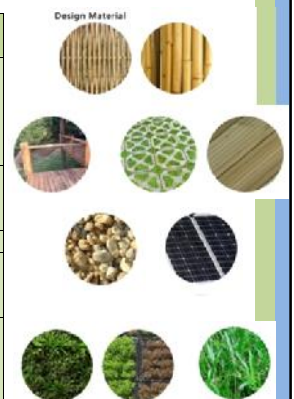
Objective - Proposition

Sl.	Objectives	Proposed Design Highlights
5	To highlight the symbiotic relationship of man and nature by integrating traditional / folk cultural spaces with the natural bio-aesthetics of wetland landscapes.	Open-air podiums for small cultural activities, traditional market stalls serving local food and selling locally produced arts & crafts, landscaped grounds.



Construction materials: mainly Bamboo and Wood-composites and steel where required with necessary foundation below ground level

Sl	Component	Proposed Materials
1	Structure	Bamboo poles/ wooden pillars, pre-assembled where possible, Steel only where required with necessary foundation below ground level
2	Wall	Wood-composite panels/ bamboo mat panels/ vertical farming panels
3	Floor	Wood composites
4	Roof : non-green	partly solar PV panel, partly wood-composites or terracotta tiles
5	Roof : green	partly creepers covering the structural framework, partly vertical farming/garden panels



AREA STATEMENT					
Sl.	Site components	Existing area	Proposed area		Existing condition
		Sqm	Sqm	%	Proposed
	Site area-	57444.2	NA		partly cultivated, partly degraded
	Existing water-body	4615	4615		almost dried
	Pathway in the northern flank	-	975	3.5%	Retained & restored
	Boardwalk in southern flank	-		6.5%	porous material (gravel & stone over sand/ fire bricks over sand
	Proposed Additional water-body area	-	6305	11%	Bamboo/ timber
	Covered Bamboo structures for exhibition/ workshop with toilets	-	477.5	0.8%	Peripheral channels
	Bamboo pavilions with toilets	-	477.5	0.8%	Bamboo poles/ timber pillars; Steel only where required with necessary foundation below ground level
	Plantation area including Organized organic farming	-	43000	more than 75%	Native tree & other plant species to support birds, bees & butterflies

AREA STATEMENT (contd..)					
Sl.	Site components	Existing area	Proposed area		Existing condition
		Sqm	Sqm	%	Proposed
	Special 'Green' Features				
1	Vertical garden/farming in display panels and entry gate structure	-	180 + 400	vertical space	NA
2	Solar panel – 4 nos. solar PV arrays @ app/ 3.5 kiloWatt/array = 14 kiloWatt	-	144	0.25%	Both edible & ornamental plants
					Roof-top of structures

General benefits:

•Produce an operational plan that meets the objectives of low environmental impact, education, recreation, local community involvement and livelihood support.

Environmental benefits:**•Direct:**

Enhanced eco-system services like carbon sequestration, cleansing of air by air pollution amelioration, support to bio-diversity, formation of ecological corridor, improved interception & retention of storm water, soil moisture augmentation and many other ecological functions by allowing natural processes to dominate.

•Indirect:

As a Wetland Bio-diversity Awareness Park, it is expected to demonstrate the diversity and importance of EKW highlighting its flora & fauna.

Socio-cultural benefits

•An opportunity for practical education and public awareness - A Biological resources centre for students and research community.

•Nature-based tourism attraction for visitors as eco- tourists who are conscious of the values of wetlands and the need of conservation of these ecosystems.

•Expected to provide a field retreat for nature enthusiasts and naturalists: a real site for conclaves & workshops for people and groups interested in a wide range of wetland-related environmental, scientific, arts and cultural activities.

•Connecting nature with culture: Offer spaces for interactions with nature as well as Bengali folk culture amidst the rich landscape and greeneries.

End of Part-I

PART-II: ANNEXURE

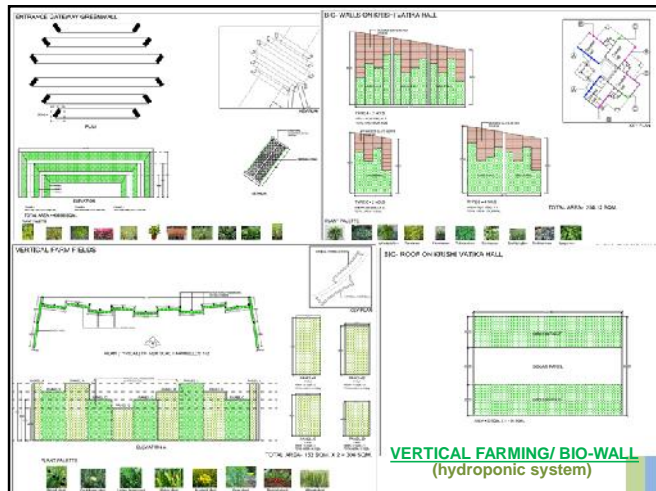
For the purpose of ascertaining a healthy carrying capacity standard :

Reversing the World Health Organisation (WHO) standard which recommends 3-4 hectares per 1000 population: i.e. not more than 1000 people shall be permitted in 4 hectares (=10 acres), it would mean, about 40.5 Sqm/person. However, considering simultaneous home-park use of each house-hold, this would double to 81 Sq m/person.

Again, as per *Architectural Systems Community Planning, US** (Source: Time Savers Standards for Landscape Planning)* in multifamily developments of more than 5000 persons in the neighbourhood, 6.00 acres per 1000 persons for parks and another 6.00 acres per 1000 persons for playground are necessary i.e. 12 acres/1000 persons including both parks and playgrounds, which is 48.6 Sqm /person for healthy and sustainable use of the natural resource, which is higher than the previous value. Again, considering simultaneous home-park use of each house-hold, this would double to 97.2 Sq m/person.

Considering its ecological nature, the Carrying Capacity of project site may be considered as 100 Sq m /person or a maximum of about 600 persons at any given time.

PART III: CALCULATION OF THE INDEX			
INDICATOR	CALCULATION	SOURCE	SCORE
Native Biodiversity in the City			
1	Proportion of natural areas in the city		
2	Connectivity measures or ecological networks to counter fragmentation		
3	Native bio-diversity in built-up areas – (birds)		
4	Change in no. of native species-Vascular plants		
5	Birds		
6	Butterflies		
7	Species 1		
8	Species 2		
9	Proportion of protected natural areas		
10	Proportion of invasive alien species		
Ecosystem Services Provided by Biodiversity in the City			
11	Regulation of quantity of water		
12	Climate regulation and cooling effect of vegetation		
13	Recreational and		
14	educational services		
Governance and Management of Biodiversity in the City			
15	Budget allocated to bio-diversity		
16	No. of bio-diversity projects implemented by the city annually		
17	Rules, regulations & policy – bio-diversity strategy/ action plan		
18	Institutional capacity- no. of bio-diversity related functions		
19	No. of city/local govt. agencies for BD affairs		
20	Participation		
21	Partnership		
22	Education		
23	Awareness		



