BEFORE THE NATIONAL GREEN TRIBUNAL

EASTERN ZONE BENCH, KOLKATA

ORIGINAL APPLICATION No. of 2022

Rabeya Tabassum .....**Applicant**

Versus

Union of India and others .....**Respondents**

ADVOCATE FOR APPLICANT

Afraaz Suhail

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IN THE NATIONAL GREEN TRIBUNAL, EASTERN ZONE BENCH, KOLKATA

OA NO. OF 2022

Rabeya Tabassum ... Petitioner

Versus

Union of India and other ... Opp.Party

INDEX

Sl.No.	Particulars	Pages
1.	Petition	1-34
2.	**Annexure 1.** Google images of dumping ground	35-36
3.	**Annexure 2** Photograph of drain	37-40
4.	**Annexure 3** Photograph of river	41-48
5.	**Annexure 4** Ground water information Booklet of Kendrapara district	49-74

6. **Annexure 5** 75-82

Journal of Humanities and Science

by Kendrapara Autonomous College

7. **Annexure 6** 83-99

Newspaper publication

8. **Annexure 7** 100-103

True copy of representation

9. **Annexure 8** 104-120

State Water Policy

10. **Annexure 9** 121-133

National Water Policy

Vakalatnama

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Kolkata

Date:

Advocate for the Petitioner

SYNOPSIS

That the present application is filed challenging the action of respondents for gross violation of the provision of Section 2(a), 2(k), 24 and 25 of Water Prevention and Control of Pollution Act 1974, Section 7 and 39 of Orissa Irrigation act and State Water policy for deliberate violation of Doctrine of Public trust as defined by Hon'ble Supreme Court. The applicant in this application challenges the arbitrary and illegal action of respondents in dumping untreated solid and liquid waste in the rive Gobari of Kendrapara ditrict. The applicant also challenges pollution caused to the said river by private entities by dumping waste directly into the said river as well dumping the waste in the river banks which later contaminates the said river. The pollution has almost made the river dead and also posing threat to the riverine ecology and changing the nature and character of river bed. Such action not only creates ecological imbalance but also is opposite of sustainable development and also a clear violation of Article 21 of the Constitution.

(Adv)

16/02/2022

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The dumping of pollutants in the pond area of river is a permanent threat to the Kendrapara town as the ground water ha got polluted because of the said pollution.

Finding no other alternative the applicant knocks the door of this Hon'ble Tribunal to protect the Environment and lakhs of people including farmers depending on the said river for irrigation, fishing and other purposes and protect the Kenrapara town from forceable disaster.

(Adv)

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BEFORE THE NATIONAL GREEN TRIBUNAL

EASTERN ZONE BENCH, KOLKATA

ORIGINAL APPLICATION No. of 2022

In the matter of: An application Under Section 14, 15 and 18 of the National Green Tribunal Act,2010 read with Rule 8 of the National Green Tribunal (Practice and Procedure) Rules, 2011.

In the matter of: Rabeya Tabbasum aged 54 years W/o Sk Sabir Ali At- Jobra Majhi Cuttack 753003

Email- rabeyatabassum787@gmail.com

.....Applicant

Versus

1. Union of India through Secretary of Department of Water Resources, River Development and Ganga Rejunuvation At- e-Gov cell, 6th floor cabin, Shram

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Shakti Bhwan , Rafi Marg New Delhi-110001 email- secy-mowr@nic.in

2. Union of India represented through Secretary of Enviornment, Forest and Climate Change At- Jorbagh Road, Aliganj New Delhi-110003 email- secy-moef@nic.in
3. State of Odisha represented through Principal Secretary of Department of Forest, Environment and Climate Change At- Sachivalaya Marg, Bhubaneswar-751001 email- fesec.or@nic.in
4. State of Odisha represented through Principal Secretary of Department of Water Resource At- Keshari Nagar Bhubaneswar-751001 email- eic-wr.od@nic.in
5. State of Odisha represented through Principal Secretary of Revenue and Disaster Management Department At- Sachivalaya Marg Bhubaneswar-751001 email- revsec.od@nic.in

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6. Collector and District Magistrate Kendrapara At- Collectorate Building Kendrapara-754211 email-dm-kendrapara@nic.in
7. Central Pollution Control Board represented through Chairman At- Parivesh Bhawan, East Arjun Nagar, Delhi-110032 email- ccb.cpcb@nic.in
8. Central Ground Water Board represented through its Chairman At- Bhujal Bhawan, NH-IV, Faridabad, 121001 email- chmn-cgwb@nic.in
9. State Pollution Control Board represented through its Member Secretary At- Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8 Bhubaneswar-751012 email- paribesh1@dataone.org
10. Kendrapara Municipality At- Balagandi Bazar Main Road Kendrapara-754211 email - kendraparamunicipality@gmail.com

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11.Engineer in Chief, Water Resource Department At- Heads of Department building, Bhubaneswar-751001 email- eic.wr.od@nic.in

12.Office of Executive Engineer, Lift Irrigation Division At- Tinimuhani Kendrapara -754211 email- eeolickdp@yahoo.in

13. Tehsildar Kendrapara Sadar At- Tinimuhani Kenrapara-754211

..... **Respondents**

To

The Hon'ble Chairman and His Companion Members of the Hon'ble Green Tribunal, Eastern Zone Bench, Kolkata

THE HUMBLE PETITION OF APPLICANT ABOVE NAMED

(Adv)

SK. OSIUDDIN AHMED
ADVOCATE, NOTARY
CUTTACK. ODISHA. INDIA

Most Respectfully Sheweth

1. The address of the applicant I given above for service of notices of this application
2. The address of respondents are given above for the service of notice of application

3. That the application is being filed under section 14,15,18,19 and 20 of the National Green Tribunal Act challenging s unwarranted disposal of waste by private and state authorities in river Gobari situated in Kendrapara district of Odisha.

4. That the applicant is an environmental activist and has been constantly raising issues relating to larger public interest, working on issues of transparency and accountable governance and raising such issues before judicial and quasi-judicial authorities.

5. That it is worthwhile to mention here that the river Gobari has huge mythological importance. Mythologically the river was known as "Madhusagar". The river Gobari

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flows from Mahanadi-Paika Island at Bahadulpur in Cuttack district, traverses through Jajpur district at Panchupandav in north-west direction. The 138km long river approximately helps to irrigate around 7616 hectares of farmland.

6. That it is worthwhile to mention here that the said river has been source of life for many people of Odisha as majority of fish farming has been happening in the said area. Even the area is famous for its nuts and oil seed farming and majority of the above mentioned area. The pollution and unauthorised occupation over the river has badly affected the people dependent on the said river.

7. That it is worthwhile to mention here that the river has been badly affected by disposal of solid and liquid waste mostly by the municipal and other private authorities. That it is worthwhile to mention here that dumping of waste is mostly caused in places like Hajaribagicha, Khadianga, Jayapura, Sunaelo, Ekarakhandi, Naya Idgah etc. This has badly degraded the water quality of the said river and the water has become completely unfit for any

(ADV)

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type of use. Google earth image of dumping in the river has been annexed here as **Annexure 1.**

8. That it is worthwhile to mention here that in places like Naya Idgah untreated waste water is directly being dumped inside the river through drains. This not only pollutes the said river but also makes it unfit for any use. Photo of drain which dumps waste into the river has been Annexed here as **Annexure 2**

9. That it is worthwhile to mention here that there is open and unrestricted dumping in the fields near to the river. The dumping in mostly happening in places like Jeyapora, Naya Idgah etc.

10. That it is worthwhile to mention here that Kendrapara generates around 7 TPD of wet waste and 7 TPD of dry waste. For wet waste processing this municipality has two functioning micro composting centre and for dry waste there is one functioning Material Recovery Facility.

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11. That it is worthwhile to mention her that despite all these facilities dumping in the river is still at large. Most of the wastes under Kendrapara Municipality get dumped into the river Gobari.

12. That it is worthwhile to mention here that due to the pollution the area the area has been infested with mosquitos and many people have to suffer with water borne disease.

13. That it is worthwhile to mention here that the construction in the river bed at aforementioned site is ever expanding. If those structures are allowed then entire river bed then whole river bed will be full of construction leading to flood and disaster. The river bed used to absorb the flood water and because of such concrete structure in the river bed it may affect the course of water which will have adverse impact on Kendrapara town and people living near the river. *The Black's Law dictionary* (pg 154) describes a river bed as hollow channel of a water course; the depression between the banks worn by the regular and

(Adv)

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usual flow of water; The land which is covered by the water in its ordinary low stage; The area extending between the opposing banks measured from the foot of the bank from the top of the water at its ordinary stage.

14. That it is worthwhile to mention here that the riverine ecosystem has badly been affected due to destruction caused to the river because of unauthorised encroachment and dumping. Unchecked disposal of solid and liquid waste has turned it into waste water which has badly affected the riverine aquatic system of the said river. True copy of photographs of waste disposal on the river has been annexed here as **Annexure 3**

(Adv)

15. That it is worthwhile to mention here that due to insufficient water deposit of water in the river the ground water of peripheral area most specifically Kendrapara town has substantially reduced and also got contaminated which cannot be used for any purpose as it may can cause hazardous health problem. Even a report by Central Ground Water Board has suggested the presence of

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pollutant like nitrate, chloride, fluoride etc in the ground water. True copy of Ground water information Booklet of Kendrapara district has been annexed here as **Annexure 4.**

16. That it is worthwhile to mention here that several independent reports have suggested that the said river is suffering extremely badly because of pollution. A study conducted by Quintessence the Journal of Humanities and Science by Kendrapara Autonomous College suggest that the water has high acidic value and mostly due to dumping of waste. Quintessence the Journal of Humanities and Science by Kendrapara Autonomous College has been annexed here as **Annexure 5.**

17. That the issues as stated above has highly been publicized in different newspaper and electronic media, drawing the attention of the authorities. But to satisfy the vested interest of certain people no step has been taken. The copies of news published in this regard has been annexed here as **Annexure 6.**

SK. OSIUDDIN AHMED
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18. Those in their colourable exercise of the power and position the respondent are remaining silent which will take toll on the riverine ecosystem and cause irreparable loss to environment as well as local people of Kendrapara and shall take away the livelihood of the farmers dependent on the said river. Representation filed before respondent has been annexed here **Annexure 7**

19. That the above mentioned action of the respondents raises substantial question relating to environment as there is direct violation of specific statutory environmental obligation, the community at large other than individual or group of individuals are highly affected by environmental consequences, the gravity of damage to the environment and property is highly substantial, the damage to public health is broadly miserable, the environmental consequences relate to specific activity and point source of pollution as has been enumerated in Section 2(m) of National Green tribunal act 2010.

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20. Being aggrieved by the above action of the respondents the applicant being a public spirited person and an environmental activist craves to invoke the jurisdiction of this Hon'ble Tribunal by way of filing this O.A. on following grounds

GROUNDS

I. For the instant application being filed u/s 14 of National Green Tribunal Act and u/s 24 of Water(Prevention and Control of Pollution) Act,1974 under the Act raising the substantial question wherein the community at large and the environment is grossly affected and is coming within the bit of Section 2(m) of the Act. Section 2(m) of the Act provides that substantial question relating to environment. The arbitrary action of the respondents is an antithesis to the doctrine of public trust as upheld and laid down by the Hon'ble Supreme Court in a plethora of judgements. Section 24 of the Water Act 1974 states that

24. Prohibition on use of stream or well for disposal of polluting matter, etc.—

"(1) Subject to the provisions of this section,—

(a) no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such

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standards as may be laid down by the State Board to enter (whether directly or indirectly) into any 1[stream or well or sewer or on land]; or

(b) no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences.

(2) A person shall not be guilty of an offence under sub-section (1), by reason only of having done or caused to be done any of the following acts, namely:—

(a) constructing, improving or maintaining in or across or on the bank or bed of any stream any building, bridge, weir, dam, sluice, dock, pier, drain or sewer or other permanent works which he has a right to construct, improve or maintain;

(b) depositing any materials on the bank or in the bed of any stream for the purpose of reclaiming land or for supporting, repairing or protecting the bank or bed of such stream provided such materials are not capable of polluting such stream;

(c) Putting into any stream any sand or gravel or other natural deposit which has flowed from or been deposited by the current of such stream;

(d) Causing or permitting, with the consent of the State Board, the deposit accumulated in a well, pond or reservoir to enter into any stream.

SK. OSIUDDIN AHMED
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(3)The State Government may, after consultation with, or on the recommendation of, the State Board, exempt, by notification in the Official Gazette, any person from the operation of sub-section (1) subject to such conditions, if any, as may be specified in the notification and any condition so specified may by a like notification be altered, varied or amended."

Section 25 of the said Act states that

25. Restrictions on new outlets and new discharges.—1[

(1)Subject to the provisions of this section, no person shall, without the previous consent of the State Board,—

(a) establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); or

(b) bring into use any new or altered outlet for the discharge of sewage; or

(c) begin to make any new discharge of sewage: Provided that a person in the process of taking any steps to establish any industry, operation or process immediately before the commencement of the Water (Prevention and Control of Pollution) Amendment Act, 1988, for which no consent was necessary prior to such commencement, may continue to do so for a period of three months from such commencement or, if he

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has made an application for such consent, within the said period of three months, till the disposal of such application.

(2) An application for consent of the State Board under sub-section (1) shall be made in such form, contain such particulars and shall be accompanied by such fees as may be prescribed.]

(3) The State Board may make such inquiry as it may deem fit in respect of the application for consent referred to in sub-section (1) and in making any such inquiry shall follow such procedure as may be prescribed. 2[(4) The State Board may—

(a) grant its consent referred to in sub-section (1), subject to such conditions as it may impose, being—

(i) in cases referred to in clauses (a) and (b) of sub-section (1) of section 25, conditions as to the point of discharge of sewage or as to the use of that outlet or any other outlet for discharge of sewage;

(ii) in the case of a new discharge, conditions as to the nature and composition, temperature, volume or rate of discharge of the effluent from the land or premises from which the discharge or new discharge is to be made; and

(iii) that the consent will be valid only for such period as may be specified in the order, and any such conditions imposed shall be binding on any person establishing or taking any steps to establish any industry, operation or process, or treatment and disposal system of extension or addition thereto, or using the new or altered outlet, or discharging the effluent from the land or premises aforesaid; or

SK. OSIUDDIN AHMED
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CUTTACK, ODISHA, INDIA

(b) refuse such consent for reasons to be recorded in writing.

(5) Where, without the consent of the State Board, any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, is established, or any steps for such establishment have been taken or a new or altered outlet is brought into use for the discharge of sewage or a new discharge of sewage is made, the State Board may serve on the person who has established or taken steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, or using the outlet, or making the discharge, as the case may be, a notice imposing any such conditions as it might have imposed on an application for its consent in respect of such establishment, such outlet or discharge.

(6) Every State Board shall maintain a register containing particulars of the conditions imposed under this section and so much of the register as relates to any outlet, or to any effluent, from any land or premises shall be open to inspection at all reasonable hours by any person interested in, or affected by such outlet, land or premises, as the case may be, or by any person authorised by him in this behalf and the conditions so contained in such register shall be conclusive proof that the consent was granted subject to such conditions.]

(7) The consent referred to in sub-section (1) shall, unless given or refused earlier, be deemed to have been given unconditionally on the expiry of a period of four months of the

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CUTTACK, ODISHA, INDIA

making of an application in this behalf complete in all respects to the State Board.

(8) For the purposes of this section and sections 27 and 30,—

(a) the expression "new or altered outlet" means any outlet which is wholly or partly constructed on or after the commencement of this Act or which (whether so constructed or not) is substantially altered after such commencement;

(b) the expression "new discharge" means a discharge which is not, as respects the nature and composition, temperature, volume, and rate of discharge of the effluent substantially a continuation of a discharge made within the preceding twelve months (whether by the same or a different outlet), so however that a discharge which is in other respects a continuation of previous discharge made as aforesaid shall not be deemed to be a new discharge by reason of any reduction of the temperature or volume or rate of discharge of the effluent as compared with the previous discharge.

II. For that the environment as defined U/s 2(a) of Environment Protection Act, 1986 provides *"environment" includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property";*

SK. OSIUDDIN AHMED
ADVOCATE, NOTARY
CUTTACK. ODISHA. INDIA

The term environment as defined above inherently includes climate within its scope. Hence the present original application which is being preferred because of the adverse impact of the impugned action of the respondent comes within the ambit and jurisdiction of Hon'ble Tribunal.

III. For that the action of the respondent is violative of provision of Article 19(1)(g) of the Constitution of India which states that "*g) To practice any profession, or to carry on any occupation, trade or business*"

It is worthwhile to mention here that the water was used for purposes of irrigation like farming oil seeds and nuts but due to unchecked encroachment and excessive pollution the river bed had become dry and had become dumping yard. The above nuisance are being cause creating environmental disorder in gros violation of Section 2(a)(k) and section 24(2)(a)(b)(c) of Water Act 1974. It not only affects the human health but also affects substantially to the eco environment system.

(ADV)

SK. OSIUDDIN AHMED
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CUTTACK. ODISHA. INDIA

IV. For that the obstruction of the river violates the provision of Section 7 and 39 of Orissa Irrigation Act, 1959 which stipulates that the natural flow of water at any cost shall not be obstructed. Such obstructions are basically the death nail for the river system affecting the livelihood of the community and other eco revering system.

V. For due to unauthorised encroachment and unchecked pollution of the river Gobari the ground water of the town could not be recharged or has been badly contaminated, it has caused scarcity of drinking water in the said area and also the underground water have been contaminated with potassium, nitrate etc.

VI. "Doctrine of Public Trust"- There is an ancient Roman theory called as doctrine of Public trust. It states that certain common properties such as air, water and forests are immense importance to the people in general and they must be held by the government as a trustee for the free and unimpeded use by general public and it would be wholly unjustified to make them subject to private

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ownership. The doctrine enjoins upon the government to protect the resources for enjoyment of the general public rather than permit their use for private ownership or commercial exploitation. The Hon'ble Supreme Court recognized this principle in **MC Mehta vs Kamal Nath (1997) 1 SCC 388**

VII. That due to dumping of waste the hydro morphological state of the river as well as the aquatic life of the river is getting affected. This would ultimately result in affecting the flow dynamics of the river, i.e. the amount of water flowing per unit volume. A change in the flow dynamics of a river can result in decrease in the water level of canal, ultimately creating draught like situation which would badly affect the livelihood of people.

VIII. For that a large number of fishermen communities who were maintaining their family by fishing have lost their livelihood as the river have almost died.

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IX. For that s to whether the action is sustainable in the eye of law being violate of Article 21 of the Constitution of India or not. In the view of above fact that in any organized society right to live does not limit to animal needs of men. It is secured when he is assured of all facilities to develop him and is freed from restriction which inhibits his growth.

X. For that all human rights are designed to achieve this subject. Right to live guarantee in any civilized society implies the right to food, water, decent environment, education, medical care and shelter.

(Adv)

XI. For that air and water are the most precious gift of the nature are not only essential to human but also to flora and fauna. For that in order to protect the environment and the ecology of man a special strategy has been developed Stockholm conference on Human Environment. Since then Indian government has also taken several legislative and executive measure in addition to constitutional amendment to protect and

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preserve environment. The judiciary has also played vital role in protecting environment through its dynamic interpretation of Article 21, 48A and 51A of the Indian Constitution.

XII. For that the country accounts for 2.45 per cent of total land area and 4 per cent of the water resources of the world. Nevertheless, water is a scarce natural resource with demands on it increasing on event of growing population of over one billion. Since water is a scarce resource, its sharing, distribution requires a regulatory framework, which is brought about through not only laws written but also traditional and customary practices. In terms of statutory development, irrigation laws constitute the most developed part of water law. These include laws on embankments, drinking water supply, irrigation, floods, water conservation, river water pollution, rehabilitation of evacuees and displaced persons, fisheries and ferries.

SK. OSIUDDIN AHMED
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XIII. The Judiciary has propounded that the right to life and hence the scope of Article 21, Article 48 and Article 51(g) can include the right to clean water. In case of Narmada **Bachao Andolan vs Union of India 10 SCC 664** the Hon'ble Supreme court held that the right to clean water is fundamental right under Article 21 of the Constitution. The court observed that right to clean water is a part of the basic necessity of the human's right to life. The state is bound to prevent water getting polluted.

XIV. For the right to water falls as an inherent right vested in persons who either acquire that right by ownership of property or in current scenario more appropriately are more vested with an interest in it by means of stat being its trustee. The water that is widely available everywhere is owned by every individual. The state must therefore ensure that the public is able to exercise their right that means that the public has access to water and availability to water. In **Subash Kumar vs State of Bihar AIR 1991, 420 SC** THE Supreme Court held that "the right to live includes the right of enjoyment of life. If anything

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CUTTACK, ODISHA, INDIA

endangers or impairs that quality of life in derogation of laws, a citizen has right to recourse to Article 32 of the constitution for removing the pollution of water or air which may be detrimental to the quality of life". By this judgement and many others the court placed a duty on the state to ensure the rights of citizen are protected.

XV. Further in **MC Mehta vs Kamalnath (1 SCC 388 (1997)** the Supreme Court ruled that the State is not only bound to regulate water supply but should also help to realize the right to healthy water and prevents hazards. The court also discussed how the principle of Roman law "*Salus Populi est Suprema Lex*" (Welfare of people is paramount law) is the abiding faith of the Indian Constitution. Thereby the court assigned the state with a positive role to help people realize their right and needs.

XVI. Violation of State Water Policy 2007. Section 7 of the State Water Policy States that Ecology and Water Quality

7.1 The importance of water for maintaining the ecological balance of the

river system s would be an integral part of the State Water

Policy. The environmental impact of the irrigation projects will be carefully evaluated before the projects are cl eared. Wetlands like lakes, lagoons, mangroves, marshes etc would be su stained and adequate conservation measures would be undertaken through systematic planning.

7.2 The preparation of the project plan will take into account the requirement of environmental flow in the river as a mandatory consideration.

7.3 Studies will be conducted in order to analyse the requirement of water for maintenance of the riverine ecosystems. Periodic reports would be brought out on the basis of these studies.

7.4 Industrial and Municipal effluents should be treated to acceptable levels and standards before discharging them into natural streams.

7.5 Both surface water and Ground water should be regularly monitored for quality. Top priority will be given to address water quality problems. The information should be continuously shared with people.

SK. OSIUDDIN AHMED
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CUTTACK. ODISHA. INDIA

7.6 Use of non-biodegradable materials should be discouraged by suitable mechanisms.

7.7 The principle of "Polluters m ust pay" will be applied to meet the expenses of maintaining water quality.

7.8 Necessary and adequate steps should be taken including legislation for preservation of existing water bodies and their sustainable use. True Copy of State Water Policy has been annexed here as **Annexure 8**

XVII Violation of National Water Policy- The policy has been made directing the state agencies to frame laws and issue direction to concerning agencies to protect water from pollution etc. True copy of National Water Policy has been annexed as **Annexure 9**

SK. OSIUDDIN AHMED
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LIMITATION

That there is continuing cause of action due to on-going uncontrolled disposal of untreated liquid and solid waste hence the present application is not barred by limitation.

INTERIM PRAYER

Constitute an committee consisting of Ministry of Environment, Forest and Climate Change, Water Resource Department and District Collector Kendrapara for report on status of pollution and effect of pollution on the said river.

(ADV)

SK. OSIUDDIN AHMED
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PRAYER

It is therefore prayed that this Hon'ble Tribunal may graciously please to:

A. Further be pleased Issue direction to the Municipality Kendrapara to stop disposing untreated waste in river Gobari in places like Naya Idgah, Jeypora etc.

B. Further be pleased to direct Government of Odisha to take steps to clean the already polluted stretch of the river.

C. Further be pleased to direct the Government of Odisha to remove all the sands and shoals which has already been dumped and filled up within the river which has already reduced the water retaining capacity of the river.

D. Issue direction to the Union of India to interfere in the matter and suggest the other respondents to act as per appropriate provisions of law to protect the environment and riverine ecology.

E. Further be pleased to direct State respondents to undertake huge plantation work on river embankment immediately to restore back the riverine ecology and environment.

SK. OSIUDDIN AHMED
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F. Further be pleased to direct Kendrapara Municipality to clean all the waste that has been dumped in the embankments in places like Naya Idgah, Hajaribagicha, Khadianga, Jayapura, Sunaelo, Ekarakhandi, by itself and other private entities

G. Further be pleased to direct state authorities to restrict dumping of untreated solid and liquid waste into the river.

H. Further be pleased to direct state authorities to take steps to clean all the pollutants that has been disposed in the said river

I. May further be pleased to direct to implement policy for conserving river taking into consideration National Water Policy 2012 and State Water Policy 2007

J. Or any other order(s), direction(s) may be passed as deemed fit and proper

And for this act of kindness the applicant shall in duty bound shall ever pray.

Kolkata

By the applicant

Date 16/02/2022

Advocate

SK. OSIUDDIN AHMED
ADVOCATE, NOTARY
CUTTACK, ODISHA, INDIA

UNDERTAKING

The English translation of the odia annexures will be filed as and when directed by the Hon'ble Tribunal. The applicant craves the liberty of the Hon'ble Tribunal to file additional documents which could not be arranged due to the restriction imposed during Covid.

Advocate

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BEFORE THE NATIONAL GREEN TRIBUNAL

EASTERN ZONE BENCH, KOLKATA

ORIGINAL APPLICATION No. of 2022

Rabeya Tabassum .....Applicant

Versus

Union of India and others .....Respondents

VERIFICATION

I Rabeya Tabassum aged 54years W.o Sk Sabir Ali At- Jobra Cuttack-753003 do hereby verify and state that the contents of the original application and the facts stated are true to best of my belief. And no material facts which are available to me are being supressed by me in any manner whatsoever.

Identified by

Afraaz Suhail
Advocate

Solemnly Sworn before me by..R.....Tabassum.... being identified by..A..Sohail Advocate at Cuttack, dated..16/02/2022..

Rabeya Tabassum
Verificant

16/02/2022

Sk. Osiuddin Ahmed
NOTARY, CUTTACK TOWN

BEFORE THE NATIONAL GREEN TRIBUNAL

EASTERN ZONE BENCH, KOLKATA

ORIGINAL APPLICATION No. of 2022

Rabeya Tabassum .....Applicant

Versus

Union of India and others .....Respondents

AFFIDAVIT

I Rabeya Tabassum aged 54years W.o Sk Sabir Ali At- Jobra Cuttack-753003do herby solemnly affirm and state as follows that,

1. That I am the applicant in this case
2. That the facts stated are true to the best of my knowledge and no materials facts which are available to me are being supressed by me in any manner whatsoever.

