

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
CENTRAL ZONE BENCH AT BHOPAL  
EXECUTION APPLICATION NO. 02 OF 2024  
IN  
ORIGINAL APPLICATION No. 94 OF 2022 (CZ)**

**IN THE MATTER OF:**

**M/S. SAMBHAR SALT LTD.**

**...APPLICANT**

**VERSUS**

**UNION OF INDIA & ORS.**

**...RESPONDENTS**

**INDEX**

<b>S. No.</b>	<b>Particulars</b>	<b>Page No.</b>
1.	Factual Report on behalf of the Respondent No. 3 State of Rajasthan Through Chief Secretary & Respondent No. 7- State Wetland Authority through Secretary, Department of Environment, Forest & Climate Change, Government of Rajasthan.	1 – 4
2.	<b>Annexure R/1:</b> True Copy of the Temporary injunction order dated 27.07.2023 in Civil Misc. Case No. 26/2023.	5 – 18
3.	<b>Annexure R/2:</b> True Copy of Integrated Environment Management Plan of Sambhar Lake Wetland.	19 – 124

Drawn on: 20.06.2024

Filed on: 01.07.2024

Place: New Delhi

FILED BY



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M/S. SAMBHAR SALT LTD.

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FACTUAL REPORT IN EXECUTION APPLICATION NO.  
04/2024 ON BEHALF OF THE RESPONDENT NO. 3  
& RESPONDENT NO. 7.

MOST RESPECTFULLY SHOWTH:-

1. The present Factual Report is being filed on behalf of the State of Rajasthan Through Chief Secretary i.e., Respondent No. 3 and State Wetland Authority through Special Secretary, Department of Environment, Forest & Climate Change, Government of Rajasthan i.e., Respondent No. 7 in compliance of order dated 18.03.2024 passed by this Hon'ble Tribunal (*hereinafter referred to as 'Ld. Tribunal'*) in Execution Application No. 02 of 2024 arising out of O.A. No. 94/2022.
2. The above referred O.A. No. 94/2022 (CZ) was filed by Sambhar Salt Ltd. (*hereinafter referred to as 'Applicant'*) which is a subsidiary company of M/s Hindustan Salts Limited, a company

*Charanjeet*

fully owned by the Government of India to take over salt sources at Sambhar, Didwana and Kharaghoda, which were earlier managed by Salt Department, Government of India.

3. It is respectfully submitted that vide Letter dated 23.03.1990 Ministry of Environment and Forest (*hereinafter referred to as 'MoEF'*) was pleased to designate 'Sambhar Lake' as a wetland of international importance upon the proposal made by the Government of Rajasthan on 03.06.1989 and included it in the list of RAMSAR Sites as defined under Ramsar Convention, 1971.
4. It is pertinent to note that the Answering Respondents have submitted the Compliance Report dated 05.04.2024 in abidance of the final order dated 09.11.2023 passed by this Hon'ble Tribunal in O.A. No. 94/2022. The facts of the Compliance Report dated 05.04.2024 are to be read as part and parcel of the present Factual Report which are not being repeated herein for the sake of brevity.
5. In Civil Misc. Case No. 26/2023, an application was filed before the Ld. Additional District Judge of Kuchaman City, Nagaur by Hindustan Salts Limited wherein Temporary Injunction was sought. The Ld. Court vide order dated 27.07.2023 has issued a temporary injunction which directed no interference to be made in the area in question. In view of the said order, the Answering Respondent have not been able to carry out any further work in the said area as the order mandated status quo in the subject area. Moreover, as mentioned in the earlier compliance report and PIL No. C.W.P. 6539/2017 is also pending before the Hon'ble High Court of Rajasthan at Jaipur wherein Applicants are the contesting party. The Applicants are indulging in the malicious litigation at multiple forum which is not sustainable in the eyes of law. A True Copy of the



Temporary injunction order dated 27.07.2023 is annexed herewith and marked as **Annexure R/1**.

6. With reference to the compliance of the of the order dated 09.11.2023 passed by the Ld. Tribunal in O.A. No. 94/2022, the Answering Respondents have taken actions pertaining to demarcation of the boundary area of the lake way back in the past years. Moreover, the Revenue department has constituted a Committee for the purpose of carrying out the work of demarcation of boundary. However, it has been identified that the demarcation of the area could not be completed due to operation of temporary injunction as directed by the Ld. District Court, Nagaur vide order dated 27.07.2023 in Civil Misc. Case No. 26/2023.
7. Moreover, it is humbly submitted that in compliance of final order in O.A. 94/2022, the Department of Environment, Forest and Climate Change has made an "*Integrated Environment Management Plan of Sambhar Lake Wetland*" which was sent for approval to the State Wetland Authority, Government of Rajasthan. The said management plan has been principally approved by the State Wetland Authority i.e., Respondent No. 7 herein on 27.06.2024. A True Copy of "*Integrated Environment Management Plan of Sambhar Lake Wetland*" is annexed herewith and marked as **Annexure R/2**.
8. It is pertinent to inform this Hon'ble Tribunal that some delay has been caused due to the Assembly Election in the State of Rajasthan which took place on 25.11.2023 whereby the Code of Conduct was enforced in the State from 09.10.2023 to 05.12.2023. Furthermore, in view of General Elections, 2024, the initiation which has been taken towards the demarcation of the boundary area could not be completed and is yet underway.