Aquatic Macrophytes: Halophytes



Alternanthera paronychioides



Alternanthera philoxeroides



Bacopa monnieri



Centella asiatica



Canna indica



Colocasia esculenta



Commelina benghalensis



Commelina diffusa



Commelina suffruticosa



Cyperus rotundus



Dentella repens



Dryopteris

Aquatic Macrophytes: Halophytes



Eclipta prostrata



Enhydra fluctuans



Eragrostis unioides



Grangea maderaspatana



Ipomoea aquatic



Kyllinga brevifolia



Leersia hexandra



Lindernia hyssopoides



Ludwigia adscendens



Ludwigia perennis



Murdannia vaginata



Oplismenus compositus

Aquatic Macrophytes: Halophytes



Persicaria barbata



Persicaria hydropiper



Phyla nodiflora



Rumex dentatus



Saurospora bacciformis



Tonningia axillaris

Aquatic Macrophytes: Hyperhydrites



Aeschynomene aspera



Cyperus alopecuroides



Eleocharis acutangula



Hygrophila difformis



Hygrophila quadrivalvis



Hygrophila schulli



Ipomoea fistulosa



Sagittaria montevidensis



Schoenoplectus maritimus



Typha angustifolia

Bank Flora



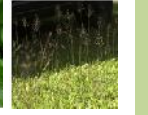
Acalypha indica



Achyranthes aspera



Ageratum conyzoides



Andropogon aciculatus



Anisomeles ovate



Blumea lacera



Boerhavia repens



Breynia vitisidaea



Cardiospermum halicacabum



Cassia sophera



Cassia tora



Cestrum diurnum

Bank Flora



Jatropha gossypifolia



Malachra capitata



Mecardonia procumbens



Mukia scabrella



Peperomia pellucid



Phyllanthus niruri



Pluchea



Portulaca oleracea



Ruellia tuberosa



Scoparia dulcis



Sida rhombifolia



Sida veronicifoli

Major shrubs & trees along the bank



Aegle marmelos



Albizia lebbek



Anona squamosa



Artocarpus heterophyllus



Azadirachta indica



Borassus flabellifer



Butea monosperma



Caesalpinia pulcherrima



Cassia fistula



Casuarina equisetifolia



Clerodendron infortunatum

Major shrubs & trees along the bank



Delonix regia



Ficus bengalensis



Ficus hispida



Ficus religiosa



Flacourtia indica



Lagerstroemia flos-reginae



Mangifera indica



Mimusops elengi



Morinda citrifolia



Peltophorum pterocarpum



Syzygium cumini

The climbers / lianes



Basella rubra



Calamus rotang



Cardiospermum halicacabum



Coccinia cordifolia



Dioscorea bulbifera



Dioscorea pentaphylla



Tinospora cordifolia



Vitis trifolia



Mikania micrantha



Mukia scabrella



Stephania hernandifolia



Tiliacora racemose

Wild Flora

i. Plants Used For Paper-Pulp, Fibre & Thatching Materials



Cyperus rotundus



Phragmites karka



Typha angustifolia

ii. Plants Used For Vegetable Resources



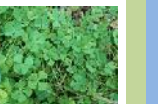
Bacopa monnieri



Enhydra fluctuans



Ipomoea aquatica Forssk



Marsilea minuta

iii. Plants Used As Food For Waterfowl



Cyperus rotundus



Lemna perpusilla



Pistia stratiotes



Spirodela polyrhiza

Wild Flora

iv. Plants As Food For Fish



Ceratophyllum demersum



Hydrilla verticillata



Vallisneria spiralis



Lemna perpusilla



Eichhornia crassipes



Pistia stratiotes

Wild Flora v. Plants As Fodder



Alternanthera
paronychioides



Alternanthera
philoxeroides



Commelina diffusa



Eichhornia crassipes



Eragrostis unioloides



Ipomoea fistulosa



Leersia hexandra



Oplismenus compositus



Phragmites karka



Typha angustifolia



Vallisneria spiralis

Wild Flora

vi. Aquatic Macrophytes Serve As Water-Purifier



Alternanthera
philoxeroides



Ceratophyllum
demersum



Eichhornia crassipes



Hydrilla verticillata



Lemna perpusilla



Phragmites karka



Spirodela polyrhiza



Typha angustifolia



Schoenoplectus maritimus

References

1. Kundu, N., Pal, M. & Saha, S., (2008), 'East Kolkata Wetlands: A Resource Recovery System through Productive Activities', Proceedings of TAAL 2007: The 12th World Lake Conference: 868-881.
2. Ghosh, A.K. (1990) : Biological Resources of Wetlands of East Calcutta, Ind. Jour. Landscape & Ecology Studies, 13 : 10-23
3. Majumder, N.C. 1965. Aquatic and Semi-aquatic Flora of Calcutta and Adjacent Localities. Bull. Bot. Soc. Beng. 19: 10-17.
4. Biswas, K.P. 1927. Flora of the Salt lakes, Calcutta. J. Dept. Of Sc., University Of Calcutta 8: 1-48.
5. http://www.indiawaterportal.org/sites/indiawaterportal.org/files/ecology_3.pdf
6. https://en.wikipedia.org/wiki/East_Kolkata_Wetlands
7. <http://www.geosophia.in/blog/biodiversity-of-east-kolkata-wetland-area/3/>

ROUGH COST ESTIMATE

SL. NO.	PART	DESCRIPTION	AMOUNT (Rs.)
1.	PART-A	COVERED HALL (8 Nos) [with TOILETS]	27,53,143.00
2.	B	EARTHEN SURFACE CHANNEL	8,43,290.00
3.	C	FENCING	9,46,760.00
4.	D	SITE CLEARANCE	47,472.00
5.	E	CAUSE WAY (BUND)	19,40,600.00
6.	F	BOARD WALK	47,04,050.00
7.	G	WOODEN BRIDGE	5,20,920.00
8.	H	BRIDGE	15,99,748.00
9.	J	ENTRANCE GATEWAY	2,32,872.00
10.	K	WOODEN PLATFORM	16,43,200.00
11.	L	ENTRANCE GATE SHELTER/GOOMTY	20,472.00
12.	M	BAMBOO PERGOLA	1,34,912.00
13.	N	VERTICAL FARMING SUPPORTING STRUCTURE	2,55,776.00
		GRAND TOTAL	1,56,43,215.00
	ADD	Contractor's profit and overhead charges @15%	23,46,482.00
			1,79,89,697.00
	ADD	Labour welfare cess 1%	1,79,897.00
			1,81,69,594.00
	ADD	Contingency 3%	5,45,088.00
			1,87,14,682.00

ESTIMATED PRELIMINARY COST

• Landscape civil works	• 2.0 Cr
• Landscape horticultural works	• 1.2 Cr
• Vertical Garden/ Bio-wall (hydroponic system)	• 4.6 Cr
• Solar PV (12kWp)	• 0.5 Cr
• TOTAL	8.3 Cr

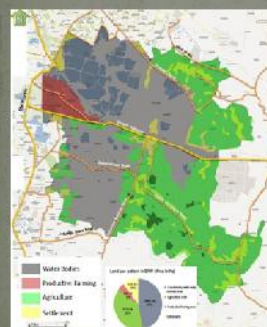


Presentation of Shri Kaushik Bhattacharya, Joint Secretary, Tourism Department, Govt. of West Bengal

Policy Workshop on East Kolkata Wetlands

Promoting sustainable tourism potential

East Kolkata Wetlands: An Overview



EAST KOLKATA WETLANDS	
Area	12,500 Ha
Ramsar List	Since August 2002, it was included in the 'Ramsar List' making it a 'wetland of International Importance'. <small>(The Ramsar Bureau List was established under Article 8 of the Ramsar Convention)</small>
Benefits of EKW	
As "Kidney"	The wetland treats nearly 800 million liters of sewage and wastewater generated by KMC area every day.
Food Basket	8,000 tons* of fish annually 150 tons* of fresh vegetables daily 16,000 tons* of rice annually <small>*approximately</small>
Employment	74% working population drawing sustenance through engagement in fish farming, agriculture and horticulture.
Environment	Maintain the delicate ecological balance in a fragile environment

Sustainable Tourism as Vision

- Sustainable tourism, as adopted by the tourism sector, and "wise use" as the fundamental approach for wetland management and conservation share the common aim of maintaining sustainable ecological processes.
- Many types of tourism take place in and around wetlands. These can include mass tourism, marine and freshwater recreation, adventure and cultural tourism, hiking, and nature-based tourism, including 'ecotourism'.
- West Bengal Tourism Policy 2016 has pledged to take a lead in Sustainable Development by promoting all three aspects of sustainability namely: economic, environmental and social.

- The definition of sustainable tourism adopted by the UNWTO specifically states that sustainable tourism should "make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity." Thus sustainable tourism as defined by UNWTO is indeed consistent with Ramsar's wise use principle.

Sustainable Tourism

- Optimal Resource Use
- Respect the socio-cultural authenticity of host communities
- contributing to poverty alleviation by providing stable and fairly distributed long term income to all stakeholders.

Sustainable Tourism takes full account of its impacts:

Current		Future	
Economic	Social		Cultural

Sustainable Tourism addresses the needs of

Visitors	Industry	Environment	Host Community
----------	----------	-------------	----------------

Twelve Goals: UNWTO

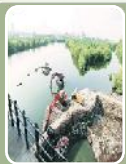
- 1) Economic viability 2) Local prosperity 3) Employment quality 4) Social equity 5) Visitor fulfilment 6) Local control 7) Community well-being 8) Cultural richness 9) Physical integrity 10) Biological diversity 11) Resource efficiency 12) Environmental purity.
- The economic benefits generated by tourism can include gains that accrue regionally from tourist expenditure (for example, on accommodation, food, transport, guides); employment generated both at a wetland site and more generally within local communities; and direct income for protected areas raised, for example, from entrance fees.

Seven Mechanisms to alleviate poverty through tourism (UNWTO)

1. Employment of the poor in tourism enterprises
2. Supply of goods and services to tourism enterprises by the poor or by enterprises
3. Direct sales of goods and services to visitors by the poor (informal economy)
4. Establishment and running of small, micro or community-based tourism enterprises or joint ventures by the poor (formal economy)
5. Redistribution of proceeds from taxes or charges on tourists or tourism enterprises
6. Voluntary giving and support by tourists and tourism enterprises
7. Investment in infrastructure stimulated by tourism also benefitting the poor in the locality, directly or through support to other sectors

- Data shows that the areas which are either provided high levels of ecological protection and /or kept at almost similar levels of natural wetlands are rich in water birds. Development of ecotourism spots on the perimeters of wetland can provide a protective buffer as well as safe refuge for water birds along with promoting awareness and generating revenue.
- It is estimated that EKW provides environmental benefits worth USD 38.54 million per year. Going by standard estimates of 7-10% of the benefits may accrue from recreational activities, sustainable tourism in EKW can generate about Rs. 18-25 crores per year.

Potential Threats of Wetlands Tourism



Use of land and resources for accommodation, tourism facilities and other infrastructure provision, including road networks, airports and seaports

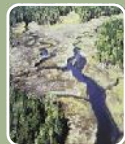
- Extraction and use of building materials (e.g., use of sand from beaches, reef limestone and wood)
- Damage to or destruction of ecosystems and habitats, including deforestation, draining of wetlands, and intensified or unsustainable use of land



Disturbance of wild species, disrupting normal behaviour and potentially affecting mortality and reproductive success

- Unsustainable consumption of flora and fauna by tourists (e.g., picking plants; purchase of souvenirs manufactured from wildlife, in particular such endangered species as corals and turtle shells; unregulated hunting, shooting and fishing)
- Intensive water demand from tourism, extraction of ground-water, deterioration in water quality.

Potential Threats of Wetlands Tourism



Land sewage pollution, Eutrophication of aquatic habitats, Introduction of pathogens, Generation, handling and disposal of sewage and waste-water, Chemical wastes, toxic substances and pollutants, Solid waste (garbage or rubbish), Contamination of land, freshwater and seawater resources, Pollution and production of greenhouse gases, resulting from travel by air, road, rail, or sea, at local, national and global levels.



Socio-economic and cultural impacts related to tourism may include: a) Influx of people and social degradation (e.g., local prostitution, drug abuse, etc.); Impacts on children and youth

- Impacts on indigenous and local communities and cultural values ; Impacts on health and the integrity of local cultural systems , Intergenerational conflicts and changed gender relationships
- Loss of access by indigenous and local communities to their land and resources as well as sacred sites, which are integral to the maintenance of traditional knowledge systems and traditional lifestyles

Awareness Raising Role

- Those managing protected areas have an important role to play in building the awareness of local residents, tourists and tourism businesses of the value of the natural resources on which tourism and the local livelihoods depend. Such awareness-raising is generally an integral part of the tourism offered by guided tours, visitor centres and educational programmes. Tourists generally show a strong desire to understand the places they are visiting. In wetlands this means viewing wildlife and habitats; learning about wetland ecology and conservation as well as experiencing the local culture; or just simply enjoying being within a beautiful natural environment.