Identified By

Afraaz Suhail

Advocate

Rabeya Tabassum

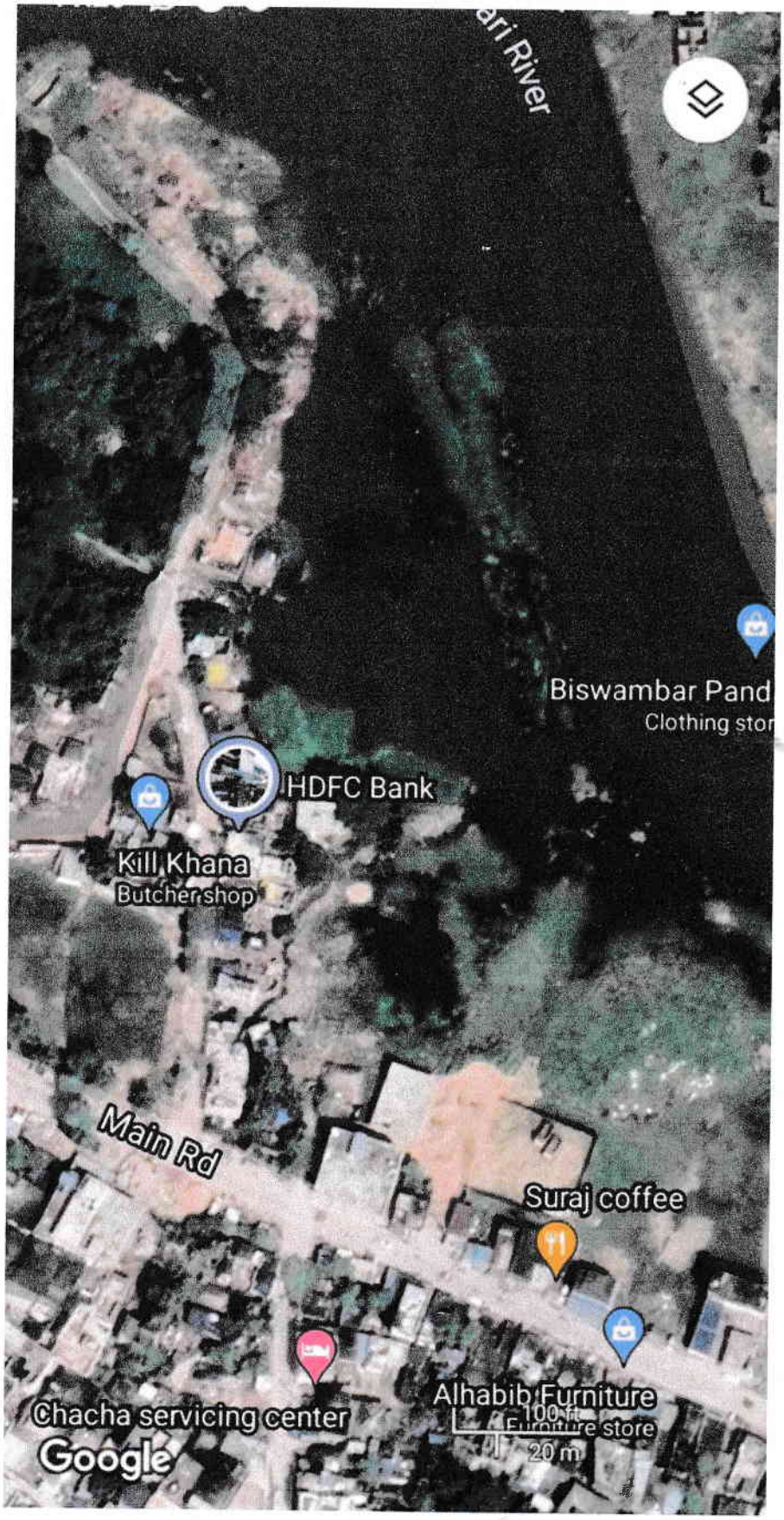
Deponent

Solemnly Sworn before me by..R.....Tabassum..
being identified by....A. Sohail
at Cuttack, dated..16/02/2022

16/02/2022

Sk. Osiuddin Ahmed
NOTARY, CUTTACK TOWN

Annexure 1 35



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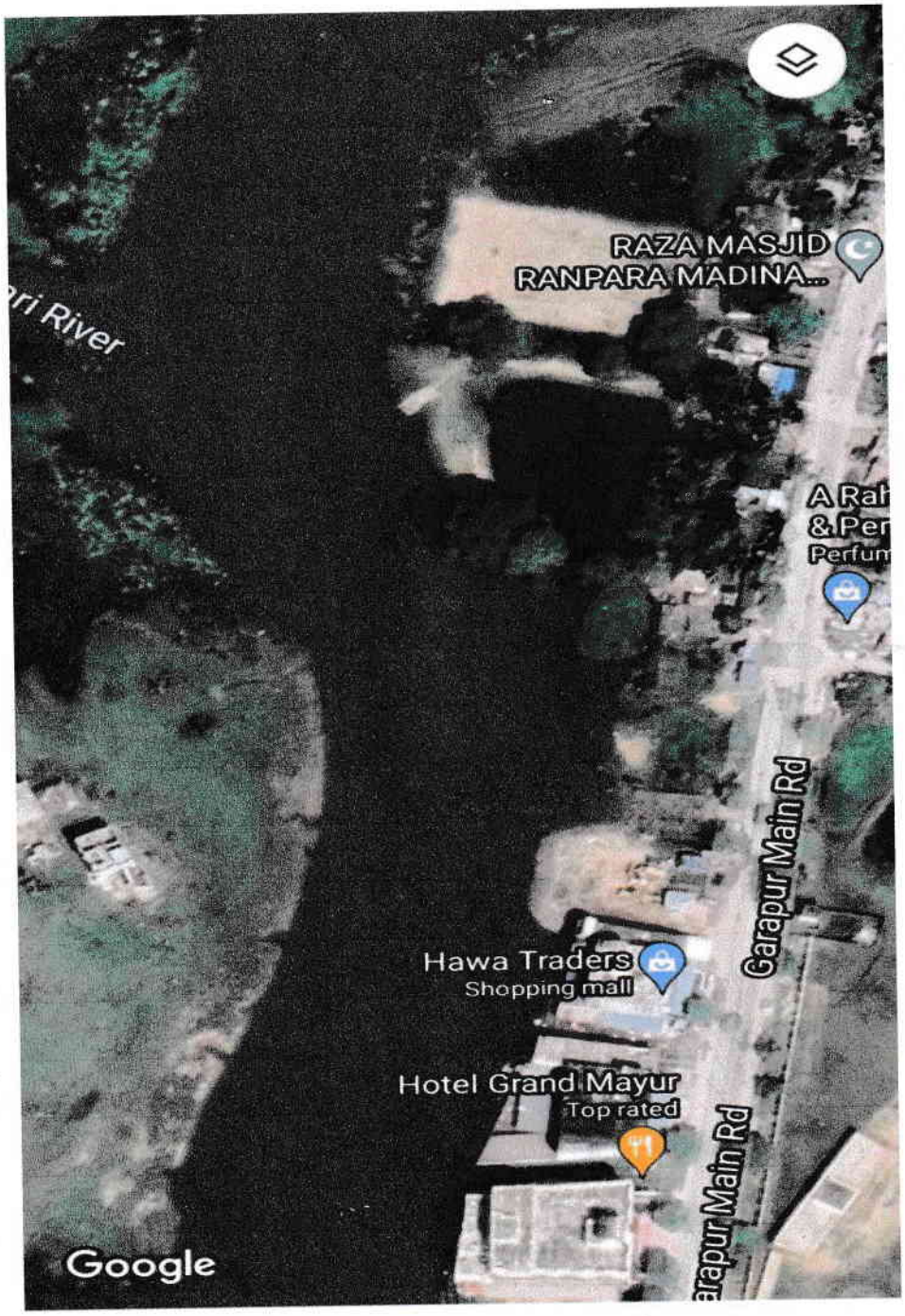
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Annexure 2

T.C attested


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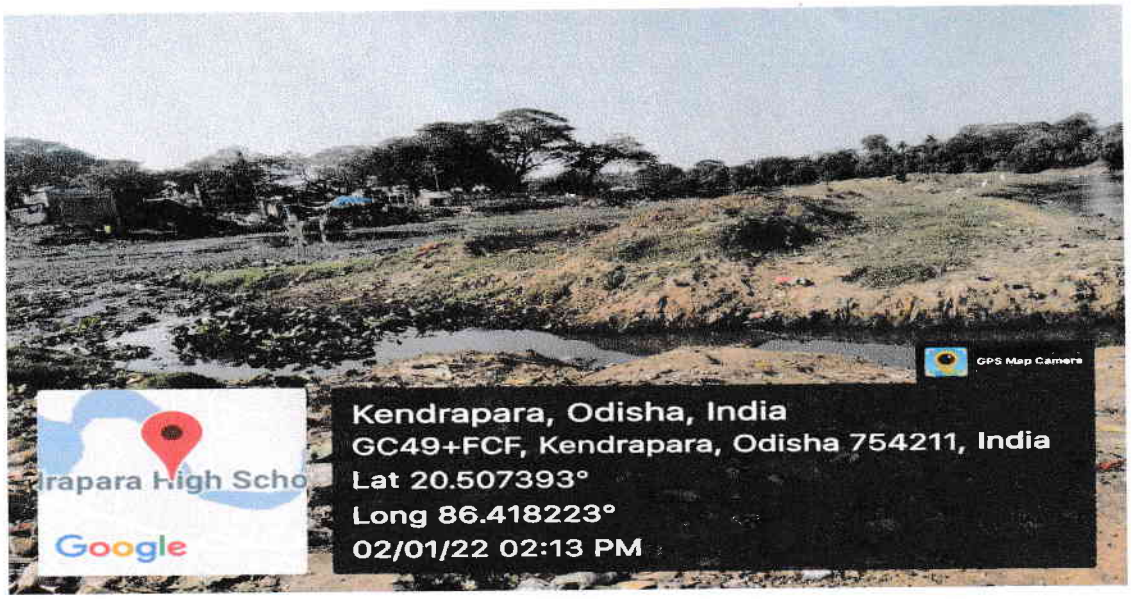
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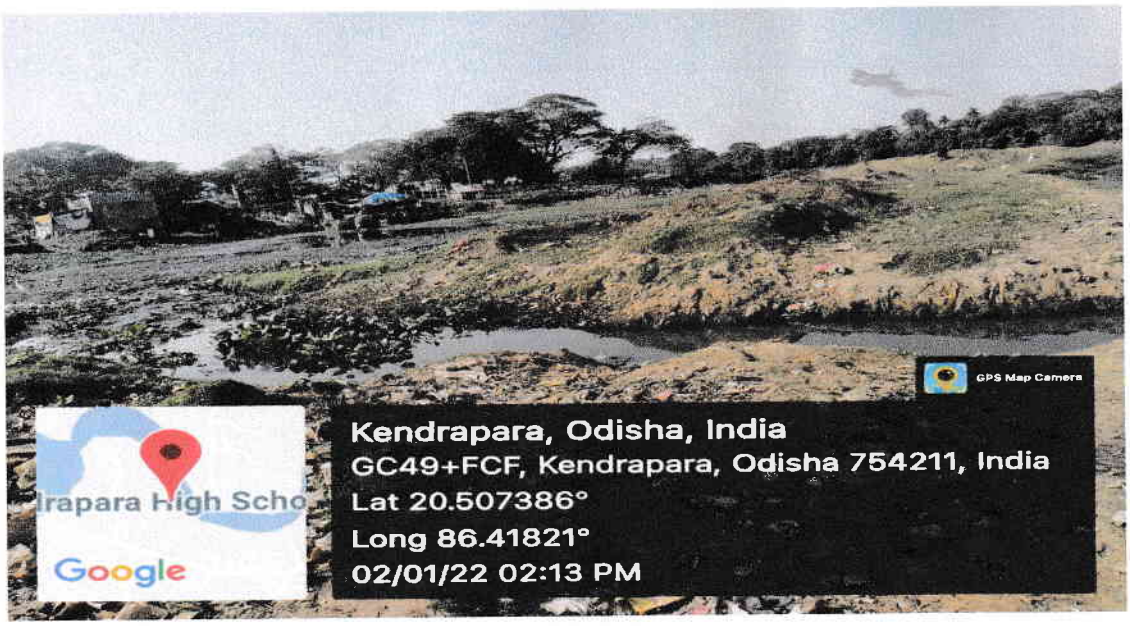
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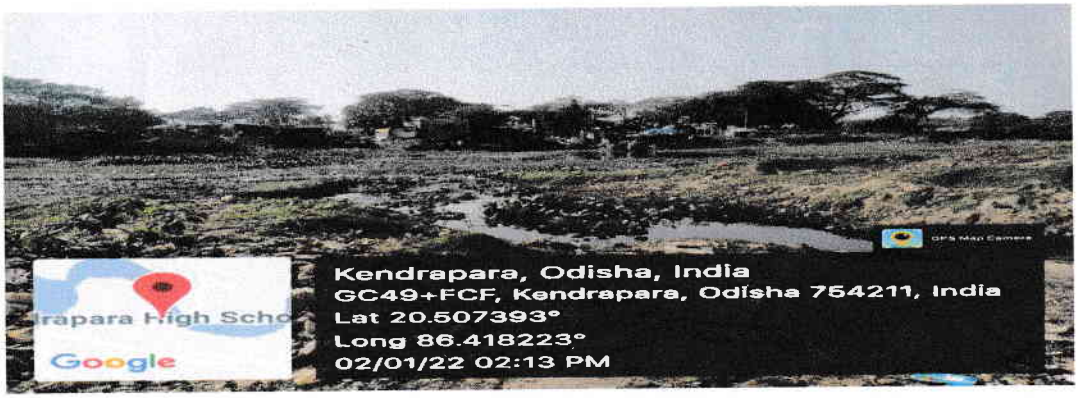
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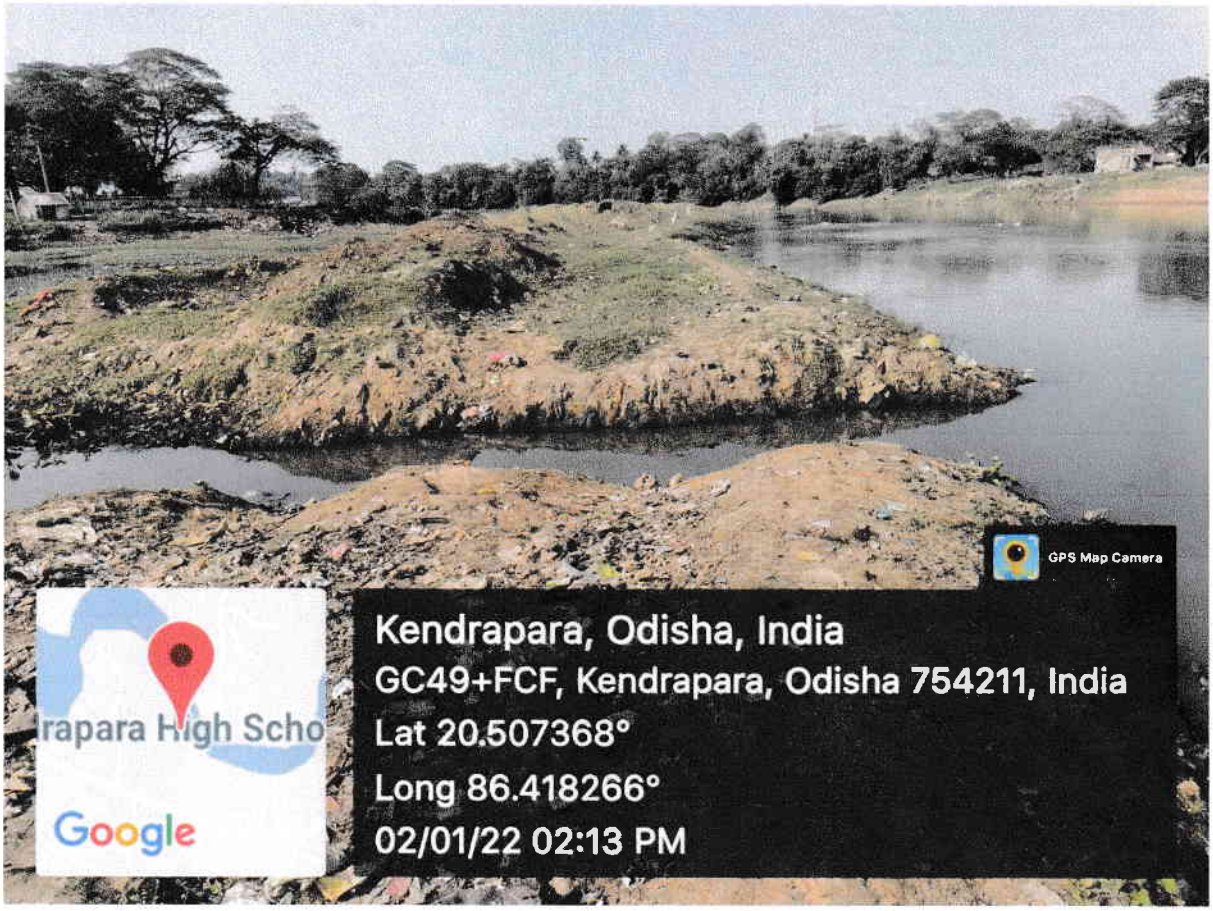
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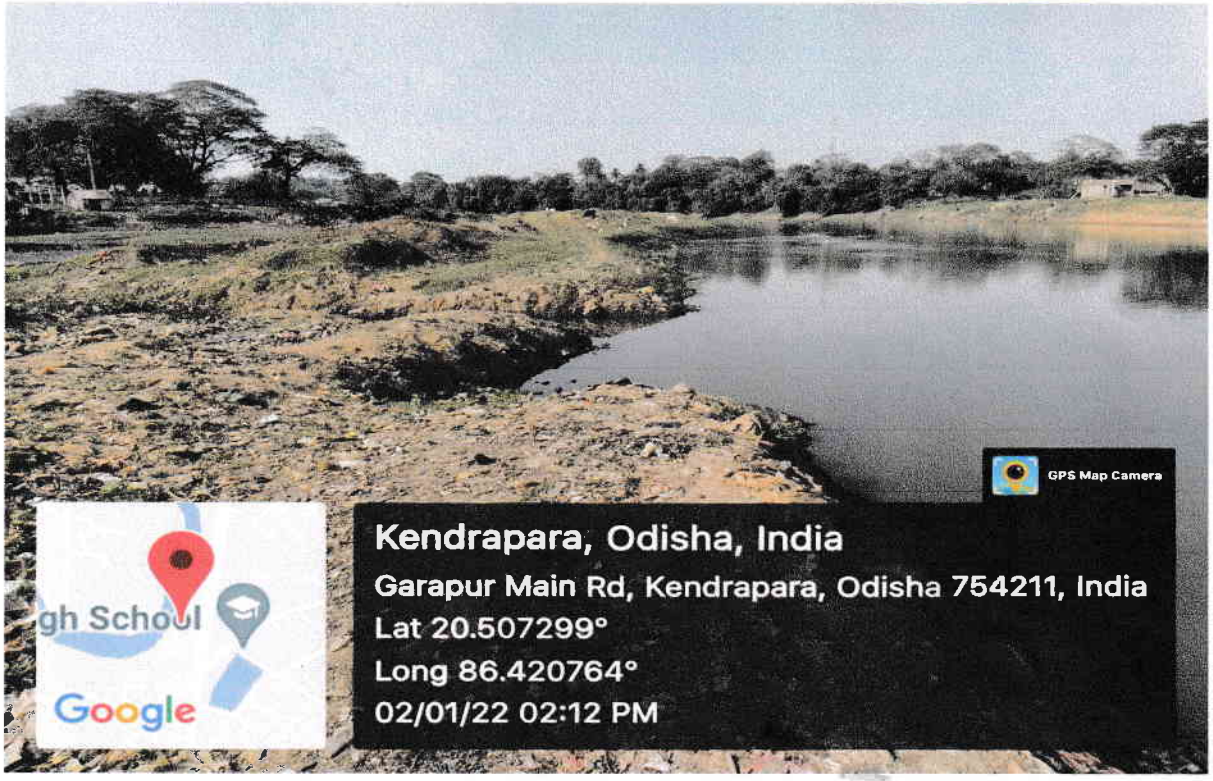