*Charmjeet*

पर्यावरण एवं जलवायु परिवर्तन विभाग  
सचिवालय, जयपुर

9. In the light of the facts stated, it is humbly prayed before this Ld. Tribunal that an extension may be granted to the Answering Respondents to comprehensively comply with the final order in O.A. No. 94 of 2022 passed by this Ld. Tribunal.
10. The Answering Respondents hereby undertake to comply with the final order in its letter and spirit as soon as possible.
11. The delay in compliance is neither intentional nor wanton or deliberate. The Answering Respondents undertakes to take necessary steps as directed by this Hon'ble Tribunal.

**RESPONDENT NO. 3 & 7**

**THROUGH**

*Dharmjeet*

पर्यावरण एवं जलवायु परिवर्तन विभाग  
डी.डी.ओ.ओ. जयपुर  
**Dharmjeet Singh Charan**  
**Law consultant**

**Officer-In-Charge for Respondent No.3 & 7**  
**Department of Environment & Climate Change,**  
**State of Rajasthan**

**IN THE COURT OF ADDITIONAL DISTRICT JUDGE,  
KUCHAMANCITY, DISTRICT NAGPUR  
Presiding Officer :- Sundar Lal, Kharol, R.J.S.  
(District Judge Cadre)  
Civil Miscellaneous Case No.: 23/2023**

**Hindustan Salts Limited  
and others**

**...Applicants**

**Versus**

**State of Rajasthan  
Through Chief Secretary & Ors.**

**...Respondents**

**Present**

1. On behalf of the plaintiffs Advocates, Sri Mukesh Kumar Ajmera Sri. Mohammad Islam
2. On behalf of defendants Govt. Advocate, Shri Daulat Khan  
no. 1, 3, 4 to 7
3. On behalf of defendant no. Advocate, Shri Vinod Bagra  
2 (ii)
4. On behalf of defendant no. Advocate, Shri Mohammad  
1 (iv) and (v) Hanif

**Application seeking Interim temporary injunction**

**Dated:- 27.07.2023**

**:- Order :-**

1. By this order, the application seeking interim temporary injunction filed by the applicants/plaintiffs is being disposed of.
2. The applicants by filing application seeking temporary injunction has stated that the applicant company Hindustan Salts Limited, is an undertaking of Government of India and it works in subordination and under the control of Non-Applicant no. 02 which is government company registered under Section 617 of

the Companies Act, 1953. The associate company of applicant company is Sambhar Salts, Ltd. which in subordination and under the control of Hindustan Salt Limited does work to produce and distribute salt in the Sambhar lake. The total area of the world heritage Sambhar Lake is more than 90 square miles. In the year 1990 Sambhar Lake has been declared to be International level wetland and its wetland gap has also been issued, in which the boundaries of the lake are clearly marked. In the year 1902-03 and 1949-50 also, the Survey of India, department of the Government of India in the year 1902-03 and 1949-50 has clearly shown the boundaries of Sambhar Lake, the rivers falling into it, drains, salt production areas, railway lines, salt beds, pens, wells, landmarks, temples and other structures and the above structures are still situated on the spot. The applicant company and Sambhar Salts Limited produce good quality edible salt for the general public of India and distribute it all over India. To conduct related activities, the applicant has many lands and offices Labor Quarters, Officers Quarters, Bungalows, Circuit House, Transit House etc. salt sources are situated in revenue village Markoti, Kochya ki Dhani, Sagar, Gudha Salt by using which the applicant company operates salt production and related activities in Sambhar Lake. The subsidiary company of the applicant company, Sambhar Salts Limited (a Government of India undertaking) utilizes and consumes all the above properties and salt sources in Sambhar Lake and operates salt production and related activities and takes care of all the above properties. The ownership and possession of the entire lake, all the above salt sources and properties is vested in the applicant company Hindustan Salt Limited.