Learning from International Case Studies

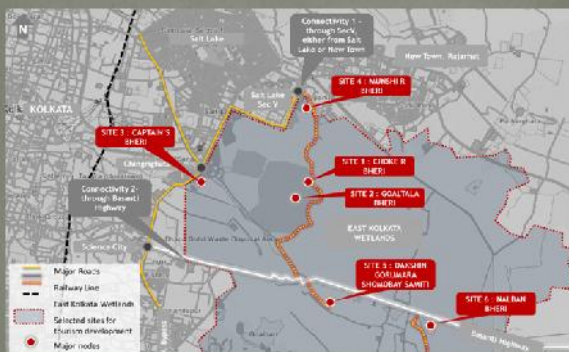
	Argentina: Ibera Marshes	Australia: Kakadu National Park	Colombia: Humadal la Conejera	Vietnam: Ba Be National Park
Tourism Activity	Boating and Kayaking, Hiking and Nature Trails, Horse Riding.	Boating, Indigenous art tours.	Nature Trails	Boating, Bird and Bat watching in caves.
Infrastructure	Resorts, Home-stays, Restaurants.	Small scale infrastructure on land leased from aboriginal groups	Restaurants and cafes in premises of local residents	Home-stay and restaurants.
Promotion	Branding, Tourist guides, Tourism fairs		Educational Centers	
Benefits	Conservation based tourism	Preserving nature as well as local	Protection, restoration and wise use	Experiencing indigenous culture.

Options for Low Intensity Tourism

Tourism Activities	Infrastructure/ Intervention	Pre-requisites
Nature Trail/Bird Watching	Guided Tours to understand local flora and fauna.	Training of local youth as guides and support them to invest in appropriate viewing instrument. Information signage.
Leisure and Activity based tourism	Making tourists part of the sustainable fishing, angling, vegetable orchards management and angling. Educational aspects of the wastewater treatment practices.	Training of local people to accommodate tourists in home stay and their day to day activities in a guided manner.
Boating and Kayaking	Mainly caters to local tourists. Eco park can be built using environmentally sustainable and biodegradable materials.	Only row or paddle boats may be allowed. Thorough training of local people and appropriate regulation of tourism activity is required to prevent pollution and interference with normal fishing activities.

- Apart from the above, structures using biodegradable materials like log huts, mud huts etc can be developed to accommodate strictly regulated theme based restaurants, health spa and banquets.
- Floriculture/ medicinal plant gardens may be developed with the dual purpose of production and guided tours.
- New activities like bog walk will be developed for nature trails in the wetlands.

Some existing fishing farms/bheries with potential for development of low intensity tourism



Common Birds found at EKW



Ruby Throat



Blue Throat



Black Billed Redbeak



Eurasian Wrenbird



Common Kestrel



Eurasian Cuckoo



Grey Backed Stryke



Oriental Skylark

Little Grebe



Thank You

Presentation of Shri Vijay Bharati, Director, Micro, Small & Medium Enterprises and Textiles Department, Govt. of West Bengal

PROSPECT OF MICRO & SMALL SCALE INDUSTRIES EAST KOLKATA WETLAND (EKW)



Director
MSME, WB

Sl	Sector	Sector Leadership Project (SLP)		GROWTH		EMPLOYMENT (in Lakh)	
		State turnover (present) Rs. in Crore	State share in National turnover (present)	Present CAGR	Projected CAGR	Present Employment	Projected Employment (by 2020)
1	Leather	22572	29.00%	35%	24%	7.13	26.00
2	Foundry	3000	5.00%	15%	10%	0.45	2.00
3	Gems & Jewellery	35433	11.00%	20%	16%	0.45	1.00
4	Textiles	22208	10.00%	25%	17%	2	9.00
5	Chemical	17952	6.55%	15%	8%	0.4	1.60
6	Plastic	10650	8%	18%	8%	4.6	8.00

MAJOUR CLUSTER ARROUND EKW

- LEATHER CLUSTER AT BHANGAR
- ZARI EMBROIDERY AT BUDGE BUDGE
- SILVER FILIGREE AT MAGRAHAT
- AGARBATI CLUSTER AT BARUIPUR & CANNING
- FIRE WORKS AT BARUIPUR AND MAHESHTALA
- SURGICAL INSTRUMENT AT BARUIPUR

NEW INITIATIVE BY MSME&T DEPTT.

1. TEXTILE PARK UNDER TEXPRO
 - A) GARMENT & DENIM PROCESSING PARK AT MAHESHTALA – 10 ACRE
 - B) GARMENT & APPAREL PARK AT BUDGE BUDGE – 10 ACRE
2. MSME PARK UNDER SAIP (SCHEME OF APPROVED INDUSTRIAL PARK)
 - A) MSME PARK AT BUDGE BUDGE – 80 ACRE
 - B) MSME PARK AT AMTALA – 50 ACRE

POTENTIAL FOR NEW MSMEs UNITS

- PLASTIC AND MOULDED PRODUCTS INCLUDING PLASTIC GRANULES
- READYMADE GARMENTS
- CHEMICAL EQUIPMENT AND SYSTEM
- INDUSTRIAL GASES
- GLASS PRODUCT
- CERAMIC TILES
- MUSTARDED OIL UNITS & WHEAT GRINDING UNITS

MAJOR INDUSTRIAL ESTATES

1. BARUIPUR INDUSTRIAL ESTATE (PHASE-I) AREA 2.87 ACRES

NO. OF PLOTS / SHEDS – 27, ALL ALLOTTED
MAJOR INDUSTRIES : ENGINEERING FABRICATION, PRINTING, SYNTHETIC FISHING NET ETC.

2. BARUIPUR INDUSTRIAL ESTATE (PHASE-II) AREA 1.90 ACRES

NO. OF PLOTS / SHEDS – 15, ALL ALLOTTED
MAJOR INDUSTRIES : MACHINING & FABRICATION
UNITS ETC.

3. SANTOSH PUR INDUSTRIAL ESTATE (MODERN INTEGRATED READYMADE GARMENT COMPLEX, MAHESHTALA MUNICIPALITY)

AREA 16.89 ACRES

NO. OF PLOTS / SHEDS – 113, ALL ALLOTTED TO 48
UNITS, 11 UNITS NON FUNCTIONING

MAJOR INDUSTRIES : GARMENTS, APPRELE TRAINING
CENTRE ETC.



FLOW CHART OF WASTE PRODUCT PRODUCED AT TANNERIES

- Primary Raw Leather
- Extraction of Fleshing Manual Process
- (Wet waste)
- Use as Fish feed
- Dressed Raw Leather
- Salting
- Drumming with Blue Chromium
- Blue Leather Scrap by way of
- shaving
- Blue Leather
- Sheet
- Cut Piece of chromed Leather
- Raw-material of Bhushi Burner Units
- Fuel for Bhattis
- Finished products from Bhushi Burner Unit go to Agricultural land like Tea Garden, Soya Plantation etc. as fertilizer.

PROJECTS FOR THE COMPOSITE DEVELOPMENT OF CALCUTTA LEATHER COMPLEX AT BANTALA, KOLKATA

- | | |
|----------------|---|
| Project –1 (A) | : Rehabilitation of 144 members of Co-operative |
| Project-1 (B) | : Economic Rehabilitation of Project Affected Persons (PAP) and hawkers |
| Project 2 (A) | : Rehabilitation of shaving scrap Burning Units |
| Project 2 (B) | : Secured Land filled site Development at Andulguri Mouza adjacent to southern boundary of CLC, Bantala |
| Project (3) | : Making proposed Tanning Training and Service Centre (TT & SC) Operational |

SHAVING SCRAP STACKYARD



SHAVING SCRAP UNIT



SHAVING SCRAP FURNACE



SHAVING SCRAP FURNACE

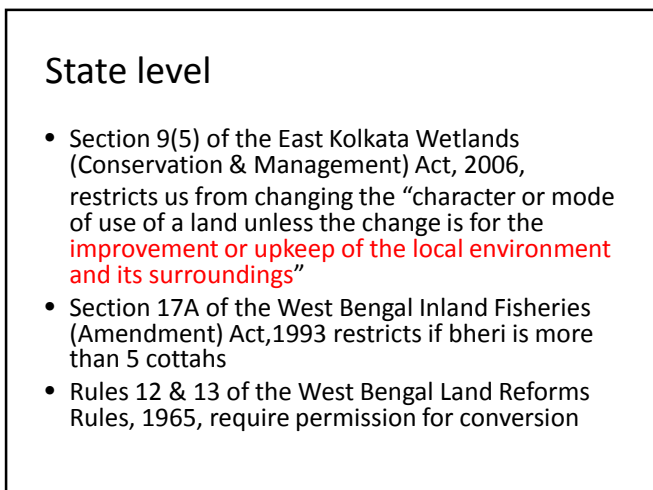
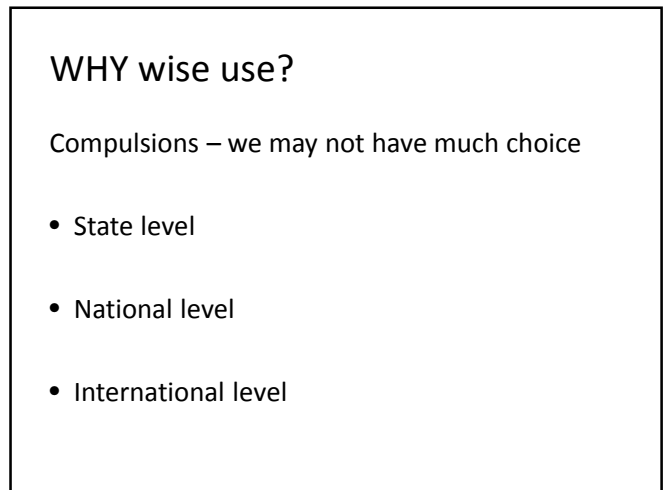
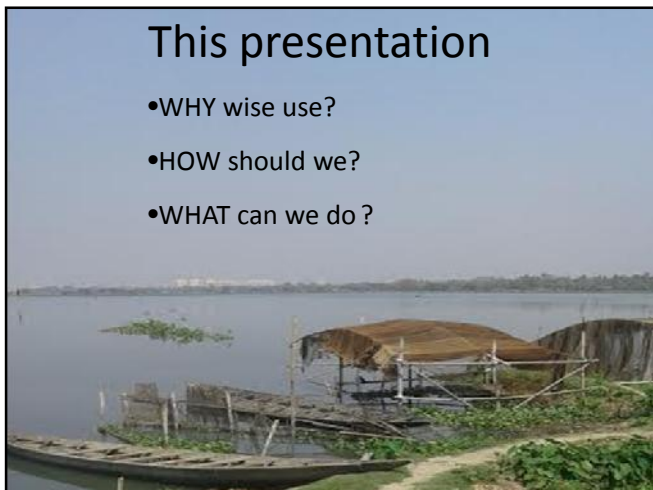
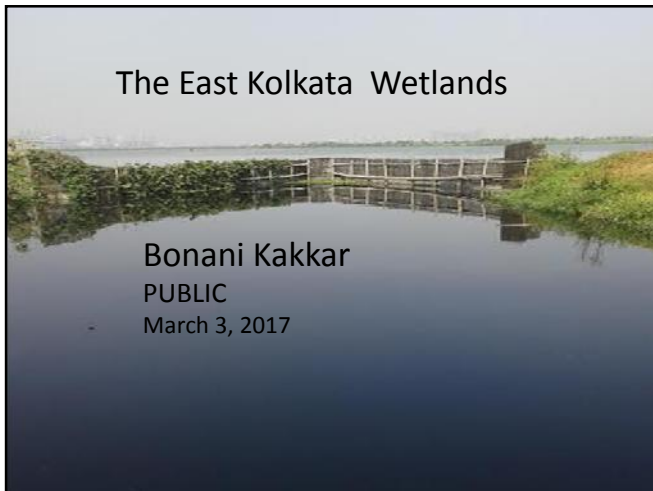