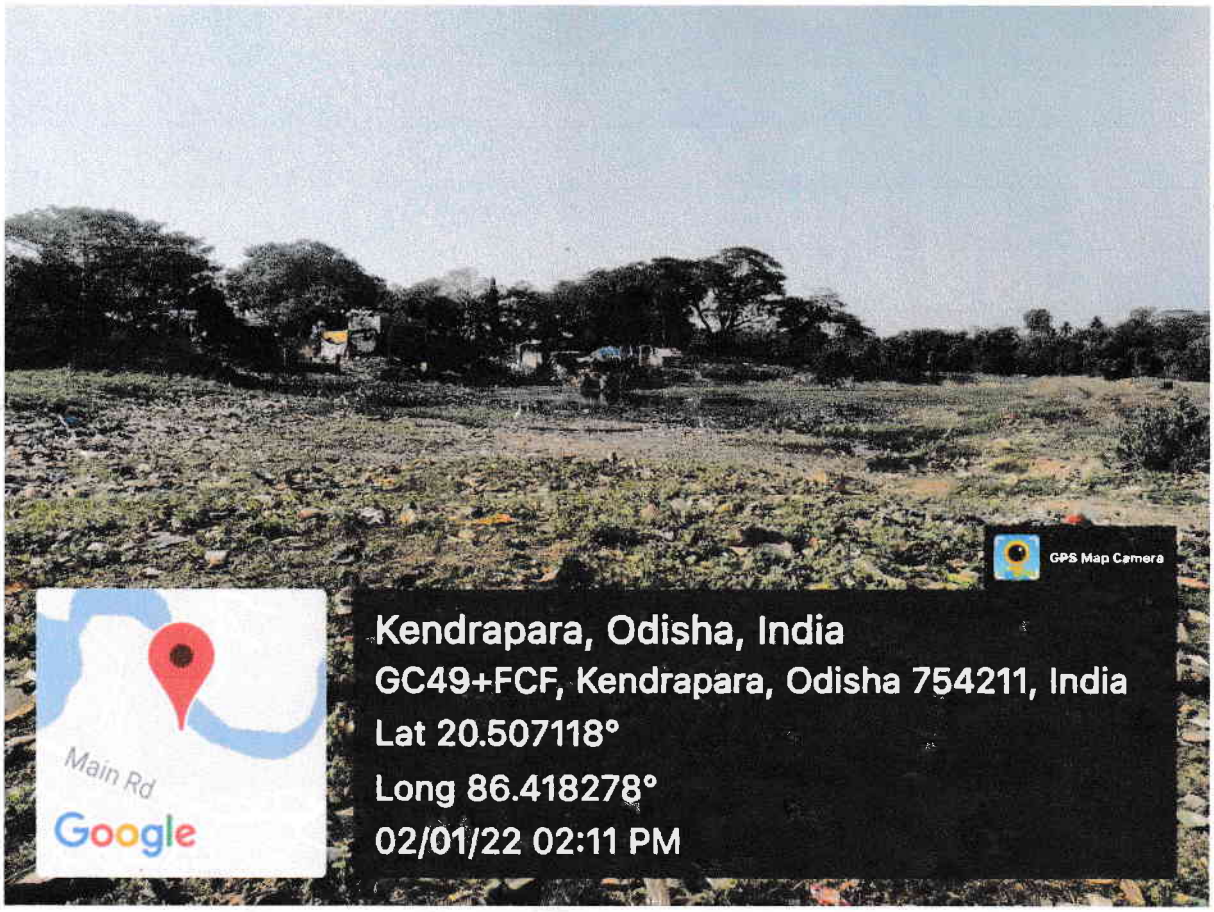

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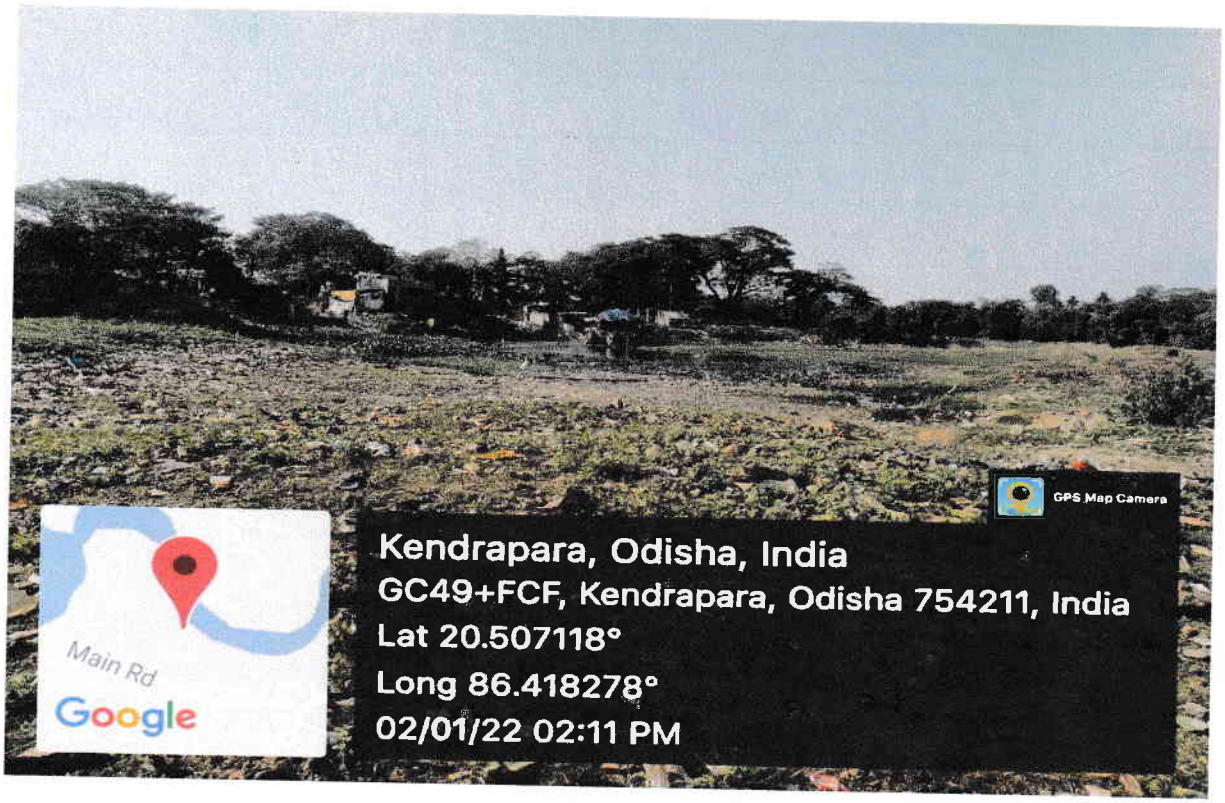
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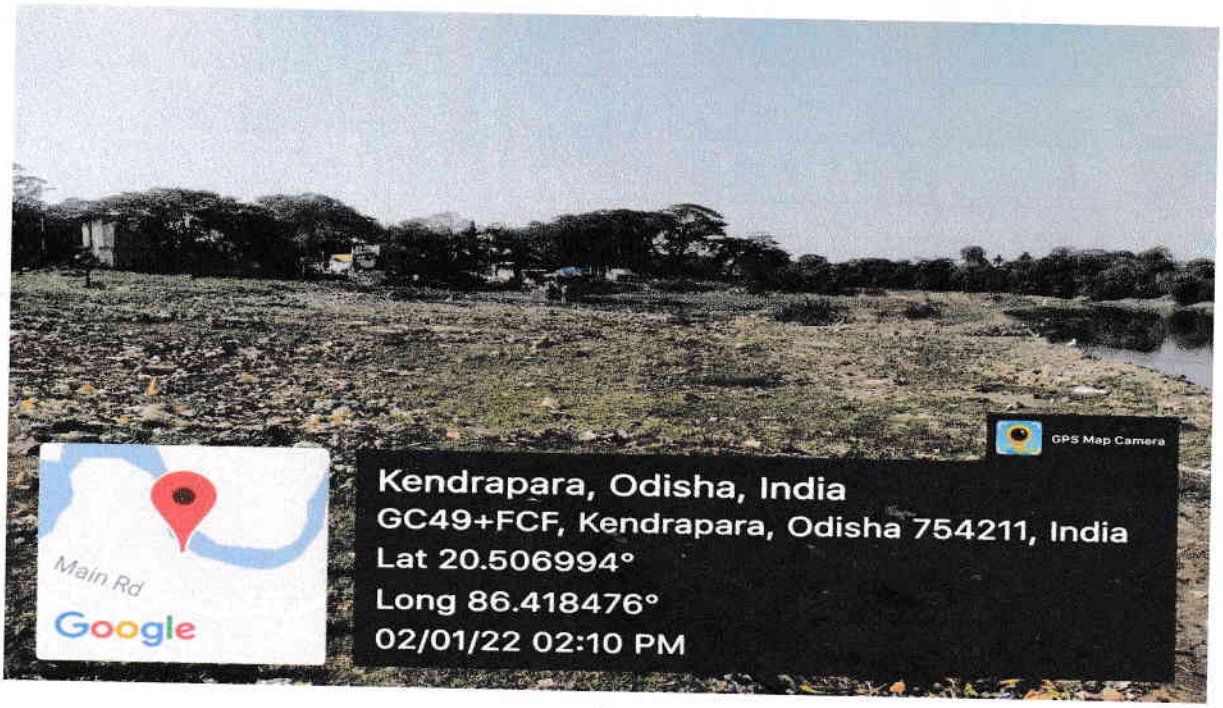
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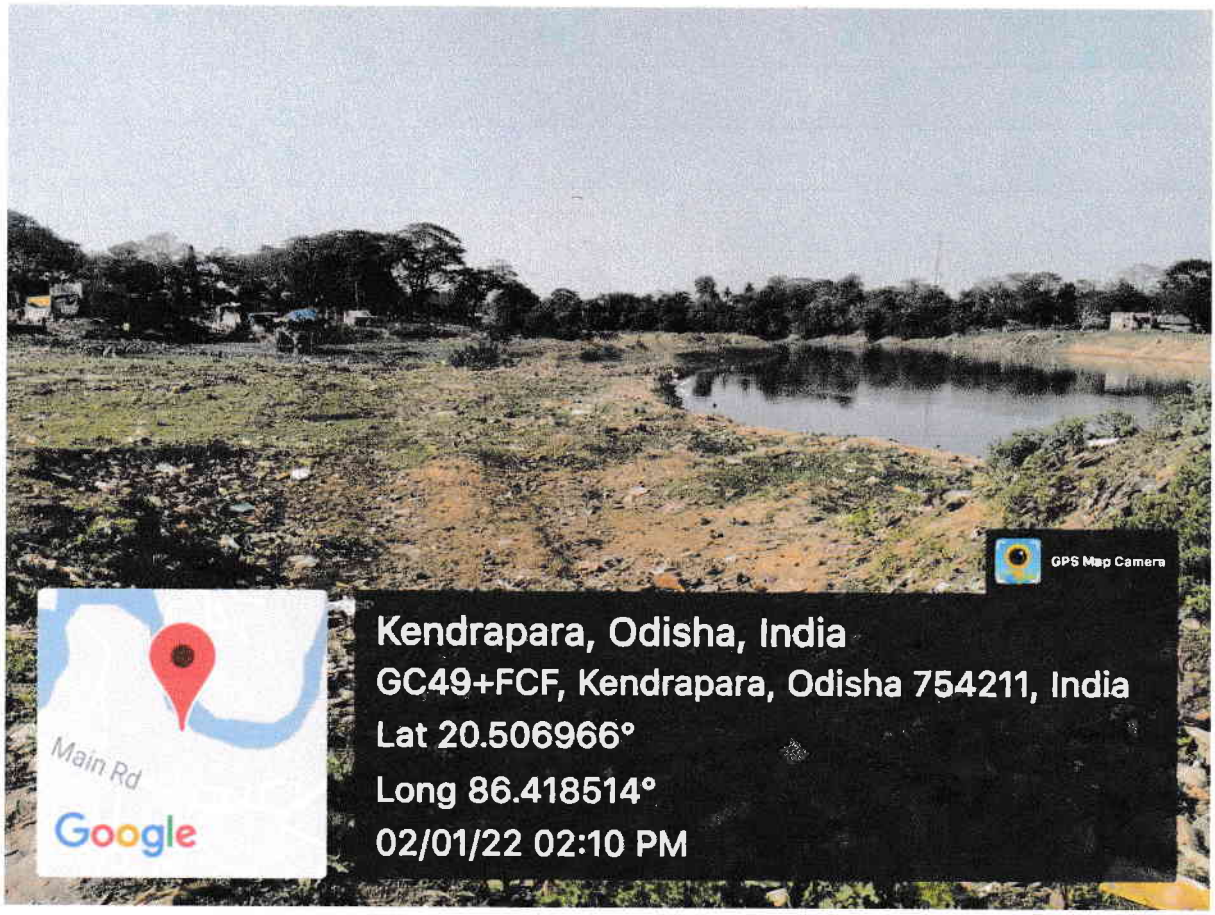
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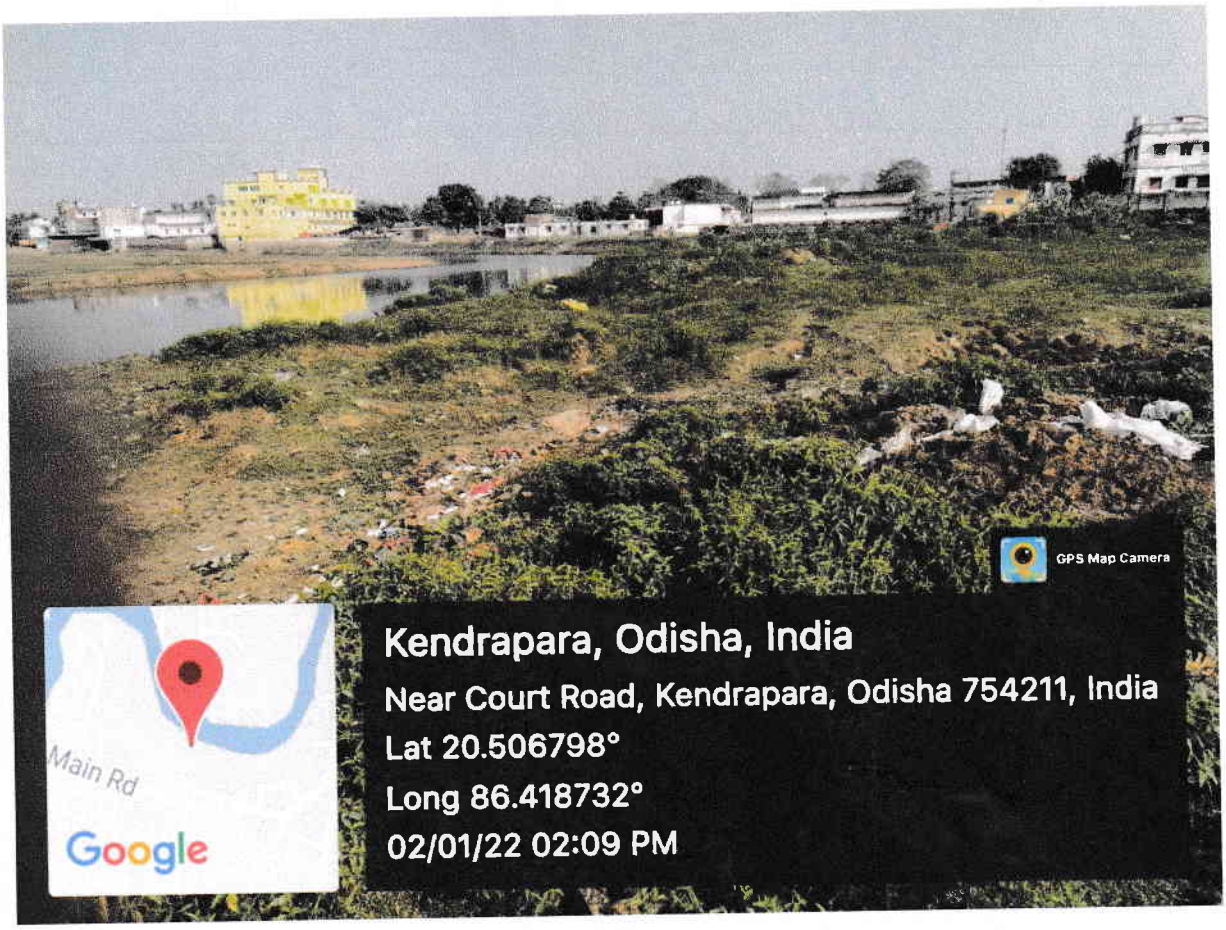
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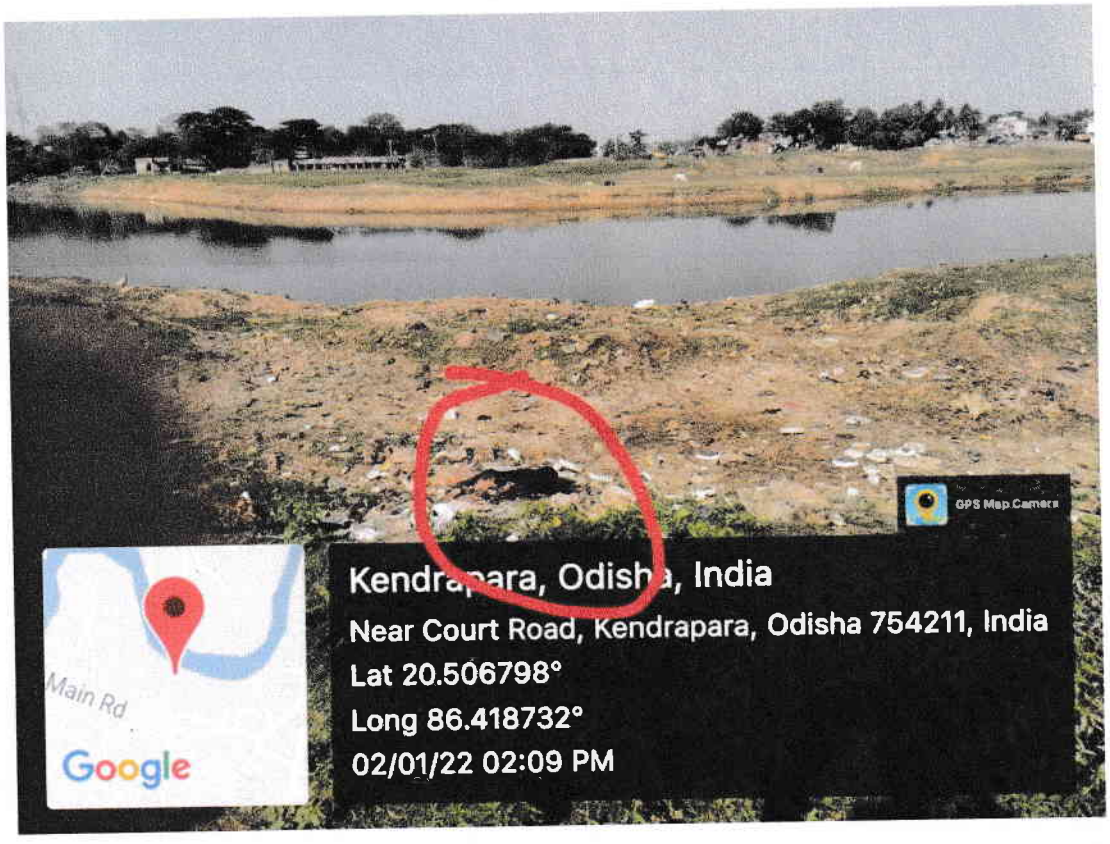
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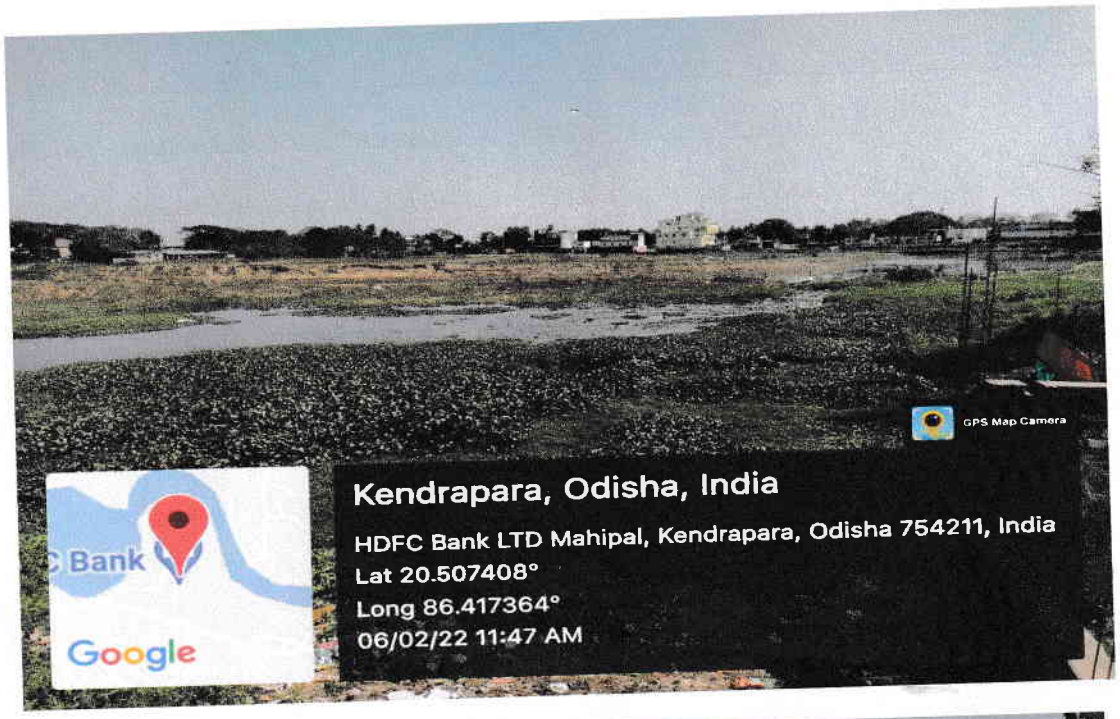
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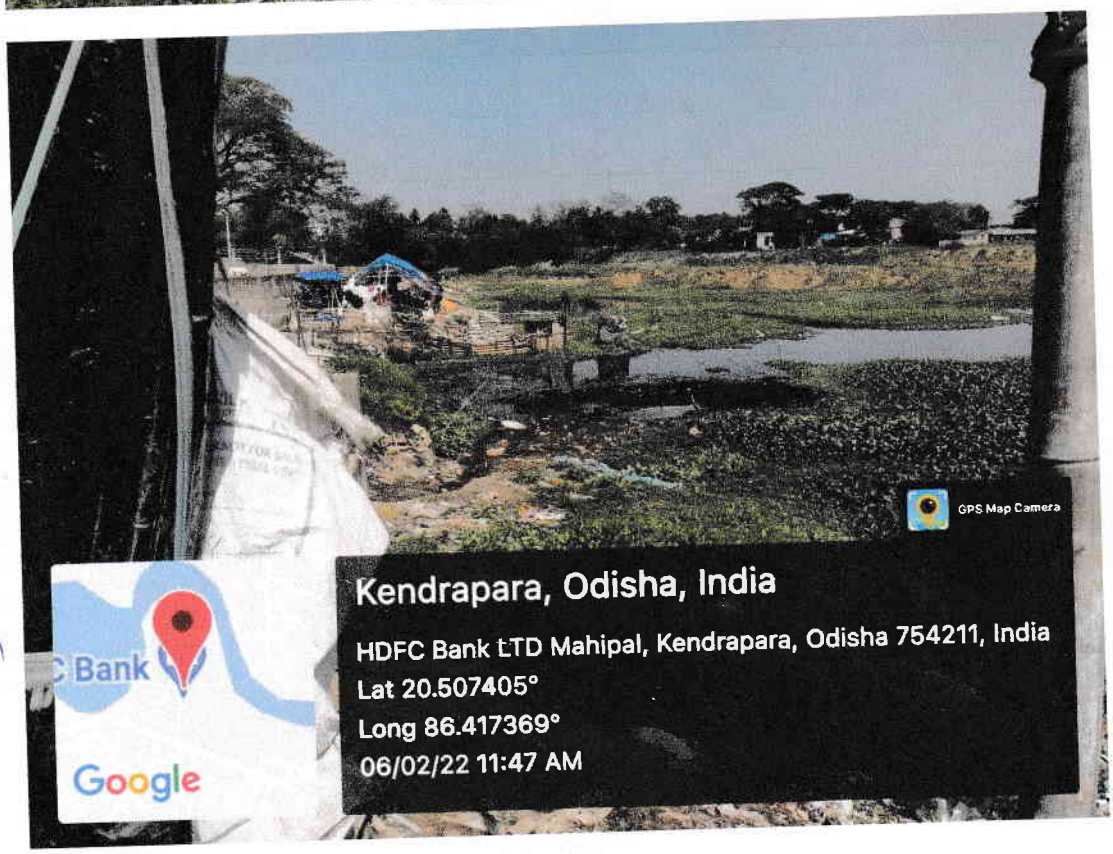
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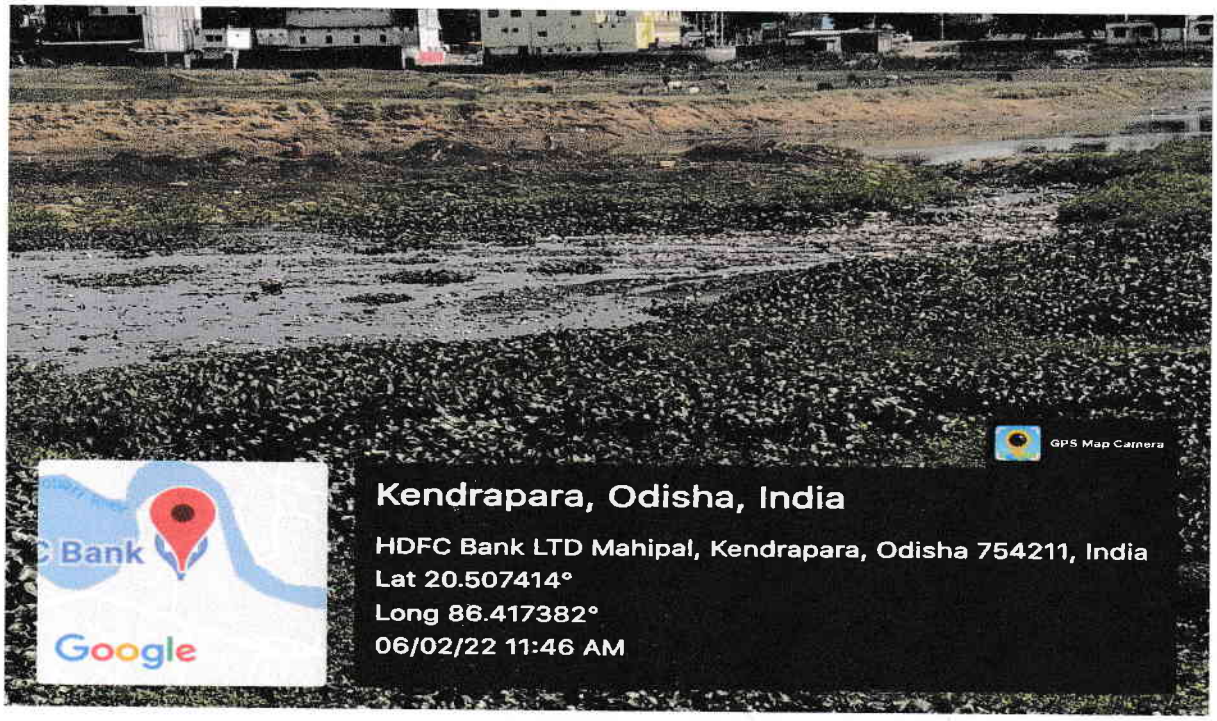
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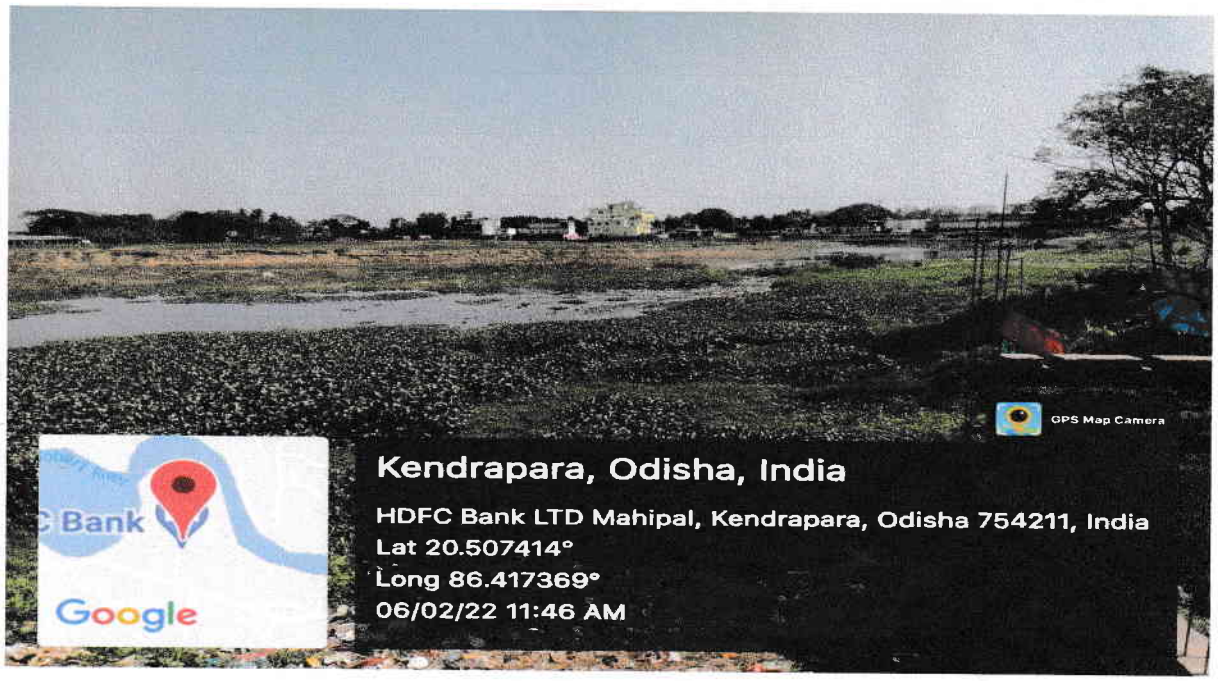
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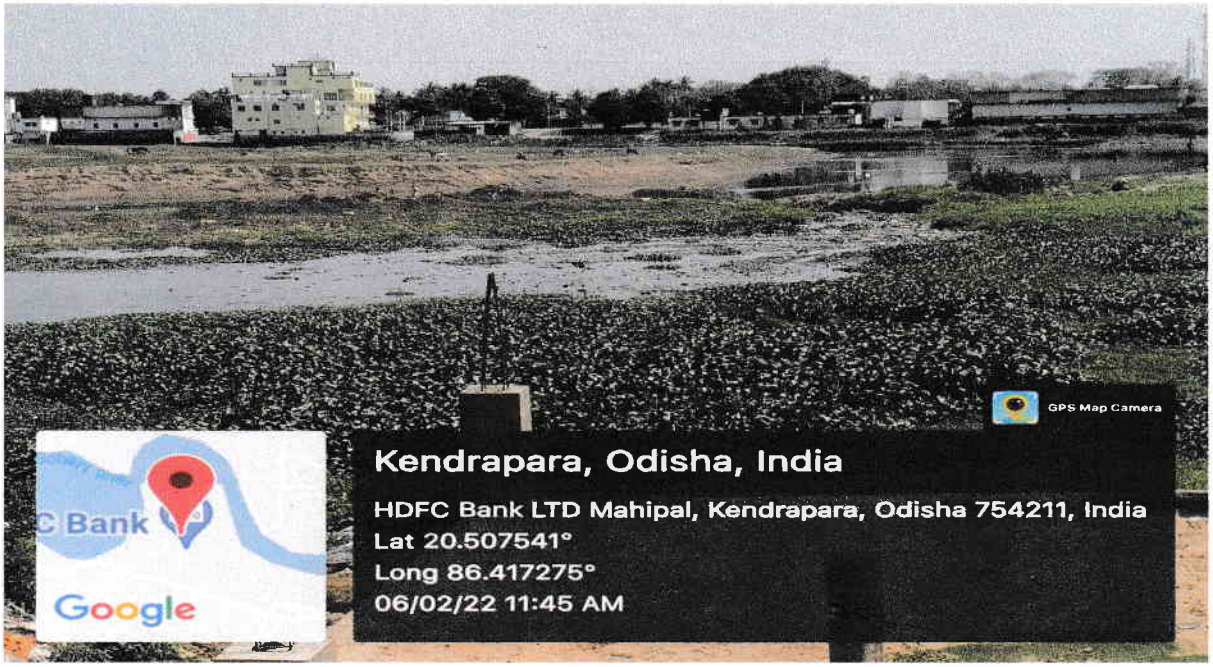
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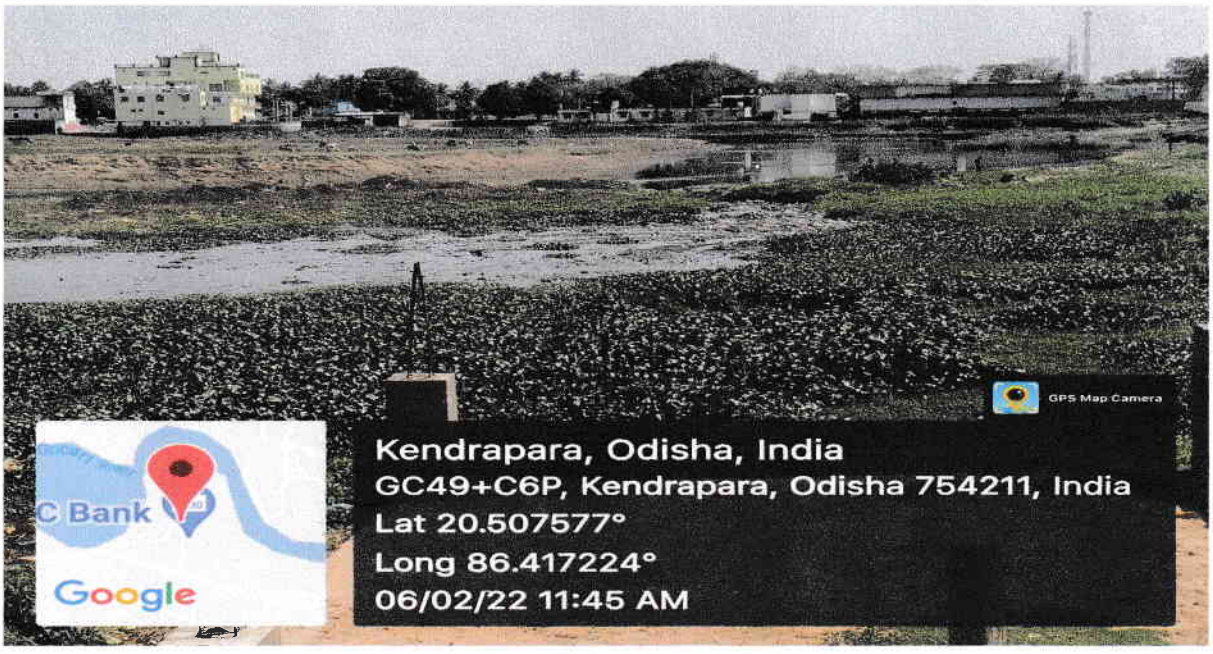
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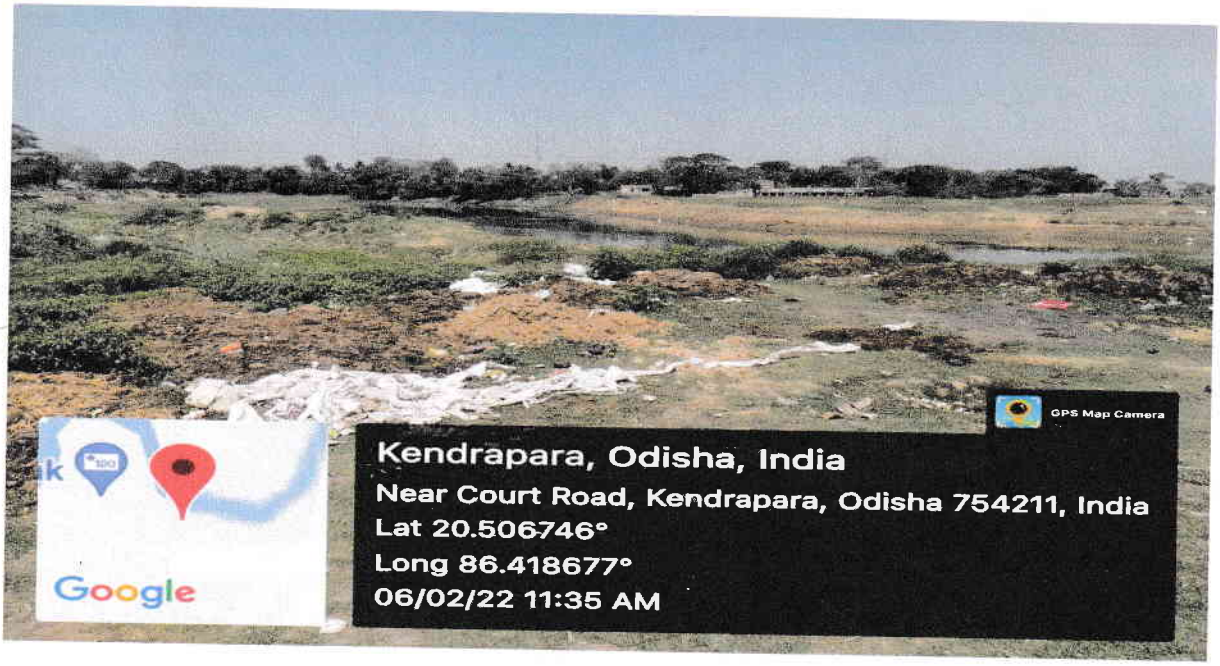
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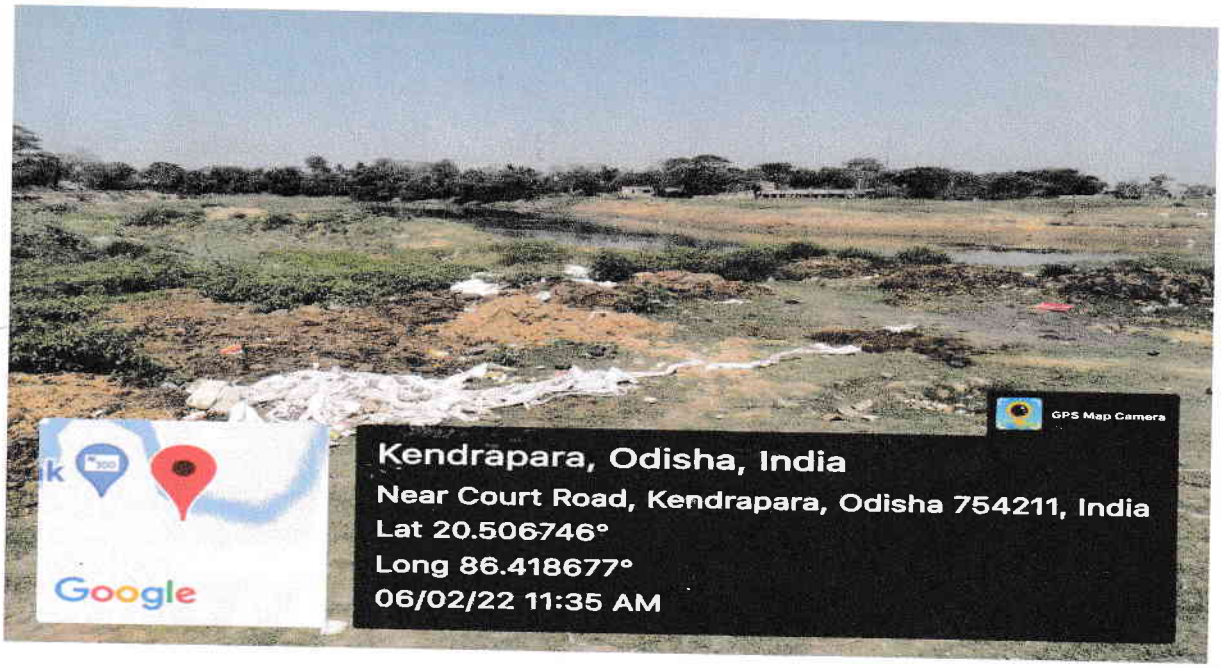
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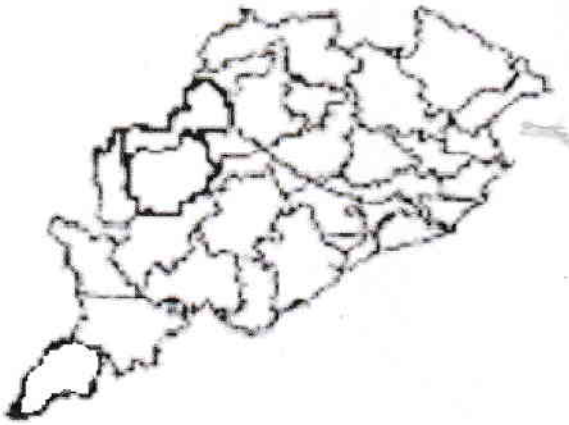
49 Annexure 4