SHAVING SCRAP SITE



THANKS

Presentation of Smt. Bonani Kakkar, President, People United for Better Living in Calcutta (PUBLIC)



National level – Supreme Court

- The Supreme Court of India , on February 8, 2017, directed that
 - The **Central Wetlands Rules** should be notified by June 30, 2017
 - The Union of India should obtain from the states information about **what specific use** has been made of **central assistance for Ramsar sites**
 - The Union of India should inform all states that they are bound by **Rule 4** with respect to **all wetlands larger than 2.25 hectares**

International level - Ramsar

- The Ramsar Convention’s mission, stated in its Strategic Plan 2009-2015, is “the **conservation and wise use of all wetlands through local and national actions** and international cooperation, as a contribution towards achieving sustainable development throughout the world”.
- Ramsar’s Communication, Education, Participation and Awareness (CEPA) Programme promotes the conservation and wise use of wetlands.

International - WISA

- July 15, 2008, 7th meeting of the EKWMA, Dr CL Trisal, Director, Wetland International South Asia, identified a major gap as “**application of engineering measures without considering ecological aspects**” and “emphasis on short term solutions” rather than long term sustainability

Wise use – how?

- Demarcate the area – this is overdue
- Protect the area – threats /encroachments
 - Environment Dept under-resourced
 - Tie up with Forest Department to monitor and protect
- Engage the local community – self-interest





Wise use – what?

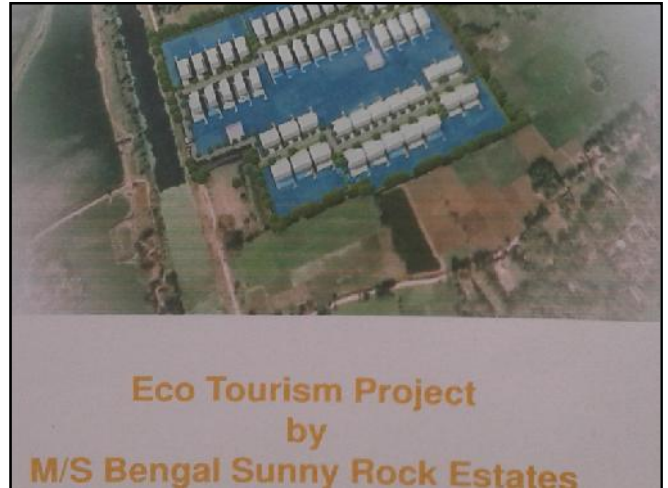
Strengthen

- Water management – hydrological connectivity within the direct basin through rejuvenation of derelict water courses
- Biodiversity conservation – habitat restoration, enhancing fish biodiversity
- Sustainable fisheries development – hatcheries, rainwater harvesting

Wise use – what?

Ecotourism

- What it is not – it is not tourism to wild places!



Ecotourism

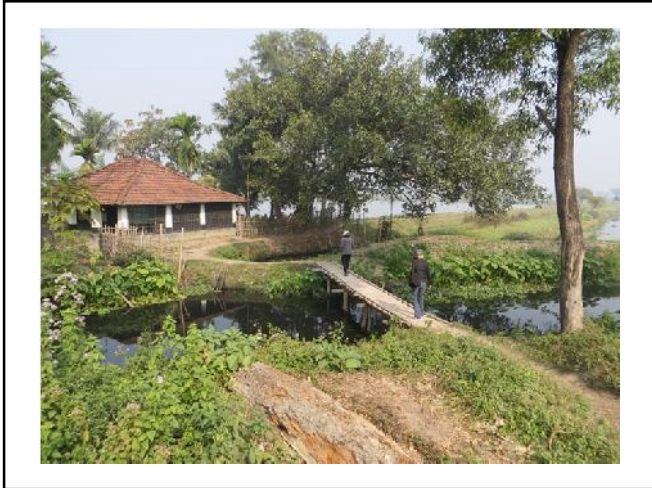
- What it is not

- What it is

*"Travel to **fragile**, pristine and usually protected areas that strives to be **low impact** and (usually) small scale. It helps **educate** the traveller, provides funds for **conservation**, directly benefits the economic development and political empowerment of **local communities**..."* former head of International Ecotourism Society







Wise use – what?

- Ecotourism development – boardwalks, nature trails, bird watching hides, low impact shelters
- Education – interpretation centre for school-going and adults



Wise use – what?

- Ecotourism development – boardwalks, nature trails, bird watching hides, low impact shelters
- Education – interpretation centre for school-going and adults
- Sustainable agriculture development – floriculture, medicinal plants (some environmental risks)

Floriculture & Medicinal plants

- Huge potential, domestic and international
- Agencies such as WHO, IUCN and WWF have, in the past, recommended medicinal plants be brought into cultivation
- But both may lead to environmental degradation (pesticides and fertilizers), loss of genetic diversity and loss of incentives to conserve wild populations

Wise use – what?

- Ecotourism development – boardwalks, nature trails, bird watching hides, low impact shelters
- Education – interpretation centre for school-going and adults
- Sustainable agriculture development – floriculture, medicinal plants (some environmental risks)
- Research – field stations for zoology, botany, biology, climate science

To conclude

- Wise use virtually a compulsion
- Need to demarcate, protect and strengthen
- Opportunities in ecotourism, recreation, education, agriculture and research

Thank you for your attention



Presentation of Shri Dipankar Chakrabarti from Confederation of Indian Industry (CII) on Wise use plan in EKW.

Shri Chakraborty began his speech by introducing himself as a consultant from PWC. He said that wise use of wetlands is the basic paradigm for the Ramsar Convention and it is for any wetland. He highlighted the basic problem of EKW as land encroachment and illegal construction and from industry perspective, he found three major issues relating to EKW such as

1. Very less awareness amongst people.
2. Benchmarking. All the data available from multiple government agencies about EKW is dated and the latest being of 2011.
3. To create a proper management plan which is currently not there. There is no inclusive approach on the wetland development.

In his speech he further stated that as the whole nature of the waste and sewerage are changing slowly, it is required to change processing of that. The nature of sewerage is now getting contaminated with heavy metals. He informed that in West Bengal there is only one place for processing electronic wastes. Those are giving a huge amount of heavy metals in the whole system.

A bit earlier much more Vetki fries rather than Basa fries were noticed. He expressed his concern about EKW, its habitats, fishermen, rag pickers, some fishes such as Kajari which will not be available to our next generation. Without “Rag pickers” the whole system of segregation of solid waste is in jeopardy. To have a real wise use, he suggested that instead of such sectoral, blind-folded, segregated look into the system, it has to be a complete integrated sectoral plan with a proper resilient project having defined cares including the industries who are either there or who survive upon that and should also have common people.

He concluded his speech with a suggestion to look into the conservation and management of EKW in a more holistic manner.

Group Discussion and Recommendations

The Group Discussion and Recommendations session aimed at eliciting views of the stakeholders on three major issues concerning the EKW, namely

1. Review of East Kolkata Wetland-Acts, Rules & Conservation Efforts
2. Needs for changes in the statutes and practices
3. Evolving wise use plan & programme

The groups were formed by obtaining options from each participant indicating their choice of subject for deliberations. The group coordinator for each group is given below followed by their recommendations.

Group I: Group Coordinator: Smt. BonaniKakkar, President, PUBLIC

Group II: Group Coordinator: Dr.Subrat Mukherjee, MS, WBPCB

Group III: Group Coordinator: Dr.Ashis Kumar Ghosh, President, ENDEV

Group I: Review of East Kolkata Wetland-Acts, Rules & Conservation Efforts

The Group recommended the following:

1. Demarcation – Physical sign boards are necessary both in English and in Bengali. Erection or exhibition of hoardings/signage/billboards is required on major roads (E.M. Bypass and Basanti Road) and on other important arterial roads within EKW. Billboards should have a helpline number so that anyone may contact the EKWMA in case of any need.
2. Protection –
 - (a) Formation of Local Level Wetland Protection Committee where Women representation is must. Committee can stop illegal activities within the EKW.
 - (b) Identify priority mouzas with perceptible threat of conversion for close monitoring. (deputation of Forest Guards for monitoring was suggested)
 - (c) For extensive awareness programme, posters, books, leaflets etc. should be distributed in local level in Bengali.
3. Desiltation – Canals and bheris have to be desilted. However, during desiltation of bheries, depth should be controlled, else productivity will drop.
4. Bioremediation – In certain places such as entry points of sewage there is quite a bit of heavy metals in water. Water hyacinth (kachuripana), hogla, some species mangrove plants are very good for bioremediation of heavy metals. So besides water hyacinth, they may be planted to trap heavy metals.
5. Plantation – There are some wetlands which are totally denuded any tree. So plantation is required. However, careful selection of species to be planted.

Group II: 2. Needs for changes in the statutes and practices

The Group recommended the following:

1. Wetlands (Conservation and Management) Rules, 2010 promulgated by MoEF categorically prohibits discharge of untreated sewerage water from cities and towns. This clause is in contradiction to the very principle based on which the EKW was accorded Ramsar status. This clause is to be amended so as to allow flow of sewage into the EKW.
2. Both Central and State Acts & Rules made thereunder should also include sustainable Pisciculture, agriculture & horticulture by the local communities.
3. As local communities & villages are part of EKW and their livelihood is mostly based on EKW – so the Acts of both State & Central should provide basic community needs such as communication, education, livelihood & health infrastructure for the communities.
4. Tourism infrastructure which are ecologically, economically & socio culturally viable should be promoted & provisions are to be made in Acts & Rules.
5. As entire area cannot be brought under uniform management prescriptions because of land & its land use status. So zonation is proposed by omission of rural / urban settled land from the schedule I & II in the EKW(C&M) Act 2006.
6. This is with the objective of sustainable development of area along with the communities.

Group III: 3. Evolving wise use plan & programme

The Group recommended the following:

1. Sewage contain heavy silt load naturally through canals and it is being deposited into the fishponds of the EKW. Irrigation & Waterways Department should prevent silt load by canal dredging and the fishery pond owners should periodically desilt their waterbodies in order to maintain their depth.
2. The amount of sewage water is reducing as a result it is difficult to maintain sewage fed pisciculture. Lack of sewage water prevents optimum production. It is required to make more sewage water available to the ponds. Irrigation & Waterways Department should make some arrangement for lifting water so as to increase the volume of sewage water. There should be a provision for bheri owners to use pump for lifting sewage water.
3. The solid waste landfill site of KMC has been existing historically at this site and when the EKW was declared as Ramsar site this Dhapa landfill site was also included. As KMC has no other landfill site there is an urgent need for demarcating 150 ha of dry land for future MSW disposal in view of landfill hub.
4. The fish ponds act as solar reactor and play a significant role in treating the sewage to hygienic point. It treats city sewerage in an inexpensive method. Though ADB report is suggested for STP, it is not needed.
5. Creation of Buffer Zone in EKW and formation of a development plan based on zonation. The Ramsar Convention defines wise use as maintenance of their ecological character achieved through the implementation of ecosystem approaches, within the context of sustainable development. Wise use is something which can be expanded, but without creating any ecological crisis.
6. Set up of Wetland Interpretation Centre (WIC) for generation of mass awareness. The WIC should be very low lying and a small one.

WAY FORWARD

- There is a need to take a holistic approach to managing the site with participation of all relevant stakeholders to develop a wise use plan for the site, identifying activities to be taken up at different locations of the wetland depending upon the land character.
- For developing any implementable conservation oriented management strategy for the East Kolkata Wetlands, it is essential to prepare baseline data, both of the present day scenario and that which existed at the time of its inception
- A review of the map of the site when it was designated in 2002 to estimate the actual area of wetlands at that time and to estimate the land use changes and exploring possibility of redefining the boundary
- Documenting the list of threats and challenges with suggestions for remedial actions
- Demarcating the boundary of the East Kolkata Wetlands
- Review of existing Acts and Rules to accommodate provisions of programmes based on wise use concept
- As the entire area cannot be brought under uniform management prescription because of the land character and land use pattern, concept of dividing the area into core, buffer and fringe zones need to be considered to ensure sustainable development of the area along with communities
- Management of sewage supply to ensure optimum productivity, and desiltation etc needs to be incorporated in the management plan.
- Awareness generation with sign boards and creation of local level wetland protection committee

Field Visit on 2nd March, 2017

Programme Schedule

Place of visit	Purpose
Dhapa Lock Pumping Station	Operation and function of the pumping station
Jhagrasisha Bheri	Wise use sewage fed pisciculture and its importance
Goltala Bheri	Cultivation of indigenous fish species through sewage water and its future prospects
Bantala Lock Gate	Distribution of sewerage water to the waterbodies in EKW
Dhapa Dumping site	Present situation, composting procedure and fertilizer production unit

Dr. Lew Young, Senior Advisor for Asia-Oceania, Ramsar Secretariat, Shri Arnab Roy, Principal Secretary, Environment Department, Shri Sandipan Mukherjee, Chief Technical Officer, EKWMA, Shri Kalyan Kumar Dey, Executive Engineer, Calcutta Drainage Outfall Division, I&W Directorate, Shri Partha Pratim Nath, Superintendent Engineer, Metropolitan Drainage Circle, I&W Directorate, Shri Sandip Das, Dy.CE (E), S&D, KMC, Shri Dilip Kumar Mandal, Executive Engineer (M), DLDPS, KMC, Shri Subhasish Chattopadhyay, DG(SWM),KMC, Shri Soumajit Das, MD, SFDC, Shri Subrata Mukherjee, Director of Fisheries, Smt. A.S Alvi, Dy. Director of Fisheries, Shri Soumyajit Das, MD, SFDC, other government officers, Smt. Bonani Kakkar, PUBLIC, Shri Asesh Sengupta, CIRA, Shri Sasidulal Ghosh, Secretary, Fish Producers' Association and other invitees participated in the field visit in EKW. Few photographs of the field visit are given below:



Photograph: A



Photograph: B



Photograph: C



Photograph: D



Photograph: E



Photograph: F



Photograph: G

Photograph: H



Photograph: I



Photograph: J



Photograph: K



- Photographs No. A to C: Dhapa Lock Pumping Station: Officials from Kolkata Municipal Corporation (KMC) demonstrated and described the operations and functions of the pumping station
- Photographs No. D & E: Jhagrasisha Bheri: Backdrop of EKW, sewage-fed pisciculture and its importance, single pond system were described.
- Photographs No. F & G: Goltala Bheri: Officials from the Department of Fisheries showed their efforts to cultivate local indigenous fishes by using sewage water and elaborated its future prospect
- Photographs No. H & I: Bantala Lock Gate: Officials from Irrigation & Waterways Department showed the distribution of sewerage water to the waterbodies in EKW
- Photographs No. J & K: Dhapa dumping site: Representatives for KMC showed Dhapa dump site and its present situation, composting procedure and fertilizer production.



East Kolkata Wetlands Management Authority

Department of Environment, Government of West Bengal

Writers' Buildings, Kolkata – 700 001

Shri Arijit Banerjee, IFS

Chief Technical Officer, EKWMA

No.CTO/EN/2131 (186)/11

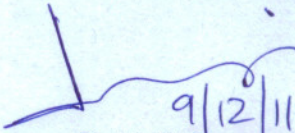
Date: 09/12/2011

ORDER

In the 17th meeting of the East Kolkata Wetlands Management Authority (EKWMA) held on 28th September, 2011, it has been resolved that:

- 1) No new No Objection Certificate (NOC) for conversion of land shall be granted by the Authority.
- 2) All NOCs granted so far shall be revoked.

In pursuance of this resolution it is hereby ordered that all NOCs issued by this Authority from 31/12/2010 onwards stand cancelled. Construction work if already started based on a granted NOC should be stopped immediately and if no work has progressed then it should not commence until further orders are passed by the Authority. Moreover no new NOC shall be issued and moreover applications for NOC shall not be entertained. Violation of this order may lead to prosecution under the East Kolkata Wetlands (Conservation and Management) Act, 2006.


9/12/11
Shri Arijit Banerjee
CTO, EKWMA

No.CTO/EN/2131 (186)/11

Date: 09/12/2011

Copy forwarded for information and necessary action:

- 1) The P.S. to Chief Secretary (Chairman, EKWMA), Govt. of West Bengal.
- 2) The P.S. to Principal Secretary (Member Secretary, EKWMA), Environment Department.
- 3) The P.S. to Principal Secretary, Urban Development Department.
- 4) The P.S. to Principal Secretary, Land & Land Reforms Department.
- 5) The P.S. to Principal Secretary, Panchayat and Rural Development Department.
- 6) The P.S. to Principal Secretary, Forest Department.
- 7) The P.S. to Principal Secretary, Municipal Affairs Department.
- 8) The P.S. to Secretary, Fisheries Department.
- 9) The P.S. to Secretary, Irrigation and Waterways Department.
- 10) The Commissioner, Kolkata Police.
- 11) The Chief Executive Officer, Kolkata Metropolitan Development Authority.
- 12) The Commissioner, Kolkata Municipal Corporation.
- 13) The Chairman, West Bengal Pollution Control Board.
- 14) The Member Secretary, West Bengal Pollution Control Board.
- 15) The District Magistrate, 24- Parganas (N).
- 16) The District Magistrate, 24- Parganas (S).