GROUND WATER INFORMATION BOOKLET OF KENDRAPARA DISTRICT, ORISSA



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(ADV)

CENTRAL GROUND WATER BOARD
MINISTRY OF WATER RESOURCE
SOUTH EASTERN REGION, BHUBANESWAR

DISTRICT AT A GLANCE

Sl. No.	Items	Statistics
1	**GENERAL INFORMATION**	
	I. Geographical Area in sq km	2644
	II. Number of Blocks	9
	III. Number of Panchayat	230
	IV. Number of Villages	1540
	V. Population as on 2011 census	1,439,891
	VI. Average Annual Rainfall in mm	1428.61
2	**GEOMORPHOLOGY**	
	1. Major Physiographic Units	i. The saline marshy tract along the coast ii. The very gentle sloping plain
	2. Major Drainages	Mahanadi, Brahmani, Baitarani
3	**LAND USE (Ha)**	
	a. Forest Area	4162
	b. Net Area Sown	142156
4	**MAJOR SOIL TYPE**	Alfisols , Aridisols and Entisols
5	**AREA UNDER PRINCIPAL CROPS**	1. Autmn –3260 Ha 2. Winter – 130398 Ha 3. Summer – 3263 Ha
6	**IRRIGATION BY DIFFERENT SOURCES (Areas and nos of structures)**	
	1. Canals	i. Major and Medium Irrigation Projects-78508 Ha ii. Minor Irrigation Project (Lift)-7020 Ha (Rabi)
	2. Net Irrigated Area in Ha	46725 Ha (Kharif) 31783 Ha (Rabi)

7	**NUMBER OF GROUND WATER MONITORI WELLS OF CGWB (As on 31-3-2011)** 1. Nos of Dug Wells 2. Nos of Piezometers	 16 11
8	**PREDOMINANT GEOLOGICAL FORMATIONS**	Recent Alluviums and sand dunes belonging to Tertiary period.
9	**HYDROGEOLOGY** • Major Water Bearing Formations • Pre-Monsoon Depth to Water Level in 2011 • Post-Monsoon Depth to Water Level in 2011 • Long Term water level terend in 10 yrs in m/yr	Recent Alluvium 1.65mbgl to 5.43mbgl 0.11mbgl to 4.90 mbgl pre-monsoon shows rise of 0-2m in 33.3% of wells , 2-4m rise in 16.7 % wells and fall of 0-2m in 50% of the wells post-monsoon shows rise of 0-2m in 25% of wells , fall of 0-2m in 62.5 % wells
10	**GROUND WATER EXPLORATION BY CGWB (AS ON 31-3-2011)** No of wells drilled (EW,OW,Pz,SH,Total) Depth Range (m) Discharge (lps) Transmissivity (m^2/day)	 EW-7 PZ-12 SL-2 DW-8 **TOTAL**-29 299 - 613 22 - 71 151 -7445
11	**GROUND WATER QUALITY** Presence of Chemical constituents more than permissible limits (e.g. EC,F,As,Fe) Type of Water	 Nitrate, Iron and Fluoride values are higher in limited patches. Normal(P^H 8.1 to8 .54)

12	**DYNAMIC GROUND WATER RESOURCES (2009)** 1. Annual Replenishable Ground water Resources 2. Net Ground Water Draft 3. Projected Demand for domestic and industrial uses up to 2025 4. Stage of Ground Water Development	 16726 HM 8860 HM 1200 HM 52.97%
13	**AWARENESS AND TRAINING ACTIVITY** 1. Mass Awareness Programme organized Date Place No of Participants 2.Water Management Training Programme Organised Date Place No of Participants	 One 12-01-2005 DRDA conference Hall, Kendrapara 150 One 10.01.05 and 11.01.05 DRDA conference Hall, Kendrapara. 50
14	**EFFORTS OF ARTIFICIAL RECHARGE AND RAIN WATER HARVESTING** Projects compiled by CGWB (No and Amount spent) Projects under Technical guidance of CGWB (nos)	 Nil Nil
15	**GROUND WATER CONTROL AND REGULATION** No of Blocks No of Critical Blocks No of Blocks Notified	 Nil Nil Nil
16	**MAJOR GROUND WATER PROBLEMS AND ISSUES**	Ground water Pollution and Water logging

1.0 INTRODUCTION

Kendrapara district is one of the thickly populated coastal districts of Orissa in the eastern part underlain by alluvial deposits, which resulted fertile agricultural land. Agriculture is the mainstay of the people and economy of the district is mainly based on agricultural production. The district has a total geographical area of 2644 sq km. with a total population of 1,439,891. The density population of the district is 545 persons per sq km as per 2011 census. The district is having one sub-division, which is divided into 9 community development blocks. The district as well as the subdivisional headquarter is located at Kendrapara town. Kendrapara district lies between East longitudes 86° 14' and 87°03' and North latitudes 20°21' and 20°47,' falling in survey of India toposheet no. 73L and 73P in 1:2,50,000 scale. It is bounded in north by Bhadrak district, in the north- east by Jajpur district and Cuttack district in the west, in the south by the Jagatsinghpur district and in the east by the Bay of Bengal (Plate-I).

The river Mahanadi, Brahmani and Baitarani along with their distributaries form the drainage system of the district with mostly anastomosing drainage pattern in nature.

The district enjoys irrigation facilities through major, medium, minor and lifts irrigation projects. The major irrigation projects in the district are Delta stage- I and Mahanadi-Chitrapola irrigation system. The Delta stage- I is an old completed project and the Mahanadi-Chitrapola is on going project. During kharif total irrigated area from all source is only 34986 hectares against average net sown area of 142156 hectares in 2003-04. During Rabi season total area irrigated is around 38803 hectares.

The officers of Geological Survey of India have completed systematic geological mapping. The entire district has been covered by systematic hydrogeological survey by the hydrogeologists of Central Ground Water Board during 1990-91, 1995-96 and 2005-06. The district report on "Hydrogeological Frame Work and Ground Water Development Prospects in Kendrapara district, Orissa" was prepared by Sh. P.K.Das, Scientist –D in March 2002.

2.0 RAINFALL AND CLIMATE

The southwest monsoon is the principal source of rainfall in the district. The district is characterized by a tropical monsoon climate having three distinct seasons in a year viz. winter, summer and rainy seasons. The Bay of Bengal, which forms the eastern boundary of the district, plays a vital role in controlling the climate of the district. The normal rainfall of the district is 1501.3 mm. The annual average rainfall in last seven years is 1428.61 mm. About 75% of the total rainfall occurs during the period from June to September. In the period between April and May, 3 to 4 cyclonic rains generally occur in the district that causes a drop in the temperature. The relative humidity varies from 74 to 86 percent during the year. The potential evapotranspiration values vary from 5.67 cm to 31.5 cm.

3.0 GEOMORPHOLOGY AND SOIL TYPES

Physiographically the district can broadly be divided into two distinct units, viz.

i. The saline marshy tract along the coast

ii. The very gently sloping plain

The saline marshy tract forms a long and narrow strip along the coast. The width of this tract varies from 3 to 15 m and is intersected by tidal streams and covered by shrubby vegetation. The gently sloping alluvial plains with the altitudes varying between 10.5 m amsl in the north western part to 2.15 m amsl in the east occurs in the west of the marshy saline tract and form most fertile part of the district. The general slope of the district is towards east and southeast and varies from 5m/km in the west to 1.6 m/km in the eastern part.

The distribution of different soil types in the district depends much on its physiographic and lithologic variations. Based on the physical and chemical characteristics, mode of origin and occurrence, soils of the district may be classified into three groups namely Alfisols, Aridisols and Entisols.

Alfisols: This includes deltaic alluvial soils and this type of soils occupies nearly 90% of the entire district area. The deltaic alluvial soils are generally deficient in phosphate (P_2O_5) and nitrogen (N). Both the total and available potassium are fairly adequate and P^H varies between 6.5 and 7.3.

Aridisols: These are saline and saline alkali soils and occur in small pockets in the north eastern and south eastern corner of the district near coast. These are rich in calcium, magnesium and also consist of half decomposed organic matter.

Entisols: These include coastal sandy soils and occur as narrow elongated ridge along the coastline. The soils are deficient in nitrogen, phosphoric acid and humus, but not in potash and lime.

4.0 GROUND WATER SCENARIO

4.1 Aquifer System:

The aquifer system in the district may be broadly divided into (i) Shallow aquifer and (ii) Deeper aquifers.

(i) Shallow Aquifers:

The thickness of shallow aquifers varies widely due to salinity problem in the district barring a narrow tract occurring along the extreme western part of the district where there is no salinity problem. In the saline hazard areas the thickness of the shallow fresh water bearing zones varies from negligible to a maximum of 95 m. The occurrence of clay horizon at the top surface (from ground level) reduces the thickness of fresh water bearing zones to almost zero level. Normally the thickness of fresh shallow aquifers varies from 15 to 20m or more within the saline hazard tract lying west of Indipur-Kendrapara-Karliopatana section and east of this section the thickness of shallow aquifers generally attains almost negligible thickness except in isolated pockets (in abandoned river/stream channels and sand dunes) where shallow/top fresh water bearing zones extend down to a maximum depth of 10 to 15m with the average thickness of 5 to 6m. The top fresh water bearing zones extends down to 90 or 95m depth in the south-western part of the district.

(ii) Deeper Aquifers:

The occurrence of fresh water bearing deeper aquifers is identified from available borehole data down to a maximum depth of 612m. In the major part of the district the depth of the boreholes are restricted to 300m. Only for a small part in the southwest the information are available down to 600m depth (Barsalar-Garjanga area). The available information indicates that in general the deeper fresh water bearing zones are sand witched between saline water bearing zones. The fresh water bearing zones are composed of sand, silt, clay, gravel and among these materials sand and gravel horizon and mixture of sand and gravel zones prolific fresh water bearing aquifers. The sand grains vary in size from fine to very coarse while gravels are normally fine to medium in size. The distribution of fresh water bearing zones have been divided into different sectors as follows:

Sector-1: Indipur-Chatra-Barimul-Jajang-Patamundai-Namtara-Pegapara:

This sector occupies the north western and also major area of northern part of the district and fresh water bearing zones occurs from 106m (Chatra) to 136m (Patamundai, eastern part) depth with the average depth around 120m below grounds level and extends down to 300m depth, except at Indipur (265m).In the extreme western part of this sector (west of Chatra) ground water is fresh all through.

Sector-2:

This sector occupies the north eastern part of the district and the fresh water bearing zones occurs on an average below 190 m depth and extends down to 300m depth or more.

Sector-3: Patamundai-Gopalpur (Rajnagar) –Basantapur:

This sector occupies the middle portion of the eastern and east central part of the district and fresh water bearing zones occurs below 90 to 100m depth except at Basantapur near coast where fresh zone occurs below 114m depth and fresh zone on an average extends beyond 300m depth. The occurrence of prominent aquifer zones in the eastern part (Gopalpur) extends down to 280m depth while in the west (Patamundai) it is restricted to 230m depth.

Sector-4: Kendrapara-Karliopatana-Marshaghai-Silipur:

This sector occupies the central portion of the western part of the district and the fresh water bearing zones occur below 155m (Kendrapara) to 205m (Silipur) depth and on an average it occurs beyond 180m below ground level and extends down to a maximum depth of 360m (Kendrapara) with the average depth around 300m below ground level. Normally the occurrence of prominent zones is restricted within 250m depth.

Sector-5: Ramachandrapur-Garjanga-Adampur:

This sector occupies the west central portion of the southern part of the district and the fresh water bearing zones occur below 60m depth at Ramachandrapur in the south and below 80m depth at Adampur in north and in between at Garjanga fresh zones occurs below 66m depth.

Sector-6: Masakani-Dodhipur-Dasorajpur:

This sector occupies the part of east central and eastern portion of the district and it is reported that in this sector saline water bearing zones extends down to 300m depth.

Sector-7: Bijayanagar-Rajghar-Gobndpur-Patia-Babur:

This sector occupies the northern portion of the southeastern part of the district. Scanty data of PHED tube wells indicate that fresh water bearing zones with chloride concentration less than 1000mg/l occurs in between 200m depth and 250m depth range.

Sector-8: Barsalar-Karliopatana-Balada:

This sector occupies the southwestern corner of the district. In this sector a small pocket occurs in extreme southwest corner (north of Khandatari) of the district do not suffer from any salinity problem and the ground water is fresh all through. In Basalar-Karliopatana at deeper depth saline and fresh water bearing zones occur alternatively.

4.2 Aquifer Parameters

The cumulative thickness of the aquifers that have been tapped by the deep tube wells varies from 20 to 69m with the average value ranging from 30 to 40m. The yield of these tube wells varies from 22 to 71 liters per second. On an average the yield varies between 30 to 40 lps. The Transmissivity value range from 110 to 7445 m^2/day with the average value ranging from 1000 to 1500 m^2/day. The storage coefficient values vary from 1.6×10^{-4} to 8.8×10^{-5} which indicates that the deeper aquifers are under confined conditions.

4.3 Behavior of Water Level

Depth to Water Level (Pre-monsoon and post-monsoon)

The depth to water level has been measured from the National Hydrograph Stations situated in different blocks. The pre-monsoon (2011) water level data varies from 1.65mbgl to 5.43mbgl. The shallow water level was measured from Marshaghai and the deepest was at Patamundai. The depth to water level map (pre-monsoon 2011) is displayed in plate-II.

The post-monsoon depth to water level in (2011) varies from 0.11mbgl to 4.90 mbgl. The deepest water level was at Kendrapara and shallowest was at Chatua. Plate-III represents depth to water level in post-monsoon 2011.

Seasonal Fluctuation

The seasonal water level fluctuation in 2006-07 varies from 0.78m to 2.47m.

Long Term Water Level Trend in last 10 year

The long term water level trend (10 years) in pre-monsoon shows rise of 0-2m in 33.3% of wells, 2-4m rise in 16.7 % wells and fall of 0-2m in 50% of the wells in the district.

The long term water level trend (10 years) in post-monsoon shows rise of 0-2m in 25% of wells, fall of 0-2m in 62.5 % wells in the district.

4.4 Ground Water Exploration

Exploratory drilling has been taken up by the Central Ground Water Board in Kendrapara district with the objective to delineate deeper fresh water bearing zones and their yield potentiality. Till March 2011, 29 nos of bore wells were drilled out of which 7 were exploratory wells, 12 Piezometers, 2 slim holes and 8 deposit wells were drilled in the district under normal Ground Water exploration programme and Accelerated Exploration drilling Programme. The depth range of these wells varies from 299m to 613m below ground level. The yield varies from 22 lps to 71 lps. The Transmissivity varies from 151 m^2/day to 7445 m^2/day.

The hydrogeology of the district is presented in the plate-IV.

4.5 Ground Water Resources:

The groundwater resources of the district have been assessed adopting the methodology recommended by the ground water Estimation Committee (1997), constituted by Govt. of India. The task was jointly carried out by the central Ground Water Board and Ground Water Survey and Investigation, Department of Water Resources, Govt. of Orissa. The block wise computation of ground water resources in the district has been presented in the table 4.5. The annual replenishable ground water resources in the district are computed as 16726 HM. The ground water draft for irrigation is through dug wells and shallow tube wells.

So far ground water development in the district has been meager and all the blocks fall under the safe category. The stage of ground water development varies from 38.29% to 67.95% in different blocks. The overall stage of ground water development of the district is 52.97%. The ground water budget of the district is presented in the plate no. V.

Table 4.5: STAGE OF GROUND WATER DEVELOPMENT OF KENDRAPARA DISTRICT (BLOCK WISE) AS ON 31ST MARCH 2009

(In ha m)

Sl No	Assessment Unit/Block	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for irrigation	Existing Gross Ground Water Draft for domestic and industrial water supply	Existing Gross Ground Water Draft for all uses	Allocation for domestic and industrial requirement supply upto next 25 years	Net Ground Water availability for future irrigation development	Stage of Ground Water Development (%)
1	Aul	764.00	297.00	44.00	341.00	423.00	44.63	44.63
2	Derabish	4096.00	1642.00	133.52	1775.00	174.00	43.33	43.33
3	Garadpur	3700.00	2280.00	234.00	2514.00	306.00	67.95	67.95
4	Mahakalpada	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Marshaghai	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Kendrapara	2367.00	1036.00	89.83	1125.00	104.00	47.53	47.53
7	Rajkanika	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Rajnagar	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Pattamundai	5799.00	2946.00	158.80	3105.00	193.00	53.54	53.54
District Total		16726.00	8201.00	660.00	8860.00	1200.00	7326.00	52.97

* FRESH WATER UNCONFINED AQUIFERS EITHER ABSENT OR AVAILABLE IN POCKETS

4.6 Ground Water Quality

The chemical quality of ground water of the district has been assessed on the basis of ground water samples collected during ground water monitoring, hydrogeological

surveys and ground water exploration. The range of different chemical constituents in shallow and deeper aquifers is as follows (Table- 4.6):

Table- 4.6: RANGE OF CHEMICAL CONSTITUENTS IN DIFERRENT AQUIFERS

Sl No	Constituents	Shallow Aquifer Range	Deeper Aquifer Range
1	P^H	**8.10 – 8.54**	7.46-8.85
2	Specific Conductance (µs/cm at 25^0 C)	**329-1219**	672-1023
3	Sodium Absorption Ratio	0.41-4.64	0.45-2.44
4	Calcium (mg/litre)	18-85	11-78
5	Magnesium (mg/litre)	5.6-103	0.6-35.3
6	Sodium (mg/litre)	12-276	14-93
7	Chloride (mg/litre)	**21-113**	60.4-149
8	Fluoride (mg/litre)	0.00-6.94	0.35-0.36
9	Nitrate (mg/litre)	**0.2-110**	2.3
10	Carbonate (mg/litre)	Nil-38	15-42
11	Iron (mg/litre)	**0.08-13**	-

The above table infers that the shallow ground water in the district is alkaline in nature and is suitable for dinking purpose except in some local pockets. The higher fluoride concentration has been found at Nikari and Rajgharh. The high iron concentration mg/lit has been noted from Gogua, Rajgharh and Chatua. The high nitrate concentration of 110 mg/lit has been found at Kendraopara, which may be due to increasing urbanization. It has been found out that the groundwater falls in low alkaline and medium to high salinity classes i.e. C_2S_1 and C_3S_1 class of U.S. salinity classification. The C_2S_1 type of water is suited for most types of crops while C_3S_1 type may be used for salt tolerant crops.

The deeper ground water is also alkaline in nature and no pollutants like nitrate and fluoride have been found beyond permissible limit, so suitable for domestic purpose. So far as U.S. salinity laboratory classification is concerned, the deeper

The suggested cropping pattern and expected command area of the above structure are given below in the table-4.7 (B):

Table-4.7 (B): SUGGESTED CROPPING PATTERN

Type of Structure	Suggested Cropping Pattern/Area (ha)		
	Kharif	**Rabi-1**	**Rabi-2**
Dug well with pump set	Paddy-2	Wheat-0.2 Ground nut-1.0	Ground nut-0.8
Filter point tube well	Paddy-4	Potato-1.4 Wheat-1.0	Pulses-1.6
Shallow tube well	Paddy-12	Potato-2.0 Ground nut-2.0 Vegetable-2.0 Wheat-2.0	Paddy-2.0 Ground nut-2.0
Medium tube well	Paddy-20	Potato-3.0 Ground nut-3.0 Vegetable-3.0 Wheat-3.0	Paddy-2.0 Pulses-4.0 Ground nut-2.0
Deep tube well	Paddy-20	-do-	-do-

The areas feasible for different type of ground water structures (Plate-VI) are stated below:

Dug Wells: The dug wells are feasible in the western part of the district covering Derabish, Patkura and parts of Kendrapara blocks. Centrifugal pumps of 1 to 1.5 H.P. may be installed in the dug ells. The distance between any two energized dug wells should be kept at least 150m to avoid interference.

ground water of the district falls in C3S1 (low alkaline and high salinity class), which is suitable for salt tolerant crops.