- 17) The Superintendent of Police, 24- Parganas (N).
- 18) The Superintendent of Police, 24- Parganas (S).
- 19) The District Land & Land Reforms Officer, 24- Parganas (N).
- 20) The District Land & Land Reforms Officer, 24- Parganas (S).
- 21) Ms. Bonani Kakkar, President, PUBLIC.
- 22) Mr. Tushar Ghosh, Secretary, Jalabhumti Bachao Committee.
- 23) Mr. Sasi Dulal Ghosh, Secretary, Fish Producers Association.
- 24) Mina Das, Vill + P.O.-Ucchepota, P.S. Sonarpur, Kol-150
- 25) Prosanta Das and Anirban Das, 31, Purbayan, Chingrighata, Kol-75
- 26) Samir Das, Nirmala Apartment, 24A, Avenue East, Modern Park, Kol-75
- 27) Ramapati Ray, 15A, Peary Mohan Sur Lane, P.S.-Goabagan, Burtolla, Kol-06
- 28) Bhaskar Mukherjee, 9/1 N. C. Chowdhury Road, P.S.-Kasba, Kol-42
- 29) Dola Chakraborty, Arati Bhawan, 79 P.K. Guha Lane, Modern Park, Dumdum, Kol-28
- 30) Pradip Mondal, M-16, Prantika, Garia, Kol-84
- 31) Sanjoy Sikder, Atghara (Opp. to Radha Housing), P.O: Dhalua, P.S: Sonarpur, 24 Pgs (S), Pin-700052
- 32) Sachindra Chandra Kar, A-16, ED Block, Sourav Abasan, Sector-II, Salt Lake City, Kol-91
- 33) Md. Moquim Khan, 40B, Ismail Street, Kol-14
- 34) Rajasree Ghosh Bagchi, 4/14, MIG 2B, Calcutta Green Housing Project, Survey Park, Kol-75
- 35) Sandhya Roy, 46/1, Babu Bagan Lane, Dhakuria, Kol-31
- 36) Radha Sanyal, 13/1-D, Prince Rahimuddin Lane, Tollygunge, Kol-33
- 37) Deba Prosad Mukherjee, Mineral House, Geoscientists' Co-Housing Society, Thakur Vill, Kandivli (East), Mumbai-400101
- 38) Pradip Kumar Dutta, 84 NK Ghosal Road, Kasba, Kol-42
- 39) Probir Dey, 54 CR Das Road, P.O.-Haltu, Kasba, Kol-78
- 40) Biswajit Mondal, Harapur, P.O.-Pratapnagar, P.S.-Sonarpur, 24 Pgs (S), Pin-74330
- 41) Barun Das, West Jagatipota (Kishan Market), P.O.-Dhalua, P.S.-Sonarpur, Kol-99
- 42) Lakshmi Biswas and Bikash Chandra Mondal, P.O.North Pratapnagar, Champahati, 24 Pgs (S), Pin-743330
- 43) Reena Ghosh, 188/41B, Prince Anwar Shah Road, Flat-2B, 2nd Floor, P.O-Lake Gardens, Kol-45
- 44) Rekha Saha, Flat-42/5, Block-EE, Sector-II, Salt Lake, Kol-91
- 45) Krishna Mukherjee, J-152, RBI Staff Quarters, LB Block, Sector-III, Salt Lake, Kol-98
- 46) Sourav Seal and Shila Seal, P-16 Provat Monmatha Sarani, P.O.-Haltu, P.S.-Purba Jadavpur, Kol-78
- 47) Swapan Kr Das, Qtr. No: C-2/2, Howrah 220 KV Sub Stn., P.O-Danesh Sekh Lane, Howrah-711109
- 48) Sattik Makal, P.O.-Kheadaha, P.S.-Sonarpur, Dist: 24 Pgs(S)
- 49) Dhananjay Patra, P.O-Hatgachha, P.S-Kol Leather Complex, Dist-24 Pgs(S), Kol-59
- 50) Kadan Ghughu, Chingrighata(Parghata) Canal South Road, Kol-105
- 51) Timir Baran Banerjee, 5H Baishnab Ghata Road, P.O-Naktala, Kol-47
- 52) Sudas Danrhi, P.O: Hatgachha, P.S-K.L.C, Via Deshbandhu Nagar, Kol-59.
- 53) Sanjib Kumar Dhali, North Bamanghata (Dhalipara), P.S.-KLC, P.O.-Hadia, 24 Pgs(S), Kol-150
- 54) Durga Ray Bhattacharjee, Flat-12, Block III, Mahamaya Park Apartment, Mahamayatala, Garia, Kol-84
- 55) Samar Mandal, Bamanghata (Dhalipara), P.O.-Hadia, P.S.-K.L.C., 24 Pgs(S), Kol-150
- 56) Chinmoy Dhali, Bamanghata (Dhalipara), P.O-Hadia , P.S.-KLC, 24 Pgs(S), Kol-150
- 57) Simla Saikai, 237 Jessore Road, Dum Dum, Kol-28
- 58) Kammu Singh, 237 Jessore Road, Dum Dum, Kol-28
- 59) Mantu De, 21/2 Lake East, 3rd Road, Flat-5, Santoshpur, Kol-75
- 60) Basanta Kumar Tiwari, 43/F, Mahim Halder Street, Kol-26
- 61) Satya Tiwari, 43/F, Mahim Halder Street, Kol-26
- 62) Subodh Chandra Mondal, Vill. Harapur Doltala, P.O.-Pratapnagar, P.S.-Sonarpur, 24 Pgs(S), Pin-743330
- 63) Ajoy Kumar Sinha, Vill. Saintala, P.O.-Hadia, P.S.-Sonarpur, Dist: 24 Pgs(S), Pin-700150
- 64) Rahul Tribedi, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 65) Lalit Kr. Joshi & Biyasben Joshi, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 66) Tapan Kumar Mitra, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 67) Taposi Agarwal, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 68) Sajal Kumar Mitra, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 69) Karabi Roy, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 70) Mousumi Ghosh, B-3 & B-4, 12/3/4 Jamir Lane, Kol-19
- 71) Sandhya Patra, Vill & P.O.-Hatgachha, P.S.-K.L.C., 24 Pgs(S), Kol-59

- 72) Bhupal Naskar, Vill-Bamanghata (Dhalipara), P.O. Hadia, P.S.-K.L.C., 24 Pgs(S), Kol-150
- 73) Sudish Kr. Mahato, Sanjay Kr. Mahato & Vijay Kr. Mahato, 64, Garcha Rd, P.O. Ballygunge, Kol-19
- 74) Shyamal Karmakar, Daspara, Mukundapur, Kol-99
- 75) Jhantu Mondal, Vill. Chak Kolar Khal, P.O. Chowbaga, P.S. Sonarpur, 24 Pgs (S), Kol-105
- 76) Kalyan Kumar Chaudhuri, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 77) Shanti Debi, 3/5, Gobra Gorsthan Road, Kol-46
- 78) Dipankar Patra, P.O.-Hatgachha, P.S.- Kol Leather Complex, 24 Pgs (S), Kol-59
- 79) Ashok Kumar. Bhattacharjee & Dipali Bhattacharjee, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 80) Bimal Kumar Mitra, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 81) Dipa Ghosh, 36, Bidhanpally, Jadavpur, Kol-32
- 82) Abhijit Sapui, 94, Chowbaga School Road, P.O. Chowbaga, P.S. Tiljola, Kol-105
- 83) Sangita Ghosh, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 84) Rajendra Kumar Mohata, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 85) Prabir Paul, 16, Prince Rahimuddin Lane, Tollygunge, Kol-33
- 86) Sabita Saha, EE/97/4, Sector-II, Salt Lake, Kol-91
- 87) Syamal Chandra Baral, EE-21, Flat No-6, Sector-II, Salt Lake, Kol-91
- 88) Paritosh Kumar Mondal, EE-165/3, Sector-II, Salt Lake, Kol-91
- 89) Samsunnahar Mir, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 90) Ashish Kumar Paul Choudhury, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 91) Tamal Kanti De, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 92) Joydeb Biswas, P.O. Patharghata, P.S. Rajarhat-New Town, 24 Pgs(N), Kol-135
- 93) Dilip Das, 346 Nowbhanga, Salt Lake, Sector-IV, Kol-105
- 94) Ratan Kumar Chaudhury, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 95) Dilip Das, Vill-Ranabhutia, P.O.-Panchpota, P.S.-Sonarpur, 24 Pgs(S), Pin-700152
- 96) Sulekha Saha, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 97) Satyajit Das, 8B, Sardar Sankar Road, Tollygunj, Kol-26
- 98) Tapas Basu, 6, Belgachia Road, Liluah, Howrah-711204
- 99) Pawan Kr. Sharma, 271, Salt Lake City, Sector-II, Block-CK, Bidhan Nagar(East), 24 Pgs (N), Kol- 91
- 100) Ashis Kumar Saha, EB-23, Deshbandhu Nagar, Baguihati, Kol-59
- 101) Chetan Sharma, 67/68, Bangur Avenue, Block A, Kol-55
- 102) Prabir Das, Swamiji Pally, 9, Rajarhat, 24 Pgs(North), Pin-700059
- 103) Samir Das, Duillya, Sankrail Sadar, Howrah-711302
- 104) Swarup Pramanik, Paschim Mallikpur, Uttar Dhanurhat, Mandirbazar, 24 Pgs(S) Pin-743394
- 105) Pulak Modak, Paschim Mallikpur, Uttar Mallikpur, Mandirbazar, 24 Pgs(S) Pin-743395
- 106) Sunil Sharma, Hillkart Road, George Bazar, NC Goenka Road, Darjeeling Sadar, Darjeeling-734101
- 107) Riddhi Raman Si, Osmanpur, Dakshin Bachri, Shyampur, Howrah-711326
- 108) Jagat Narain Sharma, 2A, Deb Lane, CIT Road, Kol-14
- 109) Niharendu Bera, 128/1A, Picnic Garden Road, Kol-39
- 110) Vijay Laxmi Sharma, 17/18, Rameshwar Malia 1st Bye Lane, Howrah-711101
- 111) Jayanta Kumar Mandal, P.O.-Tardaha, P.S.-KLC, 24 Pgs(S), Pin-743330
- 112) Puspa Devi Sharma, 17/18, Rameshwar Malia 1st Bye Lane, Howrah-711101
- 113) Ramsnehi Sharma, 2A, Deb Lane, CIT Road, Kol-14
- 114) Sanjib Kr. Sharma, CK-271, Salt Lake City, Sector-II, Bidhan Nagar(East), 24 Pgs(N), Pin-91
- 115) Rajib Sharma, C/2, Ideal Association, VIP Road, Kol-54
- 116) Kamal Prasad Sharma, CK-271, Salt Lake City, Sector-II, Bidhan Nagar(East), 24 Pgs(N), Kol-91
- 117) Sandeep Sharma, Block-C, Flat-2, Ideal Association, V.I.P. Road, Kol-54
- 118) Jyoti Sharma, 17/18, Rameshwar Malia 1st Bye Lane, Howrah-711101
- 119) Ankit Mishra, AG-79, Salt Lake City, Sector-II, P.O.-Bidhan Nagar, Kol-91
- 120) Deepika Sharma, 161/C, Block-G, New Alipore, Kol-53
- 121) Amit Sharma, 6, Narasingha Basu Lane, 30 Shibpur, Howrah-711102
- 122) Sarla Sharma, 2A, Deb Lane, CIT Road, Kol-14
- 123) Manish Kumar Sharma, 6, Narkeldanga North Road, Narkeldanga, Kol-11
- 124) Avishek Kumar Sharma, E7, Ideal Association, VIP Road, Kol-54
- 125) Kishan Gopal Saboo, 3/A/2/C Goshala Road, 22 Bally, Howrah-711203
- 126) Abhishek Kr. Saha, AS-363, Mondalpara, Chandberia, P.O.-Krishnapur, Baguiati, 24 Pgs(N), Kol-102