5.0 GROUND WATER MANAGEMENT STRATEGY

5.1 Ground water development:

The groundwater development possibilities of the entire district have been described on the basis of hydrogeological condition of the area. The Ground water development in the district is mainly through dug wells and tube wells, which include filter point, shallow, medium deep and deep tube wells. The ground water is mainly used for drinking and irrigation purposes. The stage of ground water development in the district is low. So far as 52.97% of its resources has been exploited. Hence a strategy for detailed ground water development is required. Based on hydrogeological conditions of the district feasibility of ground water structures and their yield prospects has been indicated in the table: 5.1 (A) & presented in plate- VI.

Table-5.1 (A): FEASIBILITY OF GROUND WATER STRUCTURES

Type of Structure	Specifications of Structures	Yield prospects
Dug wells fitted with pumps	8 to 10m deep, dia- 4m	45-50 m^3/day
Filter point tube wells	15 to 25m deep, dia-10cm*5cm	Upto 5 lps
Shallow tube wells	Upto 50 m deep, dia-15cm	Upto 15 lps
Medium deep tube wells	Upto 150m deep in non-saline areas, maximum upto 80m deep in saline areas, 25cm*20cm dia	30 - 50 lps
Deep tube wells	Upto 300m deep, Dia 25*20cm	20-50 lps

5.2 Water Conservation and Artificial Recharge:

As the stage of ground water development is low and there is no report of large-scale depletion of water levels, at present the artificial recharge is not required for the district.

However in the salt-water infested areas, which contribute more than 60 % of the district, suitable rain water harvesting is necessary. The fresh water can be collected in large ponds, abandoned channels and Ox-Bow lakes and can be used for irrigation of Ravi crop. Creek irrigation is another innovative technique by which the fresh water of the tidal channels can be conserved and used for irrigational purpose during Ravi season. The fresh water of the river is allowed to enter the creek system by means of sluice system in full and/or new moon days and can be used for irrigation. This is repeated as per the need and hence the creek system can work as a canal system.

6.0 GROUND WATER RELATED ISSUES AND PROBLEMS

Ground Water Problems: The ground water problems include water logged area, polluted area.

Water Logged Area: The water logging phenomenon occurs in the western part of the district seasonally covering approximately 350 sq km area, though the major part of the district enjoys surface irrigation facility through Delta stage-1 project for a long time.

Polluted area: The chemical analysis results of water samples from pheratic zones indicate that pollutants like nitrate, chloride, fluoride etc. occurs beyond permissible limit in some isolate local pockets.

Filter Point Wells: These structures are feasible in the western part covering Derabish, Patkura, and parts of Kendrapara blocks. These wells are very successful on the recent flood plain deposits occurring along the banks of river and stream and also on the bank of moribund channels of rivers or streams and within the dried up stream courses. 2 H.P. ejecto (jet) or centrifugal pumps may be fitted depending on the designing of the wells. Centrifugal pumps may be used in the low lying areas where water levels are very shallow and draw down is less. But where pumping water level goes beyond 7 or 8m below ground level, the installation of ejecto pumps is advisable. The distance between any two energized dug wells should be kept at least 150m to avoid interference.

Shallow Tube Wells: The shallow tube wells are feasible in the western part of Patkura and Derabiish blockls. Submersible pumps of 3 H.P. may be installed. The distance between any two structures should preferably at least 300m.

Medium Deep Tube Wells: The medium deep tube wells are feasible in the western part of Garadpur and Derabiish blockls. Normally the deeper depth (>100m) are feasible in the extreme south western part of Derabish and Garadpur blocks, while in other parts the depths may be restricted to 70 to 80 m due to salinity problem. The distance between any two structures should preferably at least 500m.

Deep Tube Wells: The deep tube wells having the depth range 200 to 300m are feasible in entire district except in few isolated patches to tap deep fresh water bearing zones. These tube wells can run for 10 hours in a day. The distance between any two structures should preferably at least 500m.

4. Proper care should be taken to avoid over exploitation, which may disturb the hydro- chemical balance of fresh and saline water leading to contamination of saline water ingress.
5. Clustering of tube wells should be avoided particularly near seacoast.
6. The scope of conjunctive use of surface and ground water may also be studied in the command area of delta stage-1 irrigation project particularly in the western part of the district to minimize seasonal water logging problem.
7. Since vast tract of the district is saline infested and beyond the reach of canal network, suitable creek irrigation projects can be taken up to facilitate irrigation for the Ravi crop.
8. The people participation is essential for large-scale development of ground water. Financial institutions and bankers should extent necessary co-operation to farmers. GRIDCO and rural electrification corporation should also take steps for energisation of wells to ensure optimum utilization of ground water resources

(ADJ)

7.0 AWARENESS AND TRAINING ACTIVITIES

Mass Awareness and Water Management Training Programme by CGWB:

The programs were organized on 10th, 11th and 12th January 2005 at DRDA conference hall, Kendrapara.. More than 150 persons including farmers, Block Development Offices, District Level Officers/officials have participated in the programme. Deliberations on ground water development protection and conservation were held among participants and CGWB scientists. Different posters were displayed for conservation of ground water , ground water pollution and its ill effects and slogans protecting this valuable source. The programs have received high appreciation and were widely covered by press as well as electronic media.

8.0 AREAS NOTIFIED BY CGWA

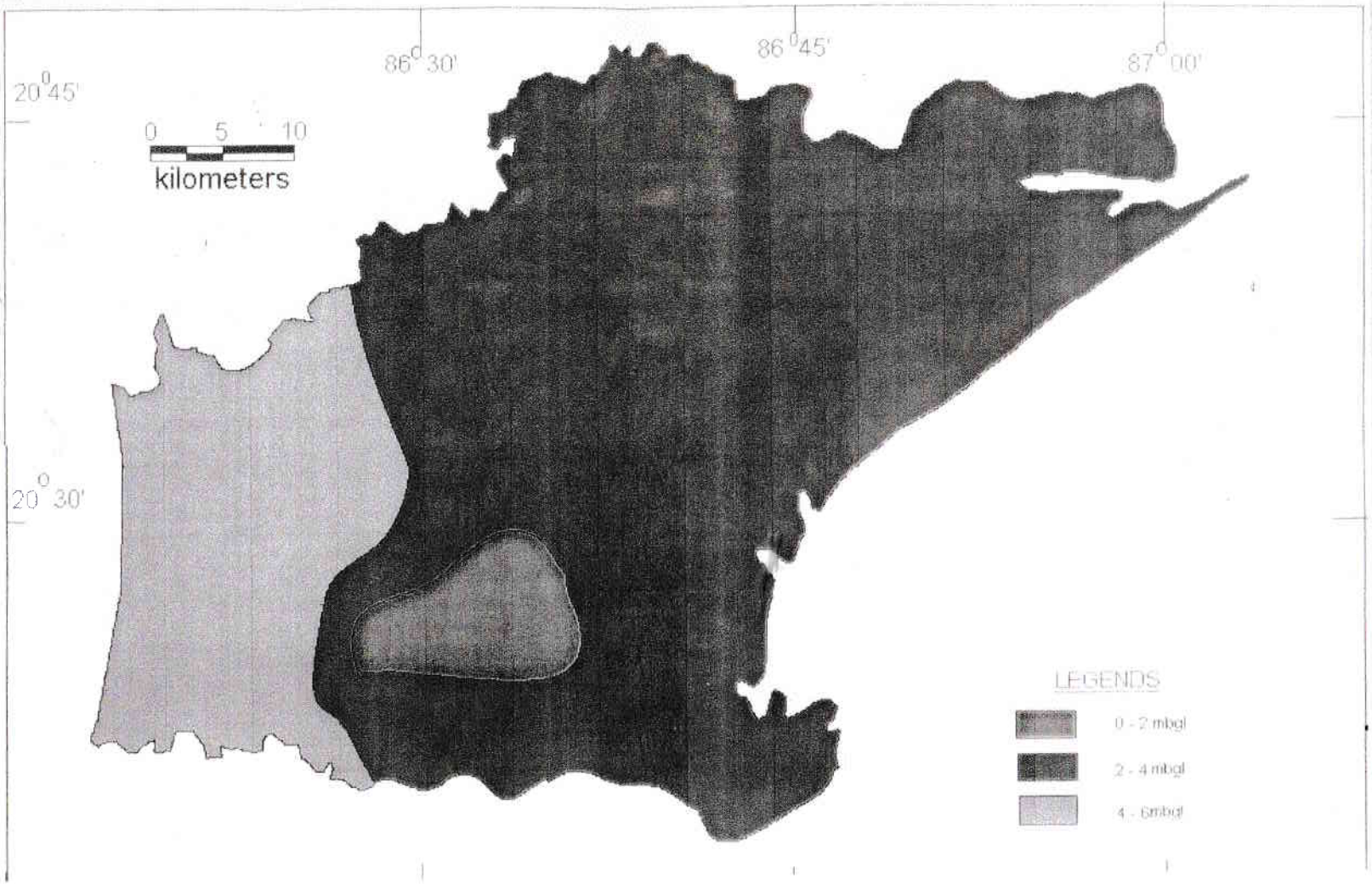
The stage of ground water development is well within safe category and there is no over exploitation and major threat of Ground water pollution and Depletion. Hence no area has been notified by CGWA.

9.0 RECOMMENDATIONS

1. The development of ground water on large scale requires block as well as Gram panchayat wise large scale detailed hydrogeological maps.
2. Intensive hydrogeological surveys and exploratory drilling aided by remote sensing and geophysical investigation may be taken up jointly by the state and central govt. agencies.
3. As the entire district suffers from salinity problem it is essential to precisely identify the fresh water aquifers through borehole logging to avoid failure of tube wells in saline hazard tract. Cement sealing should also invariably be done precisely to seal off the saline aquifers

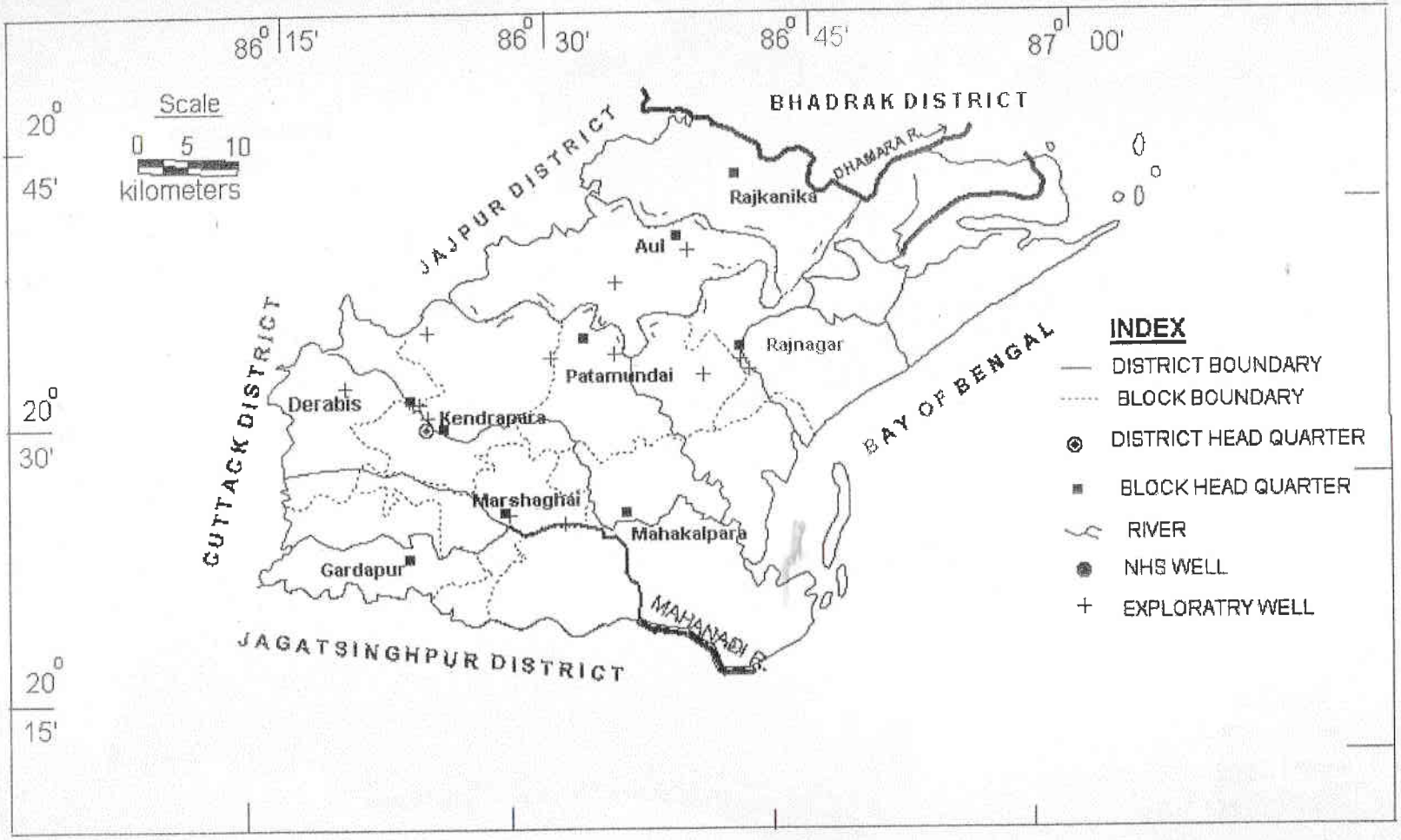
POST-MONSOON DEPTH TO WATER LEVEL IN 2006
KENDRAPARA DISTRICT, ORISSA

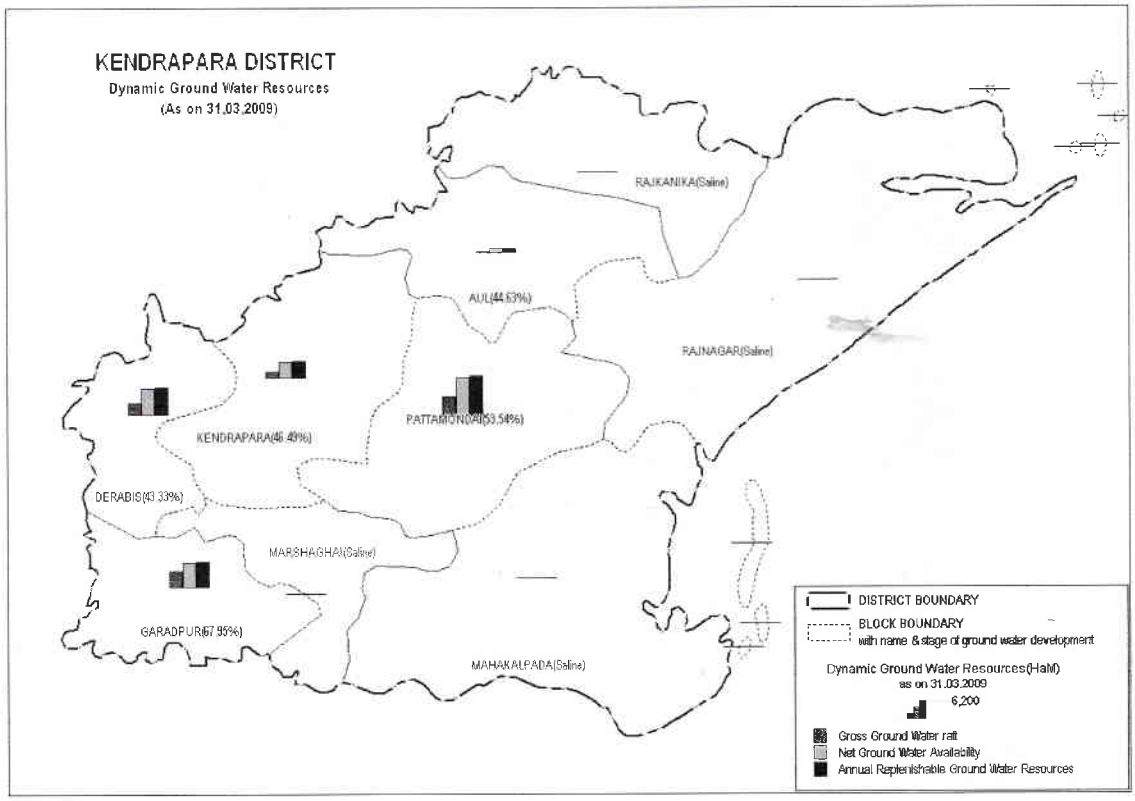
Plate-III



INDEX MAP OF KENDRAPARA DISTRICT. ORISSA

PLATE-I

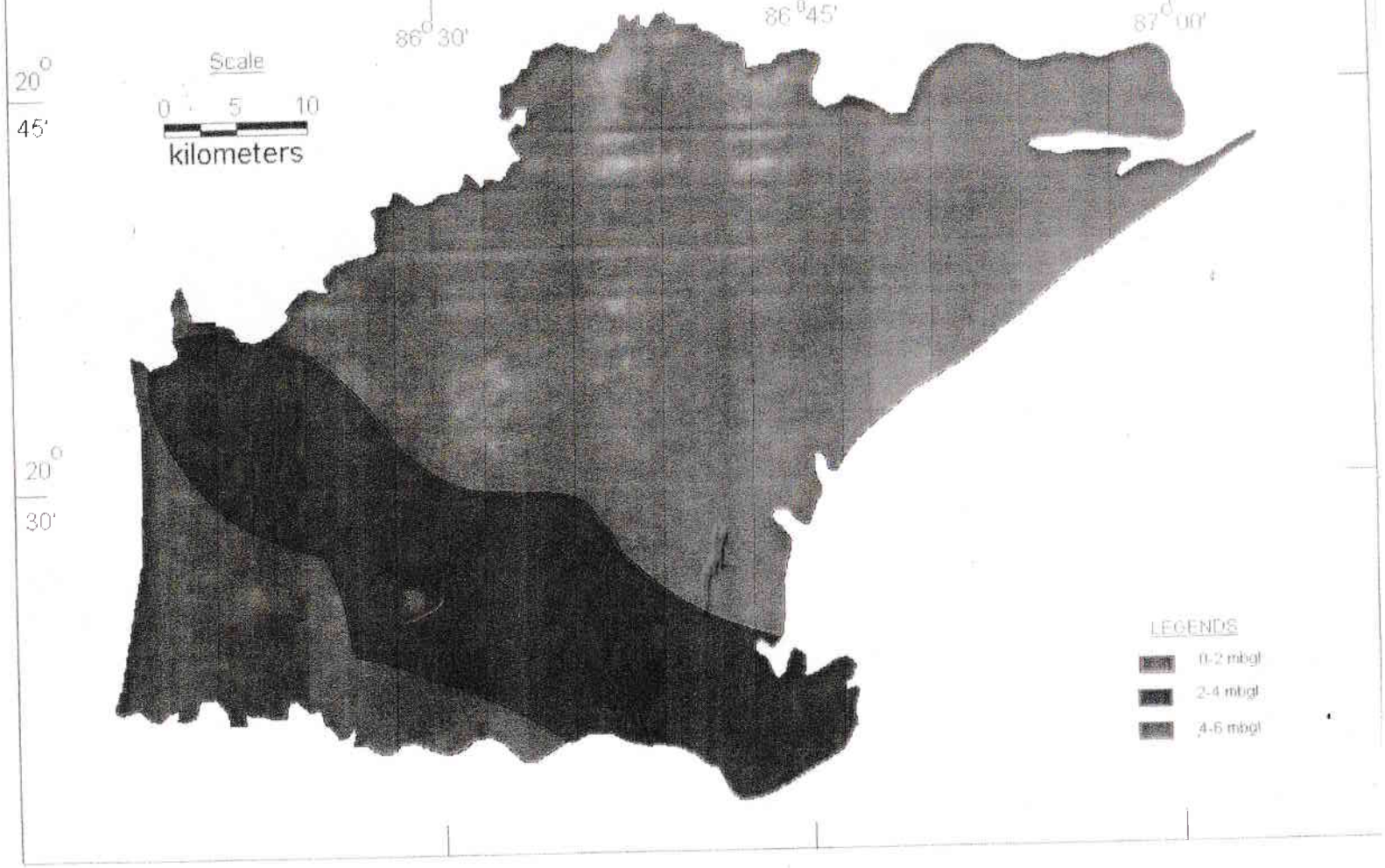


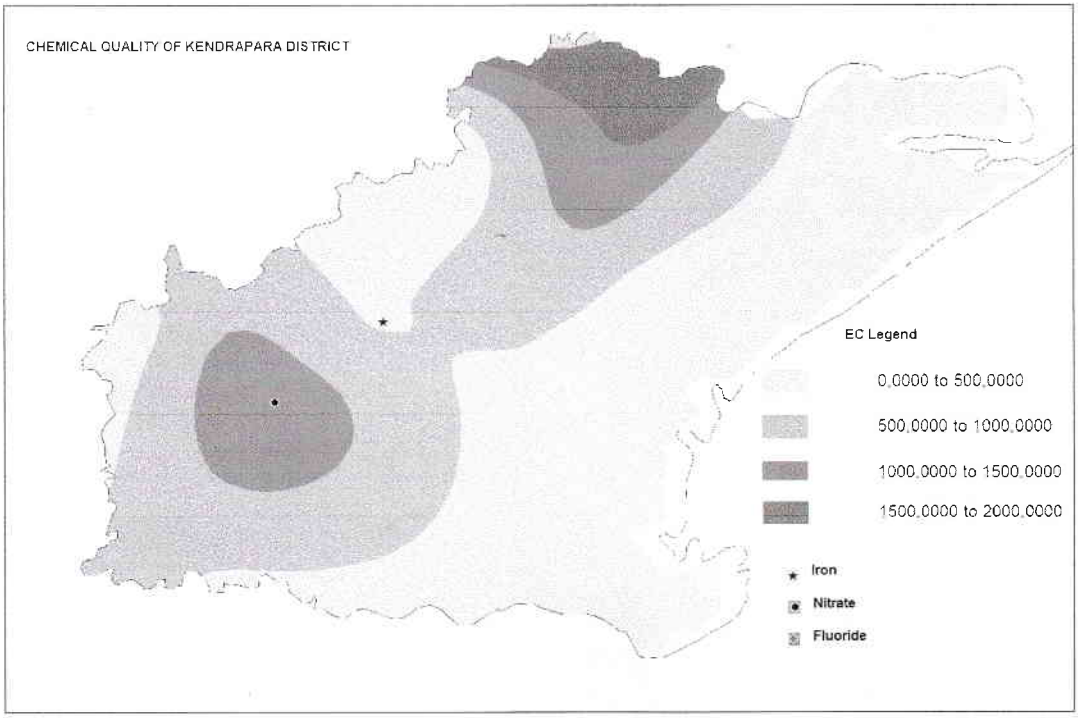

KENDRAPARA DISTRICT
Dynamic Ground Water Resources
(As on 31.03.2009)
RAJKANIKA(Saline)
AUL(44.63%)
RAJNAGAR(Saline)
PATTAMUNDAI(53.54%)
KENDRAPARA(46.49%)
DERABIS(63.33%)
MARSHAGHAI(Saline)
GARADPUR(67.95%)
MAHAKALPADA(Saline)
DISTRICT BOUNDARY
BLOCK BOUNDARY
with name & stage of ground water development
Dynamic Ground Water Resources(Ham)
as on 31.03.2009
6,200
Gross Ground Water raft
Net Ground Water Availability
Annual Replenishable Ground Water Resources

(Pdw)

PRE-MONSOON DEPTH TO WATER LEVEL MAP
(APRIL 2006) OF KENDRAPARA DISTRICT, ORISSA

PLATE-II

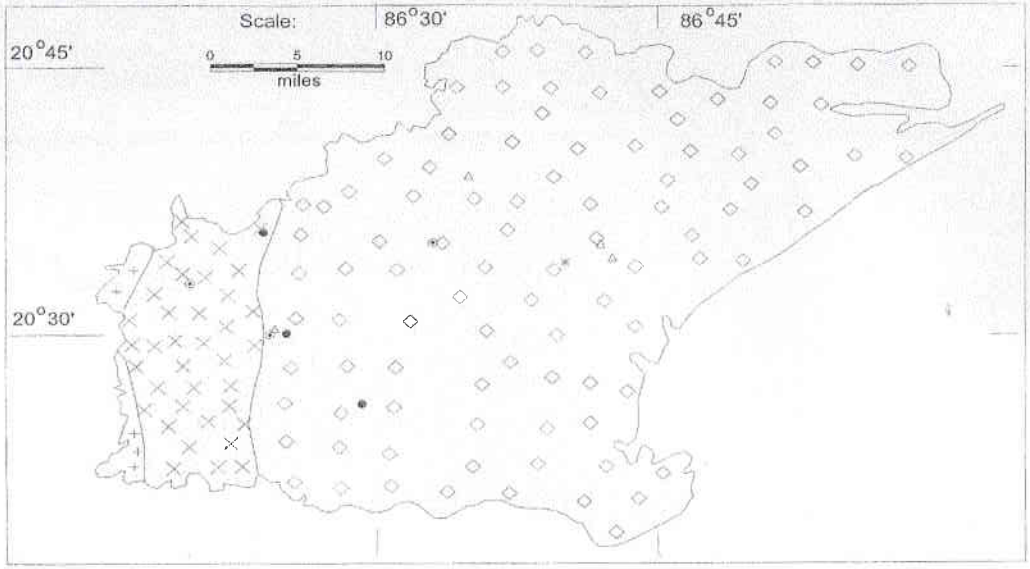



CHEMICAL QUALITY OF KENDRAPARA DISTRICT
EC Legend
0.0000 to 500.0000
500.0000 to 1000.0000
1000.0000 to 1500.0000
1500.0000 to 2000.0000
Iron
Nitrate
Fluoride

(Adv)

HYDROGEOLOGICAL MAP OF KENDRAPARA DISTRICT

Plate- IV



LEGENDS

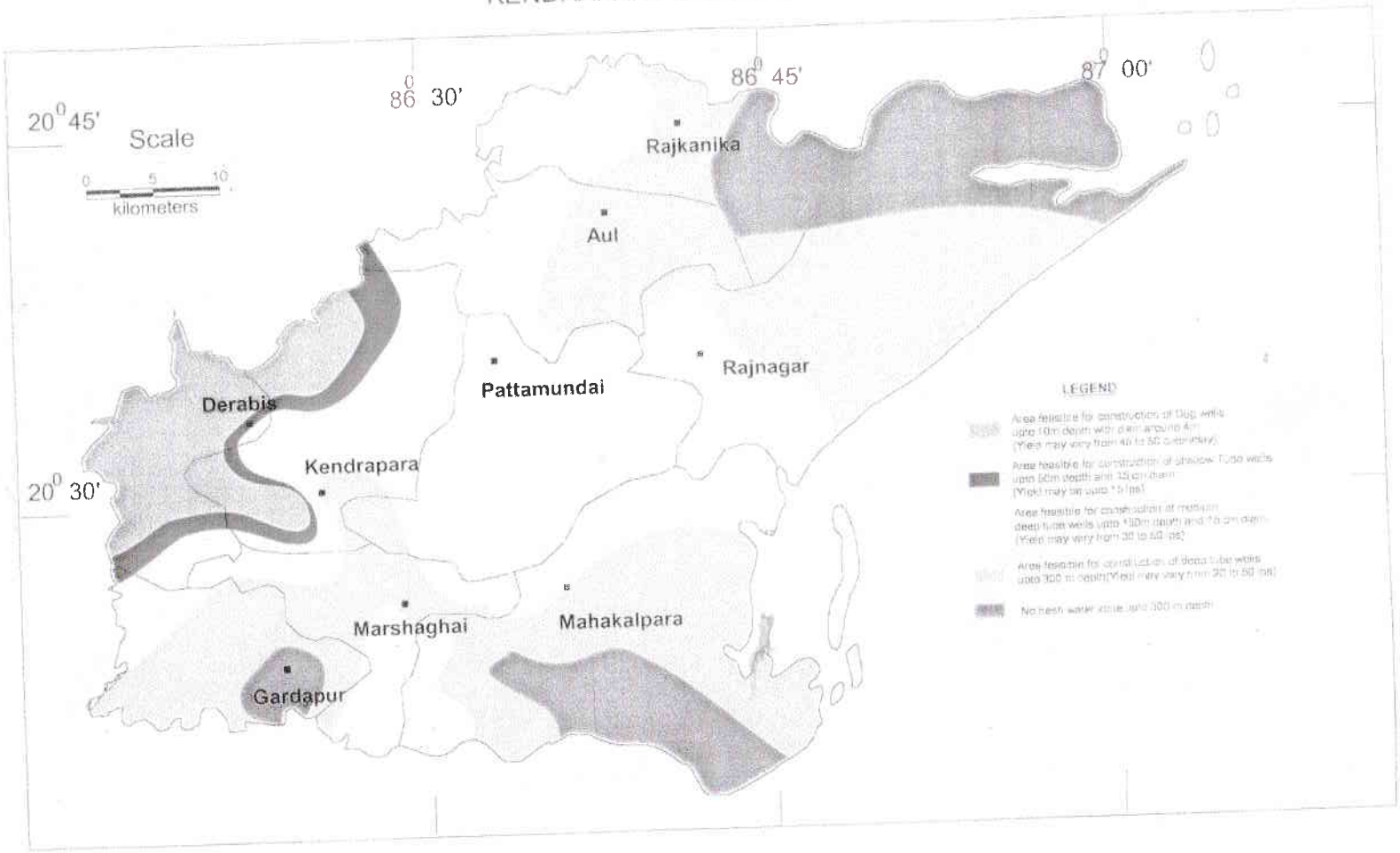
Age Group	Lithology	Index	Hydrogeological conditions
Recent	Alluvium underlain by older alluvium and mio-pliocene sediments		Fairly thick and regionally extensive unconfined to confined aquifers down to more than 300m depth
			Fresh water aqufers all through
			Fresh water occurs above and below saline zone. Thickness of top fresh zone vary from 15/20m in north to 60/70m in south.
			Fresh ground wateris overlain by saline ground water barring few meters at top.

Discharge Range of Bore Holes

- < 25 lps
- 25 - 50 lps
- 50 - 70 lps
- > 70 lps

Plate-VI

GROUND WATER DEVELOPEMENT AND PROSPECTS MAP OF KENDRAPARA DISTRICT



75

Annexure 5

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Water Quality Analysis of Gobari River at Kendrapara Town, Odisha

Sima Samantaray, Swati Panda, Sukumar Rout, Subhakant Khandual,
Goura Prasad Sarangi*, Shuchismita Behera

ABSTRACT

Safe drinking water is essential to human and other life forms even though it provides no calories or organic nutrients. The present study aims at determining quality of water of Gobari River, Kendrapara, Odisha which is an important source of cultivation. We analysed dissolved oxygen content, pH, acidity and alkalinity of water of Gobari River and its downstream. From the observation it was found that the pH value of samples of water site I and III were acidic in nature and water of the site II is slightly alkaline in nature. The acidity and the dissolve oxygen content in all the water sample is fluctuating which may due to the flowing of the water in the hilly areas, which help in the mixing of oxygen with the water. From the present investigation it can be said that all water samples are not in their respective ranges and not suitable for drinking purposes. But in site III dissolve oxygen is reduced as it is consumed by microbes and through other acidic pollutant. This may be due to deposition of more amount of organic waste materials in between site II and site III which increases the number of micro-organism in those waters. Alkalinity of water is slightly higher in Site-I representing presence of more utilisation of water for cleaning purpose and carbonate minerals deposition of hilly area.

INTRODUCTION

The river Gobari flows from Mahanadi-Paika Island at Bahadulpur in Cuttack district, traverses through Jajpur district at Panchu Pandav in north-west direction. The river forms almost a border line between the district of Jajpur and Kendrapara. After entering into the district, it passes through Paripala (Derabish block) Rajanga, Raghudeipur, Kujanga, Kendrapara municipally, Nagpura (Kendrapara block), Endara, Madhukula, Bagachhelia, Chandipur (Mahakalpara block) and finally merges in Bay of Bengal at Batighara mouth

78

near Jambu of Mahakalpara block. The river traverses a total distance of 227.20 Kms out of which 149 Kms are in the district of Kendrapara.

Odisha is a riverine state of India located at eastern region with 480 Kms of coastal region. The district Kendrapara is situated at the coastal belt of Odisha located between 20° 30' north latitude and 86° 25' east longitude with an altitude of 12 meters from sea level. Kendrapara is situated on the bank of river Gobari with a population of nearly 11, 49,501 as per 2011 census. Besides Gobari the other leading river like Brahmani, Birupa, Luna, and Chitroptala etc. also runs through the Kendrapara district.

Water is a transparent, tasteless, odourless and nearly colourless substance that is the main constituent of earth's streams, lakes and oceans and the fluids of most living organism. Its chemical formula is H_2O, meaning that each of its molecule contain one oxygen and two hydrogen atoms that are connected by covalent bond. Strictly speaking, water refers to the liquid state of a substance that prevails at standard ambient temperature and pressure, but it often refers also to its solid state (ice) or its gaseous state (stream or water vapour). It also occur in nature as snow, glaciers, icepacks and icebergs, cloud, fog, dew, aquafers and atmospheric humidity.

Due to over population, mass deforestation, urbanization, heavy industrialization and conversion of forest land into cropland, the whole water of the earth is polluted. The rate of water pollution is gradually increasing day by day. The release of industrial effluents, sewage, acid rain, uses of pesticides, fertilizers and surface runoff pollute the fresh water of river, streams, ponds and wetlands (Nordberg, 1985). Addition of these pollutants change the quality of water by changing pH, hardness, turbidity and dissolve oxygen making it unhygienic for living organism (APAH, 1989).

The river Gobari is the major water resources of the peoples of Kendrapara town and its adjacent villages. Most of the people and their livestock depend upon the water of the river Gobari for their basic needs as well as agricultural purpose. But now-a-days through agricultural run-off and deposition of market waste into the river make its water unsuitable for common purpose. So it is high time required to test the water quality and necessary steps should be taken to minimize its pollution. This work is a mere step to create awareness among the people to solve this problem which is highly necessary.

Methodology:

Selection of site: As there are several large patches of agricultural lands about more than thousand hectares and the people more than 60% depend upon agriculture for their livelihood. For the purpose of better yielding, farmers use chemical fertilizers and different pesticides which runs through the different rivulets, natural drainage of water from the large agricultural patches mixed into the river Gobari at different places. So that there is a chance of pollution of water of the river Gobari. It is because the river Gobari is formed

79

by the union of different large rivulets coming from different large agricultural patches commonly called "Patanali". As the river Gobari runs about 50 km through the Kendrapara district. So it is every possibility of pollution of river water. Beside this the market wastage which are added to the river water in the town area may causes pollution of water.

Taking it into consideration we select three sites on the river Gobari for our experimental purpose.

Water was collected from three different sites of Gobari River.

Site- I: Near Olasuni hill

Site-II: Near Udaynagar village

Site-III: From Kalimandir/ghat of Garapur

Collection of sample: The water is collected in the BOD bottles and brought laboratory. The various water quality tests like pH, alkalinity, acidity and dissolve oxygen content were done in our laboratory by the following methods (WHO, 1986).

Assessment of laboratory parameters:

Measurement of pH value of water:

pH is a numeric scale used to specify the acidity or basicity of an aqueous solution. More preciously it is the negative of the base 10 logarithm of the hydrogen ion ($-\log_{10}H+$). Solutions with a pH <7 are acidic and solution with pH >7 are basic. Pure water is neutral, at pH 7 (25°C), being neither acid nor a base. Measurement of pH are important in water treatment and water purification and many other application.

The pH value of water sample of each collection sites were measured by the digital pH meter. Before the measurement, pH meter was standardized with known pH solution like, pH-4, 7, and 9. Then, the pH value of each sample of water is measured.

Measurement of dissolved oxygen content of water:

Collected water sample was taken in 200ml glass stopper bottle. Immediately 2ml of Manganous sulphate solution was added followed by 2ml of alkaline iodide. Then it was thoroughly mixed to develop a flocculent precipitate. Then 4 ml of concentration sulphuric acid was added to the solution to dissolve the precipitate. Then 50ml of sample solution was taken and few drops of starch solution were added to it to develop the blue colour solution. Then this blue colour 50ml solution was titrated against with 0.025N Sodium thiosulphate solution till it become colourless.

Calculation:

Dissolved oxygen content (mg/L) = $V_1 \times N \times 8 \times 1000 / V_2$

Where V_1 = Volume of sodium thiosulphate used for titration

V_2 = Volume of sample water used for titration.

80

N = Normality of sodium thiosulphate

Measurement of alkalinity of water:

a) Standardisation of 0.02N H_2SO4:

20 ml of 0.02N Na_2CO_3 was taken in 250 ml conical flask. Then 3-4 drops of methyl orange indicator was added to it which gives yellow colour solution. 0.02N H_2SO4 was taken in a burette & titrate against Na_2CO_3 solution till the change of yellow colour changes to orange.

b)Titration of sample water:

20ml of sample solution was taken in conical flask. Then, 2-3 drops of phenopthalin indicator was added to it, but the pink colour does not develop. Then 2-3 drops of methyl orange indicator again added to same flask, which turn into yellow colour. Then this yellow colour solution was titrated against with 0.02N H_2SO4 till the yellow colour change into orange colour.

CALCULATION:

Total alkalinity (Mg/L) = (A+B) × N ×1000/V

Where, A = Volume of H_2SO4 used for titration in phenopthalin indicator

B = Volume of standard H_2SO4 used for titration in methyl orange indicator.

V = Volume of sample water for tested.

Measurement of acidity of water:

Titration of sample water:

20 ml of sample of water was taken in a conical flask. 50ml burette was ringed several times with 0.025 NaOH. NaOH solution was filled in the burette in such a way that there was no air bubble. Then 2-3 drops of phenopthalin was added to the sample solution which changes into pink colour. Then it was titrated against 0.025 NaOH.

CALCULATION:-

Acidity = $V_1 \times N \times 1000 / V_2$

Here, V1 = Volume of NaOH consumed in the titration

V2 = Volume of water taken

N = Normality of NaOH

Statistical analysis: Mean and standard deviation of grouped observation was computed as well as mean comparison between the groups was done using oneway-Anova analysis. 'p' value less than 0.05 was considered statistically significant.

Result: The results are depicted in Table -1. On one way-anova analysis it was found that the water collected from site - III has more hydrogen ion concentration in comparison to other sites. The dissolved oxygen content found to be more in site-II while it is very less in site-III. The highest value of alkalinity was found in water from site-I and value of other

81

two sites remain same. The highest value of acidity is found in water from site I.

Table 1: Mean±SD of various water quality parameters.

Different Water Sample of River Gobari	pH	Dissolved oxygen content (mg/L)	Alkalinity	Acidity
Water from Site – I	6.91 ± 0.01 (n = 6)	2.19 ± 0.21 (n = 6)	0.96 ± 0.04 (n = 6)	0.33 ± 0.05 (n = 6)
Water from Site – II	7.15 ± 0.03 (n = 6)	2.74 ± 0.21 (n = 6)	0.86 ± 0.04 (n = 6)	0.25 ± 0.00 (n = 6)
Water from Site – III	6.07 ± 0.01 (n = 6)	0.82 ± 0 (n = 6)	0.86 ± 0.04 (n = 6)	0.31± 0.06 (n = 6)
'p' - value	<0.0001*	<0.0001*	0.0006*	0.0202*

*Indicates statistically significant

DISCUSSION

The water quality analysis done by various parameters like pH, dissolve O2 content, alkalinity and acidity of the water collected from three sites of Gobari shows interesting results. From the observation it was found that the pH value of site-I and site-III were acidic in nature due to agricultural runoff and the acidity is fluctuating from upstream to downstream. The pattern of acidity value coincides with the pH value indicating mineral content nearby which is making this acidic. The alkalinity in terms of presence of bicarbonate ions is more in site - I indicating greater water utilization for washing and cleaning purpose as well as mineral carbonate deposition however, the dumping of the waste materials of the villagers and the peoples of the Kendrapara town near the river side to the site II and III can't also be ignored. Moreover the result of the dissolve oxygen content in all the water is fluctuating, it is due to the flowing of the water in the hilly areas, which help in the mixing of oxygen with the water. But in site III, where dissolve oxygen is reduced as it is consumed by microbes and through other acidic pollutant. This may be due to deposition of more amount of organic waste materials in between site II and site III which increases the number of micro-organism in those waters. These microorganisms also degrade those organic wastes and release more amount of carbon dioxide which is converted in to carbonic acids and carbonate ions. These carbonate ions combines with inorganic material to produce various carbonates which increase the hardness of water.

CONCLUSION

pH is a measurement of hydrogen ion concentration in water which indicate the nature of water whether it is acidic or basic. Water pH affects the metabolism and physiological process of aquatic life. It also influences the toxicity and solubility of nutrient and there by water fertility. The range of pH of water in between 6-9 is best for aquatic life.

82

The total alkalinity fluctuation affects pH range and may harmful to living organism. The optimum dissolve oxygen content of water should be in the range between 5mg/L -9mg/L which is good for growth of fish and other aquatic life. From the present investigation it can be said that all water samples are not in their respective ranges and not suitable for drinking purposes.

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Corresponding Author: gouraprasad67@gmail.com*

 83 Annexure 6

Villagers stage road blockade in garbage dumping protest in Odisha

Accusing the civic body of polluting the environment including Gobari river, the agitators blocked the main road at Hajaribagicha for two hours.

Published: 29th October 2021 07:26 AM | Last Updated: 29th October 2021 07:26 AM | A+ A A-

Garbage dumped along the main road at Hajaribagicha | Express

T.C attested (ADV)

By Express News Service

KENDRAPARA: Residents of Hajaribagicha, Khadianga, Jayapura, Sunaelo and Ekarakhandi villages on the outskirts of Kendrapara town staged road blockade on Thursday in protest against dumping of garbage in the open by municipality authorities.

Accusing the civic body of polluting the environment including Gobari river, the agitators blocked the main road at Hajaribagicha for two hours. Bhaskar Rout of

84

Hajaribagicha said, "It is illegal on the part of municipality authorities to dispose of garbage near our village instead of the designated dumping yard here. The rotting garbage is polluting the area and nearby Gobari river."

Sources said there is a waste management plant at Hajaribagicha where garbage collected from areas under the municipality limits is disposed of. However, the garbage has spilled over to roads causing major inconvenience to local villagers."The garbage spills over during transportation, dirtying several stretches of the main road. Besides, the waste flows into nearby agriculture fields during rains," said Rout.Last week, the villagers had detained two garbage-laden tractors at Hajaribagicha.

Executive officer of Kendrapara municipality Deba Prasad Bal said, "We have a solid waste management plant at Hajaribagicha where all the garbage is being dumped. Sometimes due to lack of space, sanitary workers dispose of the waste near the road. We have instructed them not to litter the village roads. Steps are being taken to clear the garbage from roads soon."

More From The Section

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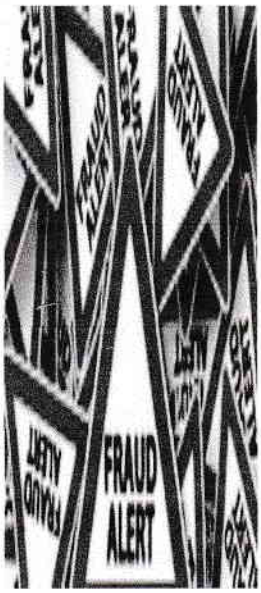

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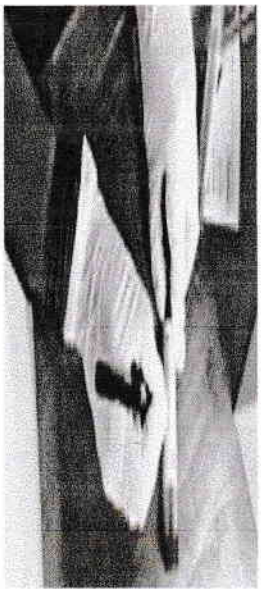

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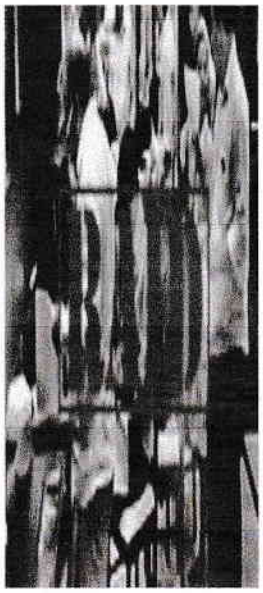

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The Odis Pradesh Committ releases chargesh against S governm

(ADV)

85

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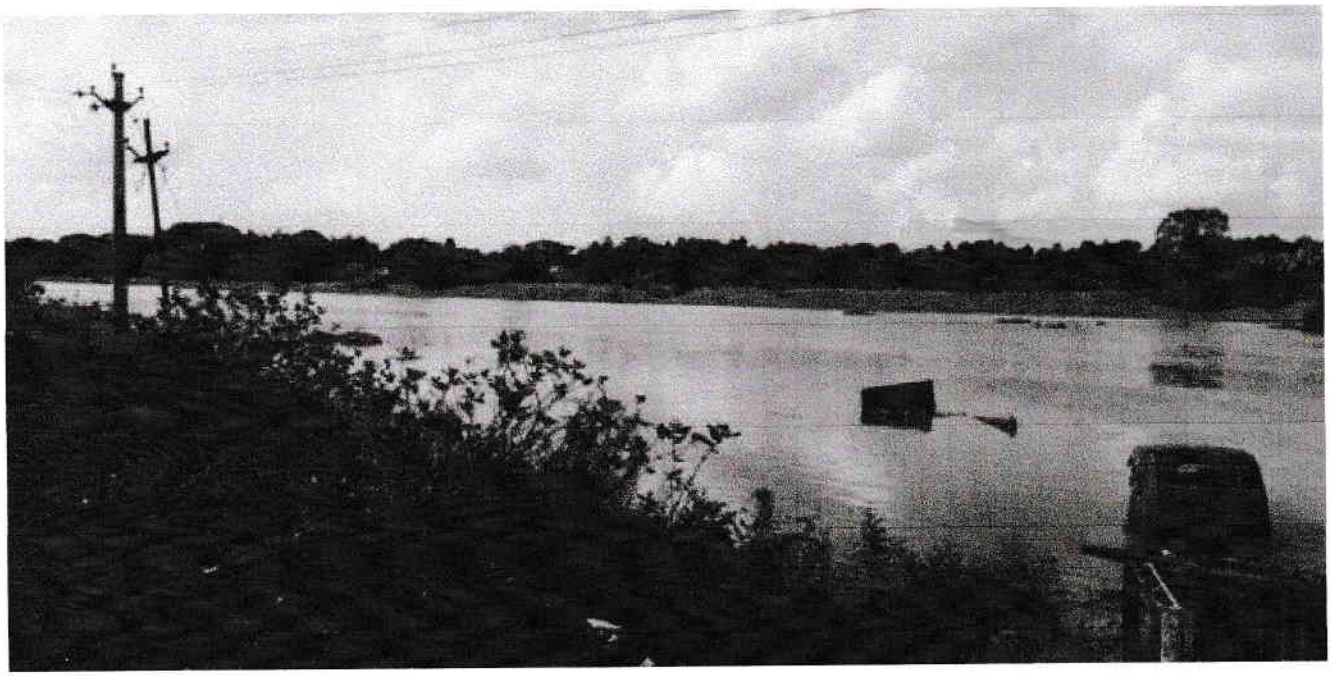
Letter to PM over Gobari pollution

Post News Network — Updated: February 9th, 2020, 10:43 IST in **State** 0



(Adv)

Kendrapara: The pollution of Gobari river and a canal in Kendrapara has pushed a denizen of Kendrapara to knock the doors of the Prime Minister office by filing a petition and urging before the Prime Minister, Narendra Modi, to take adequate steps for cleaning the Gobari river and British Era Kendrapara canal branch.

If sources are to be believed, Prakash Chandra Nayak, a resident of Gulnagar, located on the outskirts of Kendrapara municipality last year filed a petition to the Prime Minister Office

(PMO)by bringing to the notice of Narendra Modi about the sorry plight of the Gobari river and the branch canal of Kendrapara.

He alleged that Gobari river and the branch of Kendrapada canal, which was established during the British era in 1885 by the British irrigation company, is stated to be once the lifeline of locals as the two water bodies were catering for the drinking water and farming needs of people of the area. But the water bodies have since been polluted and now it has failed to fulfill the needs of people.

Discharge of sullage from the toilets along the canal and Gobari river is a testimony to the blatant violation of environmental laws, but nobody has taken steps in this regard in the past. Officials were mute spectators and possibly encouraged the denizens to release their sewage to canal and Gobari river alleged the petitioner.

Piles of garbage along with weeds and small bushes were developed on both sides of the Kendrapara canal, creating an unhygienic environment for locals. In several places, locals unauthorisedly connected their sewage and discharge the sullage into the canal as well as to the Gobari river. Even, the slum-dwellers, who were staying in the canal bunds and Gobari river embankments, also let out their waste into water thus polluting the water. The sewage not only pollutes its water but also makes the maintenance of canal difficult. The sewage changed the scenario, leading to the growth and thriving of weeds that obstruct the flow of water, causing heavy siltation.

He alleged that the Swachha Bharat Mission has completely failed in this district. So he requested the Prime Minister to sanction a special fund for making the Kendrapara canal's branch and Gobari river pollution-free by making their water bodies hygienic and useable.

Acting on the petition of Praksh Chandra Nayak, the office of the Prime minister forwarded the petition to the Ministry of Jal Shakti, (Department of Water Resources, RD and GR), National River Conservation Directorate to take steps in this regard.

The Deputy Director of Jal Shakti directed the member secretary of Central Pollution Control Board and member secretary of Odisha Pollution Control Board recently to submit requisite/action taken report on the grievance to the petitioner directly with a copy to the Ministry of Jal Shakti.

PNN

(ADV)

Tags: Gobari river Kendrapara Swachha Bharat Mission water pollution

Printed from
THE TIMES OF INDIA

Arati held to save dying Gobari river in Kendrapada

TNN | Jan 14, 2016, 09.14 AM IST

Kendrapada: A large number of people of Kendrapada conducted arati on the Gobari river bank on Tuesday evening to highlight the problems afflicting the river.

"We organized the event to create awareness among the people on the need to save the river," said convener of Gobari Surakhaya Manch Manas Ranjan Mishra.

He said inadequate water flow in 113-km-long Gobari, a tributary of Mahanadi stretching from Khairi village to Jamboo village, was gradually destroying the agriculture and environment of around 150 nearby villages with a population of around 4 lakh.

Mishra also blamed a slaughterhouse at Dilarpur village within Kendrapada town for polluting the river. "More than 20 cattle are slaughtered at the abattoir every day and the waste dumped in the river. The authorities are not taking no steps to close the illegal abattoir," he added.

Several people have encroached on the river bed and build houses. "This needs to be checked," the convener of the outfit said.

Lack of water in the river has affected farming in the area. "The river is biologically dead at several places. All proposals to restore the river to its past glory are gathering dust," Mishra said.

Several fishermen have switched profession with no fish left in the river. "Gobari is dying due to gross negligence of the authorities," said Iswar Chandra Sahoo, a retired teacher of Kendrapada.

Former principal of Kendrapada college Nanda Kishor Parida said the river was the lifeline of around hundred villages. "It was used for navigation purpose during the British period. With the improvement in road transport, the boats gradually disappeared," he said.

Collector (Kendrapada) Debraj Senapati said the water resources department had removed weeds from the Gobari river last year. "We have chalked out a plan to revive the river. Some persons, who had illegally encroached on the river bed, were recently evicted. The rest will soon be asked to vacate the area," he said.

90

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7 rivers drying up in Kendrapara district; 1,114 LI points defunct

Post News Network — Updated: May 14th, 2021, 10:24 IST in **State**, **Top Stories** 0

Kendrapara: Farming will be seriously hit in the district with seven rivers going dry and 1114 lift irrigation (LI) points becoming defunct, a report said.

It is apprehended that over 25,718 hectares of land might remain uncultivated due to lack of irrigation facilities. This has happened even as 'Akshaya Trutiya' the festival of agriculture,

91

Reports said seven rivers flowing through the district have gone dry from the start of this summer season. As a result, farmers are increasingly facing problems in watering their land.

The LI points have also become defunct as there is not enough water in the rivers. The district has 152,000 hectares of farm land out of which 86132 hectares are irrigated by water from canal, LI points, shallow tube wells and other water sources like ponds and wells.

The dip in river water has also resulted in water scarcity for the riparian villagers. The decline in water level in the rivers has also led to simultaneous decline in water level of tube wells, wells and ponds.

Farmer leaders Bidhu Bhusan Mohapatra, Gayadhar Dhal, Bijay Kumar Parida and farmers Niranjan Parida and Chittaranjan Das said seven rivers under the Mahanadi, the Brahmani and the Baitarani river systems flow through the district.

The fishermen dependent on these rivers for their livelihood have been equally hit. They alleged that construction of a barrage on the upstream of the Mahanadi by the Chhattisgarh government has spelled disaster for the state. The water level in Luna, Paika, Chitrotpala, Mahanadi and Birupa rivers on the downstream have declined due to construction of the barrage.

Similarly, the water level in Gobari, Brahmani and Kharasrota under the Baitarani river system has also declined. The canals emerging from these rivers have gone dry and so have the wells and ponds in the district.

Farmers claimed that the lift irrigation points drawing water from these rivers were helpful in irrigation of farmlands. There are 82 LI points in Kendrapara block, 37 in Derabish, 100 in Marshaghai, 119 in Mahakalapara, 97 in Garadapur, 138 in Pattamundai, 248 in Aul, 180 in Rajkanika and 113 in Rajnagar.