- 127) Anand Sharma G5, Ideal Association, VIP Road, Kol-54
- 128) Anurag Kumar Sharma, E7, Ideal Association, VIP Road, Kol-54
- 129) Prakash Chandra Behera, 13H/11, Panditiya Road, Ward No. 85, Kol-29
- 130) Koushik Pachhal, Jagannathpur Pakhira Para, Sirajbati, Amta, Howrah-711401
- 131) Mahasweta Das, Duillya-35, Duillya Sankrail Sadar, Howrah-711302
- 132) Brijlal Sharma, 6, Narkeldanga North Road, Narkeldanga, Kol-11
- 133) Rachana Sharma, Ward No-14, Darjeeling, West Bengal
- 134) Amit Sharma, E7, Ideal Association, VIP Road, Kol-54
- 135) Kanta Devi Sharma, 6, Narkeldanga North Road, Narkeldanga, Kol-11
- 136) Chandana Paul Chaudhuri, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 137) Narayan Chandra Nandy, Rajdanga Main Road, Ramkrishna Pally, P.O.-Haltu, P.S.-Kasba, Kol-78
- 138) Ruhidas Mandal, Vill-Madhya Hatgachha, P.O.-Hatgachha, P.S.-KLC, 24 Pgs(S), Pin-59
- 139) Krishna Singh and Suman Devi, Baishnabghata Patuli, T/Quarter, PCL-A Type-II/5/15, Kol-84
- 140) Manju Bagaria, 112, Bangur Avenue, Block-D, 1st Floor, Kol-55
- 141) Sanjib Mukherjee & Chiranjib Mukherjee, Vill- Khardanga, P.O.-Hadia, P.S.-Sonarpur, 24 Pgs(S), Kol-150
- 142) Bharati Acharya, Vill. No.-1, Government Colony, P.O.-Hadia, P.S.-KLC, Kol-150
- 143) Bhaskar Bhattacharya, 1/2A, Bansori Housing Society, P.O.-Mukundapur, Kol-99
- 144) Saraswati Shaw, 42A, Jamuna Nagar, P.O.-Mukundapur, P.S.-Purba Jadavpur, Kol-99
- 145) Netai Chandra Pal, Namita Pal, Lily Pal & Moly Jana, 204/1 Bidhan Sarani, Kol-06
- 146) Somnath Seal, 134 Kalikapur, Uttarpara, Singha Bari, P.S.-Purba Jadavpur, Kol-99
- 147) Swapan Kumar Mondal, 109, Paschim Chowbaga, Kol-105
- 148) Sujit Dasgupta, Subhadeep Apartment, 6/1A, Naktala Road, Flat-2A, 2nd Floor, Kol-47
- 149) Dwij Chatterjee, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 150) Pritam Sengupta, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 151) Rahul Parashar, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 152) Aloka Debnath, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 153) Sanchita Mitra, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 154) Mily Sengupta, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 155) Sunita Sharm, 67/68, Bangur Avenue, Block-A, Kol-55
- 156) Sampad Mishra, 261, Salt Lake, Block-BC, Bidhan Nagar, 24 Pgs(N)
- 157) Aditi Bera, 128/1A, Picnic Garden Road, Kol-39
- 158) Samir Das, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 159) Asim Paul Chowdhury, Debchhaya Abasan Park Abasik Kalyan Samity, 243A, Jodhpur Park, Kol-68
- 160) Bhaskar Basu, IBS, WDC Building, Plot-J3, Block-GP, Sector-V, Salt Lake, Kol-91
- 161) Ajay Pathak, IBS, WDC Building, Plot-J3, Block-GP, Sector-V, Salt Lake, Kol-91
- 162) Somnath Mukherjee, IBS, WDC Building, Plot-J3, Block-GP, Sector-V, Salt Lake, Kol-91
- 163) Dipankar Dey, IBS, WDC Building, Plot-J3, Block-GP, Sector-V, Salt Lake, Kol-91
- 164) Nirmala Sharma, 67/68, Bangur Avenue, Block-A, Kol-55
- 165) Sushil Kumar, H. No.-K-4/42, Binda Apartment, Siroman Nagar, Dimna Road, East Singbhum, Pin-831018
- 166) Punit Sharma, 6, Narkeldanga North Road, Narkeldanga, Kol-11
- 167) Subhash Chandra Sharma, 67/68, Bangur Avenue, Block-A, Kol-55
- 168) Sudarshan Roy, Part No. 138, Machalandapur-1, 24 Pgs(N), Pin-743289
- 169) Piyush Sharma, BC-8/1, Baguiati, Debendra Kiran Apartment, Deshbandhu Nagar, Kol-59
- 170) Binod Kaushik, 5, Canning Street, 4th Floor, Room No. E-12, Kol-01
- 171) Manju Kaushik, 2/3, Dharmatala Road, Belurmah, Howrah-711202.
- 172) Anand Sharma, 13/7 B.T. Road(Govt. Quarters), 16, Belgharia, 24 Pgs(N), Pin-56
- 173) Asha Sharma, 13/7 B.T. Road(Govt. Quarters), 16, Belgharia, 24 Pgs(N), Pin-56
- 174) Sukalyan Roy, Part No. 138, Machalandapur-1, 24 Pgs(N), Pin-743289
- 175) Reena Sharma, Debendra Kiran Apartment, Flat-3B, BC-8/1, Baguiati Near Hindu Vidyapith School, Kol-59
- 176) Hari Prasad Jalan, 31/33, Rameshwar Malia 1st Bye Lane, Sadar, Howrah-711101
- 177) Rajaram Jalan, 31/33, Rameshwar Malia 1st Bye Lane, Sadar, Howrah-711101
- 178) Ayush Sharma, Debendra Kiran Apartment, Flat-3B, BC-8/1, Baguiati, Deshbandhu Nagar, Kol-59
- 179) Madhulata Sharma, Ideal Association, Flat No. C-2, VIP Road, Kol-54
- 180) Pawan Kumar Mishra, 51, D. B. Sarani, Unit-1, 4th Floor, P.O.-Morepukur, P.S. – Rishra, Hooghly-712250

- 181) Siddh Nath Pradhan, 1+2 Old Court House Corner, Tobacco House, Kolkata-700001.
- 182) Usha Debi Jalan, 31/33, Rameshwar Malia, 1st Bye Lane, Sadar, Howrah-711101.
- 183) Gayatri Debi Jalan, 31/33, Rameshwar Malia, 1st Bye Lane, Sadar, Howrah-711101.
- 184) Murari Lal Agarwal, 186, Bangur Avenue, Kolkata-700055.
- 185) Rohit Srivastava, 25/1 Girish Ghosh Road, 16 Bally, Howrah-711202.
- 186) Guard File.



Shri Arijit Banerjee
CTO, EKWMA



Government of West Bengal Department of Environment

East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Radha Sanyal,
13/1D, Prince Rahimuddin Lane,
Tollygunge,
Kolkata-700033

FORM 3
[See Rule 9(4)]

Order ~~granting sanction~~/ rejecting change of character of land or mode of use

Order No. 081-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)/(South) district is ~~satisfied~~/ not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9), in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* ~~that~~ the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;

*[Or,

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Place: Kolkata
Date: 21.03.2017

Signature of Member-Secretary or duly authorized
officer of the East Kolkata Wetlands Management
Authority:

Name: Arnab Roy, IAS

Designation & Seal: Member Secretary

East Kolkata Wetlands Management Authority
Department of Environment, Government of West Bengal
Writer's Buildings, Kolkata-700 001

N.B.: *Strike out the portions not relevant.



**Government of West Bengal
Department of Environment**

East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Sandhya Roy,
46/1, Babu Bagan Lane,
Dhakuria,
Kolkata-700031

FORM 3
[See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 082-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)(South) district is ~~satisfied~~ / not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* ~~that~~ the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;

*[Or,

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

~~Now,~~

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Place: Kolkata
Date: 21.03.2017

Signature of Member-Secretary or duly authorized
officer of the East Kolkata Wetlands Management
Authority:
Name: Arnab Roy, IAS
Designation & Seal:

Member Secretary
East Kolkata Wetlands Management Authority
Department of Environment, Government of West Bengal
Writer's Buildings, Kolkata-700 001

N.B.: *Strike out the portions not relevant.



Government of West Bengal Department of Environment

East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Syamal Chandra Baral,
EE-21, Flat No. 6, Sector-II,
Salt Lake,
Kolkata-700091

FORM 3
[See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 083-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)/(South) district is ~~satisfied~~/ not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* that the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;

*~~Or,~~

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Signature of Member-Secretary or duly authorized officer of the East Kolkata Wetlands Management Authority:

Name: Arnab Roy, IAS

Member Secretary

Designation & Seal: East Kolkata Wetlands Management Authority

Department of Environment, Government of West Bengal

Writer's Buildings, Kolkata-700 001

Place: Kolkata
Date: 21.03.2017

N.B.: *Strike out the portions not relevant.