(Add)

Likewise, 3,063 shallow tube wells and 10,624 other sources drawing water from these rivers helped in irrigating their farmlands. However, these are lying defunct with the rivers going dry. Left with no options, the farmers are now waiting for the arrival of the monsoon season.

When contacted, Prabodh Kumar Rout, executive engineer, irrigation department, said the water level in the rivers has declined due to summer. He said efforts are being made to make

92

Odisha's Gobari canal reduced to dumping ground due to rampant encroachment

Executive engineer of Irrigation department Prabodh Kumar Rout said numerous drains in Kendrapara town are connected with the canal due to which it is clogged with garbage.

Published: 12th July 2020 08:23 AM | Last Updated: 12th July 2020 08:23 AM

Gobari canal in Kendrapara district

By Express News Service

KENDRAPARA: Rampant encroachment and pollution has restricted the flow of water in Gobari canal, considered the lifeline of around two lakh people in the district.

The 20 km long canal connects Kendrapara town to Gandakhia. Around 70,000 hectare land in Kansar, Purusotampur, Ayeda, Gandakhia and other panchayats

is irrigated through the canal, which has now been reduced to a dumping ground due to lack of cleaning and maintenance.

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(Adv)

"Several proposals to restore the canal have been gathering dust in official files," said Pradyumna Nayak of Kansar.

Nityananda Behera of Kendrapara recalls his childhood days when fishermen caught fish in the canal.

"Now the canal is dying a slow death owing to negligence of officials concerned. Despite several appeals to the officials concerned, nothing has been done to clean it," he said.

Executive engineer of Irrigation department Prabodh Kumar Rout said numerous drains in Kendrapara town are connected with the canal due to which it is clogged with garbage.

He said several slums have come up on the canal bund. Even as the authorities concerned were urged to evict the encroachers, nothing has been done in this regard. Rout said the Irrigation department had sought Rs 26 crore from the Government to clean the canal.

94

Home › States › Odisha

Encroachment takes toll on Gobari river in Odisha's Jagatsinghpur district

People, who made a living by catching fish in the river, have demanded its renovation with locals seeking a new sluice gate and repair of the existing one to conserve water.

Published: 12th January 2020 11:53 AM | Last Updated: 12th January 2020 11:53 AM | A+ A A-

Flow of water in Gobari river has reduced | Express

By Express News Service

JAGATSINGHPUR: Absence of measures to check encroachment on both sides of Gobari river in Nuagaon block has taken a toll on the water body.

People who made a living by catching fish in the river, have demanded its

95

"After the funds are sanctioned, we will start its renovation," he said.

Collector Samarth Verma said unauthorised houses on both sides of the canal will soon be demolished.

"Action will also be taken against persons who have connected their latrine pipes to the canal," he said.

The Gobari canal was built in 1870 after the infamous Na anka drought of 1866 for navigation and irrigation. It was used for movement of boats in the preindependence era.

More From The Section

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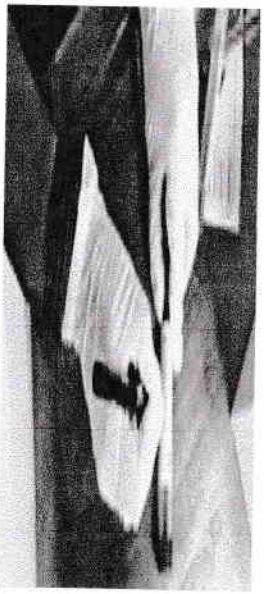
Lookout notice against private firm MD over Rs 100 crore fraud



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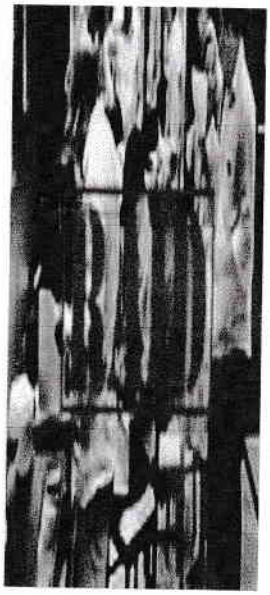

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TAGS **Gobari canal** **Odisha**

[Adv]

96

renovation. The locals have sought a new sluice gate and repair of the existing one to conserve water for pisciculture and horticulture.
They have also sought utilisation of the dry portions of the river by leasing them out to women self-help groups.

Sources said the move will generate revenue and provide jobs to more than 2,000 people. Weed removal was done in the river in 2012. Around 3,000 hectare land on both sides of the river was utilised for vegetable cultivation.

However, since the flow of water has reduced, the land under cultivation remains unutilised. Besides, encroachment by locals, who have dug ponds on the section of the river passing through Tiruna panchayat, remains a major cause of concern. Sources said the river has now turned into a dumping yard.

The Irrigation department had constructed a sluice gate over the river at Gopalpur village and a bridge at Bansa in 2002. Another bridge with lock system was constructed at Garei Bansa for conservation of water in 1983.

The sluice gate now lies in a dilapidated condition. In 2018, the department had taken steps for the dredging of the river. It had also undertaken stone packing at a cost of Rs 9 crore but it did not last long owing to sub-standard work.

The river is also known as Gobardhana river. It merges with Devi river at Garoi in the district.A senior official of the Fishery department said the Central Inland Fisheries Research Institute (CIFRI), Barrackpore was asked to prepare a detailed project report to activate dead rivers, including Gobari, to mitigate water crisis. But, nothing has yet been done in this regard.

Executive Engineer, Drainage Division Ashish Kumar Mishra said the State Government has sanctioned `1.50 crore for the renovation of the river and the work will start soon.

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97

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OrissaPOST

Encroachments push Gobari to brink of extinction

Post News Network — Updated: January 11th, 2021, 10:15 IST in **State**, **Top Stories** 0

Kendrapara: The mythology famed Gobari river flowing through this district is fast turning into a dead river with its water turning toxic and becoming unfit for consumption, a report said.

The river mentioned as 'Madhusagar' in mythology is slowly losing its water-retaining

98

capacity due to large scale encroachment on its banks. The encroachment of the river is more in the town than in rural areas.

The river is no longer able to provide sufficient water for irrigation of farmlands. However, the water resources department has not stopped collecting water cess from the farmers.

Concerned over the development, the residents have lodged complaints with the district administration but without any success.

The residents alleged that a test report of the water samples conducted by the water resources department in 2013 confirmed presence of toxic substances in the river but no action has been taken yet in this direction.

The report claims high presence of toxic substances like cadmium, chromium and potassium in the river. People using the river water now get affected by skin diseases and water-borne diseases.

Recently, the Kendrapara Municipality has started discharging the wastewater of the town through two siphons. Moreover, open defecation by people on the river banks and discharge of sewage into the river has also polluted its water.

This apart, lack of regular cleaning has led to growth of hyacinths and weeds in the river.

According to an estimate by the water resources department, the water of the 138 km-long Gobari river helps in irrigating 7,616 hectares of farmlands on both sides of the river.

Its water also irrigates an additional 4000 hectares of farmland after a creek embankment project came up at Malibasa, Tantiapala, Benakanda and Bijaynagar areas under Mahakalapara block of the district.

The water drawn from the river helps in irrigating rabi crops on 3,200 hectares of farmland and oilseeds like groundnuts on 600 hectares of farmland.

The water is used by over 80,000 residents daily in the district. A survey report by the water resources department claims that the river water is used directly or indirectly to irrigate around 30,000 hectares of farmland in the district.

Sk Amjan of Kendrapara town, Tuna Sahu of Phorad village, Nilamadhab Mohapatra and Niranjan Parida of Kansar village said that seven rivers including the Gobari flowing through the district have deeply influenced the lives and livelihoods of the people.

The water route of Gobari was the main mode of goods transport when there was no road

99

transport facilities five decades back, they said. In post-Independence era, the river route was developed and the river water was provided to the farmers for irrigation.

When contacted, Prabodh Kumar Rout, executive engineer of the water resources department, said that a plan has been made for the last three years for renovation of the river. The programme will be launched soon, he added.

PNN

Tags: encroachment Gobari river Kendrapara Kendrapara Municipality Madhusagar

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Bharatnet project implementation not satisfactory in Odisha: Telecom Minister Vaishnaw

100

Annexure 7

To

Secretary

Department of Water Resource

Subject- Pollution of river Gobari

Madam/Sir,

River Gobari has a huge importance for people of Kendrapara. The said river has been source of life for not only people of Kendrapara but also to adjacent villages. Many farmers and fishermen have been dependant on the said river. But now the said river has badly been affected because of unwarranted dumping of solid and liquid waste into the said river. Even there has been dumping of waste in the banks of the said river which later mixes up with the river and contaminates the said river. The situation has gone so bad that the water of the said river is hardly of any use. This has badly affected the farmers and fishermen who have been dependant on the said river. The river pollution has been so bad that the ground water of Kendrapara city has also been badly damaged. The river needs urgent steps for protection orelse there wont be much long when the river will be called as a dead river

Thanking You

T.C attested

D/r
(Adv)

101

To

Collector and District Magistrate

Kendrapara

Subject- Pollution of river Gobari

Madam/Sir,

River Gobari has a huge importance for people of Kendrapara. The said river has been source of life for not only people of Kendrapara but also to adjacent villages. Many farmers and fishermen have been dependant on the said river. But now the said river has badly been affected because of unwarranted dumping of solid and liquid waste into the said river. Even there has been dumping of waste in the banks of the said river which later mixes up with the river and contaminates the said river. The situation has gone so bad that the water of the said river is hardly of any use. This has badly affected the farmers and fishermen who have been dependant on the said river. The river pollution has been so bad that the ground water of Kendrapara city has also been badly damaged. The river needs urgent steps for protection orelse there wont be much long when the river will be called as a dead river

Thanking You

DM
(ADM)

102

To

Commissioner

Kendrapara Municipality

Subject- Pollution of river Gobari

Madam/Sir,

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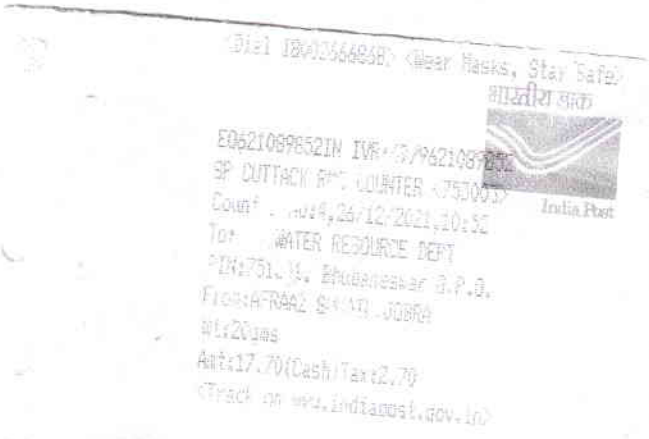
Thanking You

(Adv)

103



104 Annexure 8

CONTENTS

T.C attested
(Adv)

105

Government of Orissa
Department of Water Resources

Rajiv Bhawan
Orissa
Friday, the 16th March, 2007

RESOLUTION

State Water Policy – 2007

Water is a prime natural resource, a basic human need and a precious national asset. Planning, development and management of water Resources therefore need to be governed by a national perspective. The National Water Policy was first formulated in 1987. Based on the national policy, the State Water Policy was formulated in 1994. Since then a number of developments have take place; new information and knowledge have been generated and new issues and challenges have emerged in the field of development and management of water resources. The National Water Policy-1987 has been reviewed, updated and a new policy titled National Water Policy-2002 has been adopted by Government of India. It was therefore felt necessary by the State Government to review the State Water Policy-1994. After due consideration, the State Govt. have prepared a new Water Policy called "Orissa State Water Policy- 2007" in keeping with the National Water Policy – 2002, and this has been approved by the State Water Resources Board after taking outcome of the meeting with all stakeholders and administrative departments into account. It aims at laying down the principles of equitable and judicious use of water for survival of life, welfare of human beings and sustained as well as balanced growth of the State.

(Adv)

State Water Policy

Water is replenishable but finite resource. The annual overall availability of surface water in Orissa is about 85.59 billion m^3. The population of Orissa is 4% of that of the country, according to 2001 census. The State has 11% of the water resources of the country. The per-capita availability of water in 2001 was 3359 m^3. By 2051, it is likely to reduce to 2218 m^3 . With increasing population and the consequential increase in demand for food and water and with the growth in mining and industrial activities, the demand for water from various sectors is likely to increase to 55 billion m^3. by 2051. The degradation in quality of water resources by direct and indirect human interference such as discharge of untreated/partially treated industrial and municipal waste water, organic and inorganic wastes and runoff from agriculture, mining, etc makes this resource increasingly scarce.

The seasonality of water availability in peninsular India causes significant variations in availability of water, both in space and time. The vagaries of monsoon cause droughts and floods in different parts of the State on a regular basis. From 1958 to 2005, rain related natural calamities have visited the State 27 times.

The State Water Policy of Orissa, 2007 takes into account all these emerging factors and aims at laying down principles for wise and judicious use of water for survival of life.

(Adv)

1. State Water Plan

1.1 The hydrological unit should be the unit of development and management of water resources, starting from primary watersheds to sub-catchments and catchments, integrated into sub-basins and basins. The State of Orissa has 11 river basins. The salient features of these basins are placed in the Annexure. The State has developed a State Water Plan for a period covering up to 2051 AD when the population of the State is expected to stabilize. With competing demands for water from the same sources, it is necessary to lay down the priorities in its allocation. The State of Orissa adopts the following order of priority in water allocation in tune with the National Policy:

- Drinking water and domestic use (human and animal consumption)
- Ecology
- Irrigation, Agriculture and other related activities including Fisheries.
- Hydro Power
- Industries including Agro Industries.
- Navigation and other uses such as tourism.

Any alteration in the above mentioned priorities will demand formulation of a new policy.

1.2 The State Water Plan will not only allocate the water resource to different sectors of priority, it will also have a perspective plan for development of these resources in important areas like drinking water, irrigation, hydro-power etc. While developing these resources, people's need, preservation of the ecological balance and enrichment of the ecosystem would receive adequate attention. The plan will be holistic, participatory and environmentally sustainable.

2. Institutional Mechanism

2.1 The preparation of the State Water Plan and development of the water resources require an appropriate institutional and legal framework to support the activities. The Orissa Water Planning Organisation under the Engineer-in-Chief, Water Resources shall prepare macro level multi sectoral River Basin Plans. The OWPO will interact with various stakeholders for preparation of these plans. The plans prepared by OWPO will be ground-truthed through the River Basin Organisations (R.B.Os), which are to be established for planning and management of water resources of different basins. Adequate representation would be provided to various stakeholders of water in the RBOs. The RBOs will also take on board P.R.I.s, Legislators, civil society organisations and experts for a holistic water resource plan for the basin.

2.2 The plans prepared by OWPO and vetted by the R.B.Os will be placed for approval of the State Level Water Resource Board, which would provide necessary forum for inter sectoral coordination and policy realignment.

2.3 The institutional capacity for development of new water resource will be suitably upgraded in the light of modern improvements in project planning, monitoring and evaluation. Time and cost overruns shall be minimized through appropriate systems of monitoring. The budgetary provision will be prioritized for achieving the maximum return on investment.

2.4 The human resource engaged in planning and development of water resources will be trained at suitable intervals in order to keep abreast of the latest developments in the field.

2.5 In order to facilitate planning and development of water resources, a modern hydrological information system would be developed which would include collection, processing, archiving and dissemination of water related data. The water related data would include hydrological, meteorological, topographical, geo-morphological, demographical and ecological data and those relating to land, soil, water quality, forest cover, crop cover etc. There will be a state of the art Data Storage Center for the purpose. Decision Support Systems will be developed for making use of the data and geographical information system in the Water Resources field. There will be a certain degree of standardization and transparency in collection and dissemination of the data system.

3. Drinking Water

The State shall provide adequate safe drinking water for human beings and livestock both in urban and rural areas. Irrigation and multipurpose projects should invariably include components for domestic use, which should override the demands from other sectors. Maintenance of water quality and reduction of pollution load will be an integral part of the strategy. Monitoring and surveillance of water quality would also be an integral part of the strategy. This will be achieved through an appropriate combination of legislation and information, education and communication (IEC) measures. Mechanism to maintain domestic water supply in case of emergency should be provided.

4. Development of Water Resources for Irrigation and Drainage.

4.1 Development of water resources will take into account all the available options such as surface water, ground water and rain water harvesting for the most cost effective and sustainable combination. The over all goal would be water security for all. Intra-State, inter-basin transfer of

water from surplus areas to deficit areas will be planned taking into account the riparian rights of the population and the environmental impact of such transfer.

4.2 The Action Plan for horizontal expansion of irrigation coverage would include Major, Medium, Minor and Lift Irrigation Projects depending upon their feasibility and financial viability. Traditional systems of Irrigation such as Munda, Kata, Bandha, tanks and check dams etc will be given their due importance. Attempts will be made to enrich these traditional sources by not only renovating them, but also involving people in their planning and management. Interlinking major and medium irrigation projects for a holistic development of the system would be kept in view. Development of water resources in tribal and hilly areas would be specially designed to suit the tribal ethos, agronomic system of the terrain and should be in tune with the ecology of the area.

4.3 The expansion of irrigation coverage would aim at balanced growth of the infrastructure throughout the State. The district and blocks having irrigation coverage below the State average will receive greater attention than those above in matters of future investment in irrigation infrastructure. The projects will, as far as possible, be targeted to benefit the disadvantaged sections of the society. Appropriate strategy will be developed in order to achieve this objective.

4.4. Conservation of water would receive priority at par with horizontal expansion of irrigation coverage. Improvement of irrigation efficiency by way of reduction of transmission losses will form an important component of the State Water Plan.

Measures such as selective lining of the conveyance systems, modernization and rehabilitation of existing systems including tanks, recycling and reuse of treated effluents and adoption of new techniques like drip and sprinkler irrigation will be promoted. There would be coordination with Agriculture Department for promoting suitable cropping pattern which would help efficient and equitable use of water.

4.5 Planning and development of water resources will encompass uniform development of field channels through command area development activities. Such activities will be carried out only through people's participation.

4.6 Irrigation and drainage are inter-twined and the development of one should take into account the development of the other. A master plan for improvement of the drainage system of the State has been prepared in order to retrieve 1.95 lakh Ha. of water logged land for agriculture. The plan would be further refined and converted into an action plan within the overall purview of the State Water Plan. The drainage improvement measures would not only include engineering interventions, it would also include adequate biological interventions and appropriate land use plans for water-logged areas with people's participation.

4.7 Planning for drainage will form an integral part of the project formulation in all the new projects.

4.8 There should be a dedicated organisation to deal with the problem of drainage for the entire State.

5. Hydropower Generation

5.1. Hydropower being a clean source of energy, steps would be taken to identify the potential hydropower projects and prepare a perspective plan for their development. Feasibility of establishing mini and micro hydropower units utilizing canal falls will be explored.

5.2. Multipurpose projects will be planned in such a way that the power-released water is utilised for irrigation and other consumptive uses, keeping in view riparian right of the people downstream.

5.3. Utilisation of water for pumped storage-scheme may be done subject to overall economy of the proposal.

6. Industrial Water Supply

Water will be supplied to Industries within the overall purview of State Water Plan. Encouragement/incentives will be given to industries for recycling of water. Disincentives will be prescribed for non-recycling of water.

7. Ecology and Water Quality

7.1 The importance of water for maintaining the ecological balance of the river systems would be an integral part of the State Water Policy. The environmental impact of the irrigation projects will be carefully evaluated before the projects are cleared. Wetlands like lakes, lagoons, mangroves, marshes etc would be sustained and adequate conservation measures would be undertaken through systematic planning.

7.2 The preparation of the project plan will take into account the requirement of environmental flow in the river as a mandatory consideration.

7.3 Studies will be conducted in order to analyze the requirement of water for maintenance of the riverine ecosystems. Periodic reports would be brought out on the basis of these studies.

7.4 Industrial and Municipal effluents should be treated to acceptable levels and standards before discharging them into natural streams.

7.5 Both surface water and Ground water should be regularly monitored for quality. Top priority will be given to address water quality problems. The information should be continuously shared with people.

7.6 Use of non-biodegradable materials should be discouraged by suitable mechanisms.

7.7 The principle of "Polluters must pay" will be applied to meet the expenses of maintaining water quality.

7.8 Necessary and adequate steps should be taken including legislation for preservation of existing water bodies and their sustainable use.

8. Resettlement and Rehabilitation

8.1 Development of water resources sometimes causes displacement of people.

8.2 The Resettlement and Rehabilitation component will form an integral part of every water resource development project in keeping with the latest R&R Policy of the State. The cost of R&R would be the first charge on the project and resettlement of the displaced persons will precede completion of a project.

9. Ground Water Development

9.1 The State has a utilizable ground water potential of 21.01 billion m^3 , out of which the utilisation has been to the extent of 14.79%. The ground water potential of the State would be harnessed in a sustainable manner for supply of drinking water and irrigation, especially in water scarce areas.

9.2 Artificial recharge of ground water including roof top rainwater harvesting would be encouraged to replenish the utilisable ground water resources and improve its quality. The ground water recharge would be a conscious policy of all stakeholders . It would be the focus of the State Watershed Mission's activities.

9.3 Exploitation of ground water resources would be done with adequate attention to the quality and quantity of ground water. There should be a periodical assessment of the ground water potential on a scientific basis in every Block of the State. The information should be shared with people on continuous basis.

9.4 Overexploitation of ground water would be effectively prevented by legislation.

9.5 Degradation of Watershed (catchment) leads to reduction in the retention of water in the catchment, which increases the frequency and intensity of floods. Concerted efforts would be made for proper management of watersheds as a non-structural measure of flood control and drought mitigation.

9.6 Along with flood proofing, there should be strict regulation of settlements and economic activities in the flood plain zones alongwith flood proofing to minimize the loss of life and property on account of floods. Necessary legislation will be enacted for this purpose.

9.7 The flood forecasting methods, forecast of inflow into reservoirs etc. would be modernised with the objective of effective management of reservoirs.

10. Flood Control and Management

10.1 A master plan for flood control and management for each flood prone area of the basins would be prepared and future investments in flood control measures would be guided by such master plan. River Training Works will be taken up for protection of embankments and for maintenance of the river regime.

10.2 Adequate flood storage should be provided in water reservoir projects, wherever feasible, to facilitate better flood management. In highly flood prone areas, flood control would be given overriding consideration in the reservoir regulation policy even at the cost of sacrificing some irrigation or power benefits.

10.3 Increased emphasis would be laid on non structural flood control measures such as flood forecasting and warning, flood plain zoning and flood proofing for the minimization of losses and reduction of recurring expenditure on flood relief and rehabilitation.

10.4 Control of urban flooding would be given due consideration.

11. Management of Saline Ingress

11.1 The threat of saline ingress through tidal action will be tackled by suitable structural interventions such as construction of sluices and embankments. They will also be handled by maintenance of low flows in rivers in the normal monsoon period. Studies will be conducted in order to ascertain the proper balance of sea and river water for maintenance of an estuarial ecosystems on the entire Orissa coast. Experience sharing with other states and countries would be given due importance.

11.2 Overexploitation of ground water in coastal areas brings in its wake a distinct possibility of permanent contamination of the ground water reserve through saline ingress. Adequate measures will be taken to prevent such a hazard.

11.3 Important habitations facing the threat of tidal action will be protected through strengthening of embankments, suitable shelter belt plantation and mobilising community action for such purposes.

11.4 Salt production in the State would be encouraged.

12. Participatory Irrigation Management

12.1 Sustainability in water resources development and management depends upon the participation of the Water Users in Irrigation Management. Orissa has promulgated the Orissa Pani Panchayat Act, 2002 and Orissa Pani Panchayat Rules, 2003 to provide a legal framework for such participation. The State shall develop a time bound programme for transfer of operation and management of all irrigation projects to the

Farmers' Organisations. The State shall however continue to provide necessary support to these institutions by way of their capacity building on a continuous basis and also by financial assistance to them as a proportion of water rate collected. Periodic independent evaluations would be conducted to assess the impact of the Participatory Irrigation Management and suitable measures would be taken on the basis of lessons learnt.

12.2 The Water and Land Management Institution (WALMI) will be strengthened to act as a centre of excellence for PIM activities. Knowledge and experience sharing with similar institutions in the country and abroad would be encouraged.

12.3 In suitable projects, the State will introduce Irrigation Management Transfer (IMT). This will, however be done in tune with the capacity of the Pani Panchayats to shoulder the responsibility of management of the Projects.

13. Financial Sustainability

13.1 Development of water resource involves huge capital investment. Creation of necessary infrastructure will continue to remain in the domain of public investment. Participation of beneficiaries in the capital cost in suitable proportions will be encouraged through appropriate schemes.

13.2 There will be differential water rates for different categories of uses.

13.3 The cost of operation and management will be fully recovered from the beneficiaries. Norms will be established for ensuring water rights commensurate with water rates. The State will explore the possibility of setting up a regulatory authority for fixation of water rates in order to achieve full cost recovery of the O&M charges.

13.4 In case there is any public-private participation in water resource development, care will be taken to ensure that the riparian and traditional rights of the local communities are adequately protected. Prior consultation with P.R.I.s/communities would be mandatory.

13.5 The polluters of water will be made to pay so that adequate measures can be taken for pollution mitigation. However, pollution beyond a threshold to be decided by the Orissa Pollution Control Board would not be permissible.

14. Catchment treatment

The treatment of catchments of all reservoirs will be taken up in an expeditious, systematic and scientific manner in order to prevent premature siltation of the reservoirs. Action plans would be prepared for catchment treatment of all the major and medium reservoirs of the State with the help of satellite data as well as ground surveys. The afforestation and soil conservation measures should be dovetailed with measures for prevention of reservoir sedimentation. The effectiveness of such measures will be monitored and the impact evaluated at designated intervals. The catchment treatment plans, their implementation, their monitoring and evaluation should be with the full participation of local communities living therein.

15. Safety of Dams

The safety of large dams would receive the urgent attention of the State. Appropriate legislation would be enacted in order to ensure proper inspection and surveillance of existing dams and also to ensure proper maintenance and rehabilitation of the dams. The Dam Safety Organisation under Engineer-in-Chief, Water Resources would be suitably strengthened to discharge these functions effectively.

16. Role of NGOs

The State would welcome the participation of NGOs in campaigns for water management, water conservation and participatory irrigation management. They may also be associated with the resettlement and rehabilitation of displaced persons for bringing about greater transparency and stakeholder participation. The NGOs will form an important medium for campaigns relating to information, education and communication with regard to management, conservation and development of water resources.

There will be adequate civil society engagement in the process of monitoring the implementation of the State Water Policy.

LIST OF ANNEXURES

Salient Features of

1. **Subernarekha Basin**
2. **Burhabalanga Basin**
3. **Jambhira Basin**
4. **Baitarani Basin**
5. **Brahmani Basin**
6. **Mahanadi Basin**
7. **Rushikulya Basin**
8. **Bahuda Basin**
9. **Vansadhara Basin**
10. **Nagavali Basin**
11. **Kolab Basin**
12. **Indravati Basin**

121 Annexure 9

Government of India
Ministry of Water Resources

NATIONAL WATER POLICY (2012)

1. PREAMBLE

1.1 A scarce natural resource, water is fundamental to life, livelihood, food security and sustainable development. India has more than 18 % of the world's population, but has only 4% of world's renewable water resources and 2.4% of world's land area. There are further limits on utilizable quantities of water owing to uneven distribution over time and space. In addition, there are challenges of frequent floods and droughts in one or the other part of the country. With a growing population and rising needs of a fast developing nation as well as the given indications of the impact of climate change, availability of utilizable water will be under further strain in future with the possibility of deepening water conflicts among different user groups. Low consciousness about the scarcity of water and its life sustaining and economic value results in its mismanagement, wastage, and inefficient use, as also pollution and reduction of flows below minimum ecological needs. In addition, there are inequities in distribution and lack of a unified perspective in planning, management and use of water resources. The objective of the National Water Policy is to take cognizance of the existing situation, to propose a framework for creation of a system of laws and institutions and for a plan of action with a unified national perspective.

1.2 The present scenario of water resources and their management in India has given rise to several concerns, important amongst them are;

(i) Large parts of India have already become water stressed. Rapid growth in demand for water due to population growth, urbanization and changing lifestyle pose serious challenges to water security.

(ii) Issues related to water governance have not been addressed adequately. Mismanagement of water resources has led to a critical situation in many parts of the country.

(iii) There is wide temporal and spatial variation in availability of water, which may increase substantially due to a combination of climate change, causing deepening of water crisis and incidences of water related disasters, i.e., floods, increased erosion and increased frequency of droughts, etc.

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(iv) Climate change may also increase the sea levels. This may lead to salinity intrusion in ground water aquifers / surface waters and increased coastal inundation in coastal regions, adversely impacting habitations, agriculture and industry in such regions.

(v) Access to safe water for drinking and other domestic needs still continues to be a problem in many areas. Skewed availability of water between different regions and different people in the same region and also the intermittent and unreliable water supply system has the potential of causing social unrest.

(vi) Groundwater, though part of hydrological cycle and a community resource, is still perceived as an individual property and is exploited inequitably and without any consideration to its sustainability leading to its over-exploitation in several areas.

(vii) Water resources projects, though multi-disciplinary with multiple stakeholders, are being planned and implemented in a fragmented manner without giving due consideration to optimum utilization, environment sustainability and holistic benefit to the people.

(viii) Inter-regional, inter-State, intra-State, as also inter-sectoral disputes in sharing of water, strain relationships and hamper the optimal utilization of water through scientific planning on basin/sub-basin basis.

(ix) Grossly inadequate maintenance of existing irrigation infrastructure has resulted in wastage and under-utilization of available resources. There is a widening gap between irrigation potential created and utilized.

(x) Natural water bodies and drainage channels are being encroached upon, and diverted for other purposes. Groundwater recharge zones are often blocked.

(xi) Growing pollution of water sources, especially through industrial effluents, is affecting the availability of safe water besides causing environmental and health hazards. In many parts of the country, large stretches of rivers are both heavily polluted and devoid of flows to support aquatic ecology, cultural needs and aesthetics.

(xii) Access to water for sanitation and hygiene is an even more serious problem. Inadequate sanitation and lack of sewage treatment are polluting the water sources.

(xiii) Low consciousness about the overall scarcity and economic value of water results in its wastage and inefficient use.

(xiv) The lack of adequate trained personnel for scientific planning, utilizing modern techniques and analytical capabilities incorporating information technology constrains good water management.

(xv) A holistic and inter-disciplinary approach at water related problems is missing.

(xvi) The public agencies in charge of taking water related decisions tend to take these on their own without consultation with stakeholders, often resulting in poor and unreliable service characterized by inequities of various kinds.

(xvii) Characteristics of catchment areas of streams, rivers and recharge zones of aquifers are changing as a consequence of land use and land cover changes, affecting water resource availability and quality.

1.3 Public policies on water resources need to be governed by certain basic principles, so that there is some commonality in approaches in dealing with planning, development and management of water resources. These basic principles are:

(i) Planning, development and management of water resources need to be governed by common integrated perspective considering local, regional, State and national context, having an environmentally sound basis, keeping in view the human, social and economic needs.

(ii) Principle of equity and social justice must inform use and allocation of water.

(iii) Good governance through transparent informed decision making is crucial to the objectives of equity, social justice and sustainability. Meaningful intensive participation, transparency and accountability should guide decision making and regulation of water resources.

(iv) Water needs to be managed as a common pool community resource held, by the state, under public trust doctrine to achieve food security, support livelihood, and ensure equitable and sustainable development for all.

(v) Water is essential for sustenance of eco-system, and therefore, minimum ecological needs should be given due consideration.

(vi) Safe Water for drinking and sanitation should be considered as pre-emptive needs, followed by high priority allocation for other basic domestic needs (including needs of animals), achieving food security, supporting sustenance agriculture and minimum eco-system needs. Available water, after meeting the above needs, should be allocated in a manner to promote its conservation and efficient use.

(vii) All the elements of the water cycle, i.e., evapo-transpiration, precipitation, runoff, river, lakes, soil moisture, and ground water, sea, etc., are interdependent and the basic hydrological unit is the river basin, which should be considered as the basic hydrological unit for planning.

(viii) Given the limits on enhancing the availability of utilizable water resources and increased variability in supplies due to climate change, meeting the future needs will depend more on demand management, and hence, this needs to be given priority, especially through (a) evolving an agricultural system which economizes on water use and maximizes value from water, and (b) bringing in maximum efficiency in use of water and avoiding wastages.

(ix) Water quality and quantity are interlinked and need to be managed in an integrated manner, consistent with broader environmental management approaches inter-alia including the use of economic incentives and penalties to reduce pollution and wastage.

(x) The impact of climate change on water resources availability must be factored into water management related decisions. Water using activities need to be regulated keeping in mind the local geo climatic and hydrological situation.

2. WATER FRAMEWORK LAW

2.1 There is a need to evolve a National Framework Law as an umbrella statement of general principles governing the exercise of legislative and/or executive (or devolved) powers by the Centre, the States and the local governing bodies. This should lead the way for essential legislation on water governance in every State of the Union and devolution of necessary authority to the lower tiers of government to deal with the local water situation.

2.2 Such a framework law must recognize water not only as a scarce resource but also as a sustainer of life and ecology. Therefore, water, particularly, groundwater, needs to be managed as a community resource held, by the state, under public trust doctrine to achieve food security, livelihood, and equitable and sustainable development for all. Existing Acts may have to be modified accordingly.

2.3 There is a need for comprehensive legislation for optimum development of inter-State rivers and river valleys to facilitate inter-State coordination ensuring scientific planning of land and water resources taking basin/sub-basin as unit with unified perspectives of water in all its forms (including precipitation, soil moisture, ground and surface water) and ensuring holistic and balanced development of both the catchment and the command areas. Such legislation needs, inter alia, to deal with and enable establishment of basin authorities, comprising party States, with appropriate powers to plan, manage and regulate utilization of water resource in the basins.

3. USES OF WATER

3.1 Water is required for domestic, agricultural, hydro-power, thermal power, navigation, recreation, etc. Utilisation in all these diverse uses of water should be optimized and an awareness of water as a scarce resource should be fostered.

3.2 The Centre, the States and the local bodies (governance institutions) must ensure access to a minimum quantity of potable water for essential health and hygiene to all its citizens, available within easy reach of the household.

3.3 Ecological needs of the river should be determined, through scientific study, recognizing that the natural river flows are characterized by low or no flows, small floods (freshets), large floods, etc., and should accommodate developmental needs. A portion of river flows should be kept aside to meet ecological needs ensuring that the low and high flow releases are proportional to the natural flow regime, including base flow contribution in the low flow season through regulated ground water use.

3.4 Rivers and other water bodies should be considered for development for navigation as far as possible and all multipurpose projects over water bodies should keep navigation in mind right from the planning stage.

3.5 In the water rich eastern and north eastern regions of India, the water use infrastructure is weak and needs to be strengthened in the interest of food security.

3.6 Community should be sensitized and encouraged to adapt first to utilization of water as per local availability of waters, before providing water through long distance transfer. Community based water management should be institutionalized and strengthened.

4. ADAPTATION TO CLIMATE CHANGE

4.1 Climate change is likely to increase the variability of water resources affecting human health and livelihoods. Therefore, special impetus should be given towards mitigation at micro level by enhancing the capabilities of community to adopt climate resilient technological options.

4.2 The anticipated increase in variability in availability of water because of climate change should be dealt with by increasing water storage in its various forms, namely, soil moisture, ponds, ground water, small and large reservoirs and their combination. States should be incentivized to increase water storage capacity, which inter-alia should include revival of traditional water harvesting structures and water bodies.

4.3 The adaptation strategies could also include better demand management, particularly, through adoption of compatible agricultural strategies and cropping patterns and improved water application methods, such as land leveling and/or drip / sprinkler irrigation as they enhance the water use efficiency, as also, the capability for dealing with increased variability because of climate change. Similarly, industrial processes should be made more water efficient.

4.4 Stakeholder participation in land-soil-water management with scientific inputs from local research and academic institutions for evolving different agricultural strategies, reducing soil erosion and improving soil fertility should be promoted. The specific problems of hilly areas like sudden run off, weak water holding capacity of soil, erosion and sediment transport and recharging of hill slope aquifers should be adequately addressed.

4.5 Planning and management of water resources structures, such as, dams, flood embankments, tidal embankments, etc., should incorporate coping strategies for possible climate changes. The acceptability criteria in regard to new water resources projects need to be re-worked in view of the likely climate changes

5. ENHANCING WATER AVAILABLE FOR USE

5.1 The availability of water resources and its use by various sectors in various basin and States in the country need to be assessed scientifically and reviewed at periodic intervals, say, every five years. The trends in water availability due to various factors including climate change must be assessed and accounted for during water resources planning.

5.2 The availability of water is limited but the demand of water is increasing rapidly due to growing population, rapid urbanization, rapid industrialization and economic development. Therefore, availability of water for utilization needs to be augmented to meet increasing demands of water. Direct use of rainfall, desalination and avoidance

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of inadvertent evapo-transpiration are the new additional strategies for augmenting utilizable water resources.

5.3 There is a need to map the aquifers to know the quantum and quality of ground water resources (replenishable as well as non-replenishable) in the country. This process should be fully participatory involving local communities. This may be periodically updated.

5.4 Declining ground water levels in over-exploited areas need to be arrested by introducing improved technologies of water use, incentivizing efficient water use and encouraging community based management of aquifers. In addition, where necessary, artificial recharging projects should be undertaken so that extraction is less than the recharge. This would allow the aquifers to provide base flows to the surface system, and maintain ecology.

5.5 Inter-basin transfers are not merely for increasing production but also for meeting basic human need and achieving equity and social justice. Inter-basin transfers of water should be considered on the basis of merits of each case after evaluating the environmental, economic and social impacts of such transfers.

5.6 Integrated Watershed development activities with groundwater perspectives need to be taken in a comprehensive manner to increase soil moisture, reduce sediment yield and increase overall land and water productivity. To the extent possible, existing programs like MGNREGA may be used by farmers to harvest rain water using farm ponds and other soil and water conservation measures.

6. DEMAND MANAGEMENT AND WATER USE EFFICIENCY

6.1 A system to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing should be developed to promote and incentivize efficient use of water. The 'project' and the 'basin' water use efficiencies need to be improved through continuous water balance and water accounting studies. An institutional arrangement for promotion, regulation and evolving mechanisms for efficient use of water at basin/sub-basin level will be established for this purpose at the national level.

6.2 The project appraisal and environment impact assessment for water uses, particularly for industrial projects, should, inter-alia, include the analysis of the water footprints for the use.

6.3 Recycle and reuse of water, including return flows, should be the general norm.

6.4 Project financing should be structured to incentivize efficient & economic use of water and facilitate early completion of ongoing projects.

6.5 Water saving in irrigation use is of paramount importance. Methods like aligning cropping pattern with natural resource endowments, micro irrigation (drip, sprinkler, etc.), automated irrigation operation, evaporation-transpiration reduction, etc., should be encouraged and incentivized. Recycling of canal seepage water through conjunctive ground water use may also be considered.

6.6 Use of very small local level irrigation through small bunds, field ponds, agricultural and engineering methods and practices for watershed development, etc, need to be encouraged. However, their externalities, both positive and negative, like reduction of sediments and reduction of water availability, downstream, may be kept in view.

6.7 There should be concurrent mechanism involving users for monitoring if the water use pattern is causing problems like unacceptable depletion or building up of ground waters, salinity, alkalinity or similar quality problems, etc., with a view to planning appropriate interventions.

7. WATER PRICING

7.1 Pricing of water should ensure its efficient use and reward conservation. Equitable access to water for all and its fair pricing, for drinking and other uses such as sanitation, agricultural and industrial, should be arrived at through independent statutory Water Regulatory Authority, set up by each State, after wide ranging consultation with all stakeholders.

7.2 In order to meet equity, efficiency and economic principles, the water charges should preferably / as a rule be determined on volumetric basis. Such charges should be reviewed periodically.

7.3 Recycle and reuse of water, after treatment to specified standards, should also be incentivized through a properly planned tariff system.

7.4 The principle of differential pricing may be retained for the pre-emptive uses of water for drinking and sanitation; and high priority allocation for ensuring food security and supporting livelihood for the poor. Available water, after meeting the above needs, should increasingly be subjected to allocation and pricing on economic principles so that water is not wasted in unnecessary uses and could be utilized more gainfully.

7.5 Water Users Associations (WUAs) should be given statutory powers to collect and retain a portion of water charges, manage the volumetric quantum of water allotted to them and maintain the distribution system in their jurisdiction. WUAs should be given the freedom to fix rates subject to floor rates determined by WRAs.

7.6 The over-drawal of groundwater should be minimized by regulating the use of electricity for its extraction. Separate electric feeders for pumping ground water for agricultural use should be considered.

8. CONSERVATION OF RIVER CORRIDORS, WATER BODIES AND INFRASTRUCTURE

8.1 Conservation of rivers, river corridors, water bodies and infrastructure should be undertaken in a scientifically planned manner through community participation. The storage capacities of water bodies and water courses and/or associated wetlands, the flood plains, ecological buffer and areas required for specific aesthetic

recreational and/or social needs may be managed to the extent possible in an integrated manner to balance the flooding, environment and social issues as per prevalent laws through planned development of urban areas, in particular.

8.2 Encroachments and diversion of water bodies (like rivers, lakes, tanks, ponds, etc.) and drainage channels (irrigated area as well as urban area drainage) must not be allowed, and wherever it has taken place, it should be restored to the extent feasible and maintained properly.

8.3 Urban settlements, encroachments and any developmental activities in the protected upstream areas of reservoirs/water bodies, key aquifer recharge areas that pose a potential threat of contamination, pollution, reduced recharge and those endanger wild and human life should be strictly regulated.

8.4 Environmental needs of Himalayan regions, aquatic eco-system, wet lands and embanked flood plains need to be recognized and taken into consideration while planning.

8.5 Sources of water and water bodies should not be allowed to get polluted. System of third party periodic inspection should be evolved and stringent punitive actions be taken against the persons responsible for pollution.

8.6 Quality conservation and improvements are even more important for ground waters, since cleaning up is very difficult. It needs to be ensured that industrial effluents, local cess pools, residues of fertilizers and chemicals, etc., do not reach the ground water.

8.7 The water resources infrastructure should be maintained properly to continue to get the intended benefits. A suitable percentage of the costs of infrastructure development may be set aside along with collected water charges, for repair and maintenance. Contract for construction of projects should have inbuilt provision for longer periods of proper maintenance and handing over back the infrastructure in good condition.

8.8 Legally empowered dam safety services need to be ensured in the States as well as at the Centre. Appropriate safety measures, including downstream flood management, for each dam should be undertaken on top priority.

9. PROJECT PLANNING AND IMPLEMENTATION

9.1 Considering the existing water stress conditions in India and the likelihood of further worsening situation due to climate change and other factors, water resources projects should be planned as per the efficiency benchmarks to be prescribed for various situations.

9.2 Being inter-disciplinary in nature, water resources projects should be planned considering social and environmental aspects also in addition to techno-economic considerations in consultation with project affected and beneficiary families. The integrated water resources management with emphasis on finding reasonable and

generally acceptable solutions for most of the stakeholders should be followed for planning and management of water resources projects.

9.3 Considering the heavy economic loss due to delay in implementation of projects, all clearances, including environmental and investment clearances, be made time bound.

9.4 Concurrent monitoring at project, State and the Central level should be undertaken for timely interventions to avoid time and cost over-runs.

9.5 All components of water resources projects should be planned and executed in a pari-passu manner so that intended benefits start accruing immediately and there is no gap between potential created and potential utilized.

9.6 Local governing bodies like Panchayats, Municipalities, Corporations, etc., and Water Users Associations, wherever applicable, should be involved in planning of the projects. The unique needs and aspirations of the Scheduled caste and Scheduled Tribes, women and other weaker sections of the society should be given due consideration.

9.7 All water resources projects, including hydro power projects, should be planned to the extent feasible as multi-purpose projects with provision of storage to derive maximum benefit from available topology and water resources.

10. MANAGEMENT OF FLOOD & DROUGHT

10.1 While every effort should be made to avert water related disasters like floods and droughts, through structural and non-structural measures, emphasis should be on preparedness for flood / drought with coping mechanisms as an option. Greater emphasis should be placed on rehabilitation of natural drainage system.

10.2 Land, soil, energy and water management with scientific inputs from local, research and scientific institutions should be used to evolve different agricultural strategies and improve soil and water productivity to manage droughts. Integrated farming systems and non-agricultural developments may also be considered for livelihood support and poverty alleviation.

10.3 In order to prevent loss of land eroded by the river, which causes permanent loss, revetments, spurs, embankments, etc., should be planned, executed, monitored and maintained on the basis of morphological studies. This will become increasingly more important, since climate change is likely to increase the rainfall intensity, and hence, soil erosion.

10.4 Flood forecasting is very important for flood preparedness and should be expanded extensively across the country and modernized using real time data acquisition system and linked to forecasting models. Efforts should be towards developing physical models for various basin sections, which should be linked to each other and to medium range weather forecasts to enhance lead time.

10.5 Operating procedures for reservoirs should be evolved and implemented in such a manner to have flood cushion and to reduce trapping of sediment during flood season. These procedures should be based on sound decision support system.

10.6 Protecting all areas prone to floods and droughts may not be practicable; hence, methods for coping with floods and droughts have to be encouraged. Frequency based flood inundation maps should be prepared to evolve coping strategies, including preparedness to supply safe water during and immediately after flood events. Communities need to be involved in preparing an action plan for dealing with the flood/ drought situations.

10.7 To increase preparedness for sudden and unexpected flood related disasters, dam/embankment break studies, as also preparation and periodic updating of emergency action plans / disaster management plans should be evolved after involving affected communities. In hilly reaches, glacial lake outburst flood and landslide dam break floods studies with periodic monitoring along with instrumentation, etc., should be carried out.

11. WATER SUPPLY AND SANITATION

11.1 There is a need to remove the large disparity between stipulations for water supply in urban areas and in rural areas. Efforts should be made to provide improved water supply in rural areas with proper sewerage facilities. Least water intensive sanitation and sewerage systems with decentralized sewage treatment plants should be incentivized.

11.2 Urban and rural domestic water supply should preferably be from surface water in conjunction with groundwater and rainwater. Where alternate supplies are available, a source with better reliability and quality needs to be assigned to domestic water supply. Exchange of sources between uses, giving preference to domestic water supply should be possible. Also, reuse of urban water effluents from kitchens and bathrooms, after primary treatment, in flush toilets should be encouraged, ensuring no human contact.

11.3 Urban domestic water systems need to collect and publish water accounts and water audit reports indicating leakages and pilferages, which should be reduced taking into due consideration social issues.

11.4 In urban and industrial areas, rainwater harvesting and de-salinization, wherever techno-economically feasible, should be encouraged to increase availability of utilizable water. Implementation of rainwater harvesting should include scientific monitoring of parameters like hydrogeology, groundwater contamination, pollution and spring discharges.

11.5 Urban water supply and sewage treatment schemes should be integrated and executed simultaneously. Water supply bills should include sewerage charges.

11.6 Industries in water short regions may be allowed to either withdraw only the make up water or should have an obligation to return treated effluent to a specified standard back to the hydrologic system. Tendencies to unnecessarily use more

water within the plant to avoid treatment or to pollute ground water need to be prevented.

11.7 Subsidies and incentives should be implemented to encourage recovery of industrial pollutants and recycling / reuse, which are otherwise capital intensive.

12. INSTITUTIONAL ARRANGEMENTS

12.1 There should be a forum at the national level to deliberate upon issues relating to water and evolve consensus, co-operation and reconciliation amongst party States. A similar mechanism should be established within each State to amicably resolve differences in competing demands for water amongst different users of water, as also between different parts of the State.

12.2 A permanent Water Disputes Tribunal at the Centre should be established to resolve the disputes expeditiously in an equitable manner. Apart from using the „good offices" of the Union or the State Governments, as the case may be, the paths of arbitration and mediation may also to be tried in dispute resolution.

12.3 Water resources projects and services should be managed with community participation. For improved service delivery on sustainable basis, the State Governments / urban local bodies may associate private sector in public private partnership mode with penalties for failure, under regulatory control on prices charged and service standards with full accountability to democratically elected local bodies.

12.4 Integrated Water Resources Management (IWRM) taking river basin / sub-basin as a unit should be the main principle for planning, development and management of water resources. The departments / organizations at Centre / State Governments levels should be restructured and made multi-disciplinary accordingly.

12.5 Appropriate institutional arrangements for each river basin should be developed to collect and collate all data on regular basis with regard to rainfall, river flows, area irrigated by crops and by source, utilizations for various uses by both surface and ground water and to publish water accounts on ten daily basis every year for each river basin with appropriate water budgets and water accounts based on the hydrologic balances. In addition, water budgeting and water accounting should be carried out for each aquifers.

12.6 Appropriate institutional arrangements for each river basin should also be developed for monitoring water quality in both surface and ground waters.

12.7 States should be encouraged and incentivized to undertake reforms and progressive measures for innovations, conservation and efficient utilization of water resources.

13. TRANS-BOUNDARY RIVERS

13.1 Even while accepting the principle of basin as a unit of development, on the basis of practicability and easy implementability, efforts should be made to enter into

international agreements with neighbouring countries on bilateral basis for exchange of hydrological data of international rivers on near real time basis.

13.2 Negotiations about sharing and management of water of international rivers should be done on bilateral basis in consultative association with riparian States keeping paramount the national interest. Adequate institutional arrangements at the Center should be set up to implement international agreements.

14. DATABASE & INFORMATION SYSTEM

14.1 All hydrological data, other than those classified on national security consideration, should be in public domain. However, a periodic review for further declassification of data may be carried out. A National Water Informatics Center should be established to collect, collate and process hydrologic data regularly from all over the country, conduct the preliminary processing, and maintain in open and transparent manner on a GIS platform.

14.2 In view of the likely climate change, much more data about snow and glaciers, evaporation, tidal hydrology and hydraulics, river geometry changes, erosion, sedimentation, etc. needs to be collected. A programme of such data collection needs to be developed and implemented.

14.3 All water related data, like rainfall, snowfall, geo-morphological, climatic, geological, surface water, ground water, water quality, ecological, water extraction and use, irrigated area, glaciers, etc., should be integrated with well defined procedures and formats to ensure online updation and transfer of data to facilitate development of database for informed decision making in the management of water.

15. RESEARCH & TRAINING NEEDS

15.1 Continuing research and advancement in technology shall be promoted to address issues in the water sector in a scientific manner. Innovations in water resources sector should be encouraged, recognized and awarded.

15.2 It is necessary to give adequate grants to the States to update technology, design practices, planning and management practices, preparation of annual water balances and accounts for the site and basin, preparation of hydrologic balances for water systems, benchmarking and performance evaluation.

15.3 It needs to be recognized that the field practices in the water sector in advanced countries have been revolutionized by advances in information technology and analytical capabilities. A re-training and quality improvement programme for water planners and managers at all levels in India, both in private and public sectors, needs to be undertaken.

15.4 An autonomous center for research in water policy should also be established to evaluate impacts of policy decisions and to evolve policy directives for changing scenario of water resources.

15.5 To meet the need of the skilled manpower in the water sector, regular training and academic courses in water management should be promoted. These training and academic institutions should be regularly updated by developing infrastructure and promoting applied research, which would help to improve the current procedures of analysis and informed decision making in the line departments and by the community. A national campaign for water literacy needs to be started for capacity building of different stakeholders in the water sector.

16. IMPLEMENTATION OF NATIONAL WATER POLICY

16.1 National Water Board should prepare a plan of action based on the National Water Policy, as approved by the National Water Resources Council, and to regularly monitor its implementation.

16.2 The State Water Policies may need to be drafted/revised in accordance with this policy keeping in mind the basic concerns and principles as also a unified national perspective.

(Adl)

Date Chart

Date	
- 16th March 2007	Odisha State Water Policy
2012	National Water Policy
Febuary 2019	Journal for humanities and Science by Kendrapara Autonomous College
26th December 2021	Representation filed before Executive Engineer
23rd January 2022	Representation filed before Kendrapara Municipality
30th January 2022	Representation filed before Collector and District magistrate Kendrapara

VAKALATNAMA

IN THE NATIONAL GREEN TRIBUNAL, EASTERN ZONE, KOLKATA

OA No **Of 2022**

Between

RABEYA TABASSUM ... **Petitioner**

Versus

UNION OF INDIA & OTHERS ... **Opp.Parties**

Know all men by these presents, that by Vakalatnama. I/we,
Rabeya Tabassum aged 54 years W/o Sk Sabir Ali At/PO- Jobra, Majhi Sahi Cuttack-753003

Plaintiff/Defendant/Appellant/Respondent/ Petitioner/ Opposite Party in the aforesaid Suit/Appeal/ Case do hereby appoint and retain, **AFRAAZ SUHAIL,OMKAR DEVDAS, SUJATARANI DASH,** Advocates, to appear for me/us in the above case, and to conduct and prosecute (or defend) the same and all proceedings that may be taken in respect of any application connected with the same or any decree or order passed therein including all applications for return of documents or receipt of any moneys that may be payable to me/us in the said case and also in applications for review in appeals under Orissa High Court Order and in applications for leave to appeal to Supreme Court, I/we authorize my/our Advocate(s) to admit any compromise lawfully entered in the said case.

Dated 16/02/2022

Received from the executant(s)
through certify that I hold no
brief for the other side,
satisfied and accepted

Afraaz Suhail O-367-2017
Mob-9040535655
Advocate

Rabeya Tabassum
SIGNATURE OF THE EXECUTANT(S)

Accepted as above

Sujatarani Das O-597-2016
Advocate Mob-9178423419
Accepted as above

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(Advocate)