Government of West Bengal
Department of Environment
East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Paritosh Kumar Mondal,
 EE-165/3, Sector-II,
 Salt Lake,
 Kolkata-700091

FORM 3
 [See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 084-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)/(South) district is ~~satisfied~~ / not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* that the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;

*~~Or,~~

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Place: Kolkata
 Date: 21.03.2017

Signature of Member-Secretary or duly authorized
 officer of the East Kolkata Wetlands Management
 Authority:

Name: Arnab Roy, IAS
 Designation & Seal: **Member Secretary**
 East Kolkata Wetlands Management Authority
 Department of Environment, Government of West Bengal
 Writer's Buildings, Kolkata-700 001

N.B.: *Strike out the portions not relevant.



Government of West Bengal
Department of Environment
East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Sabita Saha,
EE/97/4, Sector-II,
Salt Lake,
Kolkata-700091

FORM 3
[See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 085-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)(South) district is ~~satisfied~~ / not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

~~Whereas the Authority is satisfied / not satisfied* that the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;~~

*[Or,

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Signature of Member-Secretary or duly authorized officer of the East Kolkata Wetlands Management Authority:

Name: Arnab Roy, IAS

Designation & Seal:

Place: Kolkata
Date: 21.03.2017

N.B.: *Strike out the portions not relevant.

Member Secretary
East Kolkata Wetlands Management Authority
Department of Environment, Government of West Bengal
Writer's Buildings, Kolkata-700 001



Government of West Bengal
Department of Environment
East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Deba Prosad Mukherjee,
 Flat No. 602A, Mineral House,
 Geoscientists' Cooperative Housing Society,
 Thakur Village, Kandivli (East), Mumbai-400101

FORM 3
 [See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 086-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)(South) district is ~~satisfied~~ / not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* ~~that the creation of the compensatory water body in dag~~
 Nos., under mouza, J.L. No. has been duly complied with;

*[Or,

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Place: Kolkata
 Date: 21.03.2017

Signature of Member-Secretary or duly authorized
 officer of the East Kolkata Wetlands Management
 Authority:

Name: Arnab Roy, IAS

Designation & Seal: Member Secretary
 East Kolkata Wetlands Management Authority
 Department of Environment, Government of West Bengal
 Writer's Buildings, Kolkata-700 001

N.B.: *Strike out the portions not relevant.



Government of West Bengal
Department of Environment
East Kolkata Wetlands Management Authority
 Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata – 700 106

To: Prabir Paul,
 16, Prince Rahimuddin Lane,
 Tollygunge,
 Kolkata-700033

FORM 3
 [See Rule 9(4)]

Order ~~granting sanction~~ / rejecting change of character of land or mode of use

Order No. 087-CTO/EN/313/2011-12

Dated, 21st March, 2017

Whereas the Collector of 24 Parganas (~~North~~)/(South) district is ~~satisfied~~ / not satisfied* that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) , in Jagatipota mouza, J.L. No. 3 may be granted under section 4C of the West Bengal Land Reforms Act, 1955;

And

Whereas the Authority is satisfied / not satisfied* ~~that the creation of the compensatory water body in dag Nos., under mouza, J.L. No. has been duly complied with;~~

*~~Or,~~

Whereas the Authority is satisfied that the change of character or mode of use of land in the dag Nos. 37 (R.S. Dag No. 9) in Jagatipota mouza, J.L. No. 3

- (a) may adversely affect the ecology and / or environment of the East Kolkata Wetlands area; or
- (b) may adversely affect the livelihood or socio-economic condition of the people in the area; or
- (c) is against the principles of Ramsar Convention;

the permission for change of character of land described above or its mode of use is disallowed by the Authority, in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006]*;

Now,

in exercise of the power under sub-section (4) of section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006, the East Kolkata Wetlands Management Authority is hereby pleased to grant permission for change of character / mode of use of the land within the East Kolkata Wetlands, under terms and conditions given below:

Terms and Conditions

1. The permission of change of character / mode of use of land shall be restricted to dag nos., of mouza, J.L. No. under district, having total area of acres.
2. The order shall remain valid till
3. The purpose for which conversion is permitted shall be strictly adhered to and there should not be any deviation.
4. There shall be no deviation from the activities proposed in the project report.
5. The activities shall be in conformity with the approved management plan of the East Kolkata Wetlands area.
6. No water body, other than the ones permitted, shall be filled up under any circumstances.
7. The project shall be subject to monitoring by the Authority or its authorized agency/agencies at any point of time.
8. There shall not be any destruction to the biodiversity in the project area.
9. There shall not be any diversion or blockage or any such activity that could destroy the wholesomeness of the water bodies or the sewage, dry weather and the storm water flow channels.
10. The Authority, if it is of the opinion that the project may damage the ecology or alter the ecosystem of the area, or that there is any violation of the Act, may withdraw the permission any time.

Place: Kolkata
 Date: 21.03.2017

Signature of Member-Secretary or duly authorized
 officer of the East Kolkata Wetlands Management
 Authority:
 Name: Arnab Roy, IAS
 Designation & Seal:

Member Secretary
 East Kolkata Wetlands Management Authority
 Department of Environment, Government of West Bengal
 Writer's Buildings, Kolkata-700 001

N.B.: *Strike out the portions not relevant.

List of Cases pending before Hon'ble High Court at Calcutta & Hon'ble National Green Tribunal, Eastern Zone Bench relating to EKW

SL No	Case No and Year	Cause Title	Brief Particulars
Hon'ble High Court at Calcutta			
1	CPAN 2189/2013 WP No 24410(W) of 2007	CPAN2189/2013: Sankari Mondal & Ors Vs Prof Binay Kanti Dutta & Ors. WP 24410(W)/2007: Subal Chandra Mondal-Vs-State of West Bengal & Ors.	Removal of illegal construction in Mouza Chowbaga in the EKW.
2	C.R.R. No. 3430/2009, W.P. No. 349(W) of 2010	CRR 3430/2009: Souren Das Vs. State of WB & Others. WP 349(W)/2010: Shyamalesh Das Vs State of WB & Others	Petition for conversion of land use for housing
3	CPAN No 428 of 2014. WP No 17841(W) of 2013.AST No 142 of 2013 with ASTA 84 of 2013.	Bikash Kumar Ray & Another-Vs-State of WB & Others	CPAN No 428: The EKWMA filed contempt petition for erection of a boundary wall of around 9 feet height without securing permission from EKWMA and also built permanent structure of two rooms inside the boundary wall.
4	WP No. 3317(W) of 2015	Kalyan Bharti Foundation & Another Vs. The Chief Secretary & Others	The petitioner wanted the Court to quash the Reasoned Order dt. 26.03.2012 issued by the EKWMA to remove the illegal fencing.
5	WP No. 11403(W) of 2015	Shyam Greenfield Developers Pvt Ltd & Another Vs. The Chief Secretary, Govt. of WB & Others	To set aside the reasoned order dt. 14.02.2014 issued by the EKWMA to remove the illegal fencing.
6	WP No. 8456(W) of 2015, CAN 7824 & 4034 of 2017	Ranjit Kumar Sanfui Vs. The State of WB & Others	Illegal filling up of wetlands at Mukundapur-Kalikapur area under the banner of 'Prothoma Garden' project and construction thereon.
7	WP No. 22198(W) of 2015	Vishal Water World Pvt. Ltd. Vs. EKWMA & Others	To revoke the reasoned order dt. 22.04.2015 passed by the EKWMA for illegal change of character or mode of use of land and also to issue NOC in favour of the petitioner against construction of residential buildings on the land falls within the classification "Substantially water body oriented area (full)".
8	CRR No. 3413 of 2015	Sukti Lahiri Vs. State of West Bengal & Another	To quash all the orders passed by the ACJM, Baruipur with respect to Sonarpur P.S. Case no. 1327 of 2015 lodged on the basis of the complaint of the EKWMA for illegal construction of one-storey building.
10	WP No 20355(W) of 2016	Jibendra Prasad Das-Vs-The State of WB & Ors	Petition was filed against the construction of Netaji Subhas Engineering College.
12	WP No 20867(W) of 2016	Jibendra Prasad Das Vs. State of WB & Ors	Removal of construction in Techno India Public School
13	WP No 27197(W) of 2016	Vaidic Dharma Sansthan Trust & Ors. Vs. The State of WB & Ors	Consideration of Application in Form 1 for change of character of land in the EKW. High Court directed to consider the application as per the EKW Act.
14	CRR 3725 of 2016	Nitin Himmat Singka & Anr. Vs EKWMA & Ors.	Petitioner wanted to quash the proceedings in the District Court lodged for unauthorized construction of boundary wall in the EKW.
Hon'ble National Green Tribunal, Eastern Zone Bench			
1	O.A. 18/2016	Bishnu Pada Pakhira Vs. The Pollution Control Board of WB & Others	Unauthorized construction namely Urban Sabujayan in the EKW
2	O.A. 25/2016	Sunit Kumar Mallick Chowdhury Vs. The State of WB	Filling up of a water body namely Ukil Bheri which is outside of the East Kolkata Wetlands
3	O.A. 78/2016	Dhruba Das Gupta & Others Vs. MoEF & CC & Others	For protection of the EKW and for maintaining optimum level of wastewater flow into the EKW.
4	O.A. 80/2016	PUBLIC Vs. EKWMA & Ors	Illegal construction by Vedic Dharma Sansthan Trust and construction of road on Munshir Bheri



BIRDS

of
EAST KOLKATA WETLANDS



*East Kolkata Wetlands Management Authority
Department of Environment
Government of West Bengal*



Some photographs of Publication of book: Birds of East Kolkata Wetlands



East Kolkata Wetlands Management Authority

Department of Environment, Govt. of West Bengal

Pranisampad Bhaban, 5th Floor, LB-2, Sector-III

Salt Lake, Kolkata-700 106

Ph.: 033 2335 3003, Fax: 033 2335 6403

E-mail: ctoekwma@gmail.com, website: www.ekwma.in