3. The applicants have also mentioned in the application that before independence, the British Government (the then Government of

India) acquired the entire Sambhar Lake from the Jaipur and Jodhpur courts through treaties in the years 1869, 1870 and 1879 and started salt production and related activities. Since then, all the properties relating to Sambhar Lake are continuing in the ownership and control of the British Government. After independence, the entire lake owned and occupied by the British Government and all the properties relating to it have vested in Government of India under the same treaties under Article 205 of the Indian Constitution by which these were governed in earlier. According to the agreement entered between His Excellency the President of India and the heads of state in the year 1950, Sambhar Lake and all the salt sources were given on lease to the Government of India till the year 1960, by using which the production of salt was done by the Salt Department of the Government of India till the year 1960. Meanwhile, on the decision of His Excellency the President of India, on 13-01-1959, the Ministry of Commerce and Industry of the Government of India transferred the ownership and management of salt sources of Sambhar Lake, Didwana Lake (Rajasthan) and Kharaghoda (Bombay) to Hindustan Salts Limited. Since then the applicant company has been in ownership and possession of Sambhar Lake and all the properties related to the lake and as per the conditions mentioned in the said letter, the applicant company is producing salt by using and consuming all the said salt sources.

4. The applicants have also mentioned in the application that after the expiry of the agreement entered between His Excellency the Hon'ble President of India and the heads of states in the year 1950, the Government of India and the Government of Rajasthan, in view of the national interest, took decision to keep continue the lease treaties existing since earlier in favor of

Government of India for doing the production of salt from Sambhar Lake and from all the salt sources. After this, to end the royalty to be paid by the Government of India to the Government of Rajasthan on salt sources, Sole-Arbitrator Shri V.T. Krishnamachari was appointed, who after hearing the sides of both the governments, passed an award on 29-04-1961 and gave Sambhar Lake and all the salt sources of Sambhar Lake to the Government of India on lease for 99 years and in return it was decided to pay Rs. 5.50 lakh per year to the Government of Rajasthan by Government of India. After the accepting the award passed by Shri V.T. Krishnamachari, by the government of Rajasthan, the said award was published in the Gazette Notification of the Government of India on 19.08.1961. Under the award of Shri V.T. Krishnamachari and gazette notification, the subsidiary company of plaintiff company was constituted and lease rent of Rs.5.50 lakh of all salt sources and properties of Sambhar Lake, Lake is being paid by plaintiff company to the Government of Rajasthan. The above Shri V.T. Krishnamachari award and gazette notification 1961 is still effective and is binding on both the governments.

5. The applicants have also mentioned in the application that the disputed old land Khasra No. 300, 302, 578, 579, 580, 581, 583, 584, 856, 587, 588, 589, 590, 591, 620, 621 M 622, 623, 625, 626, 527, 527. 629, 630 & 631, 643, 644, 645, 996, 1009, 1010 Total Kita 21 Area 9043 Bigha 10 Biswa is situated in village Nawan and the type of above land in Revenue Records Jamabandi sambat 1981 is recorded as Paramath and Samand and the above category is unchangeable. The new Khasra numbers of the said land are 1781 to 1788, 1173, 1175, 1180 to 1193, 1195 and 1203 to 1209, 1805, 1807, 1873/1188, 1874/1191 1937/1805, 1938/1805, 1953/1805, 1941/1203,

1954/1203 1983/1805 to 1988/1805, 1790, 1797 to 1803, 1174. In the year 1983, in the information sent by Tehsildar Nawana to the Land Management Officer, Jaipur, has clearly accepted that Khasra No. 302, area 2508 bigha 6 Biswa category gair mumkin Samand, Khasra No. 996/1 area 90 Bigha 13 Biswa category gair mumkin Samand, Khasra no. 1009/88 Area 582 Bigha 13 Biswa Khasra No.1010/622 Area 694 Bigha 13 Biswa Gair Mumkin Samand, Khasra No.622 Area 2693 Bigha 13 Biswa and Khasra No.996 Rakwa 1419 Bigha Land that the area of the said land falls in Sambhar Lake. From this it becomes clear that the disputed land is the land of Sambhar Lake, in which the state government or any other person has no right or title.

6. The applicants have also mentioned in the application that the land of the disputed lake mentioned in item No. 7 of the plaint at the time of the first settlement, due to the mistake of the settlement employees, and going contrary to spot position, the said land has been recorded as government-Siwai chak land in the revenue records and without the permission of any competent officer, the unchangeable nature of the said land has been changed, which is absolutely illegal. Whereas the said land is an integral part of Sambhar Lake and during the rains, the said land gets filled with water, by using and consuming which the company does the work of production of salt. In new Khasra No.2111/1803, 1800 of Khasra No.996, and in new Khasra No.1805 of Khasra No.622 the encroachers by encroachment are constructing Kharda for illegal salt production. Chalis mora made in Khasra No. 996M going through which Minda River flows into Sambhar Lake, in between of the same and in front of Chalis Mora, from dated 14-02-2023, illegal salt pans and rooms are being consructed secretly during the night with the help of heavy machines, JCB, tractors. The Non-Applicant No. 7

Mining Engineer, Mines and Geology Department has given permission to exploit soil on the land situated within the boundaries of Sambhar Lake Wetland without spot inspection in its order No.989, 993 dated 21-03-2023 and order NO. 1850 dated 05-06- 2023. In regard to above orders and the encroachments being made, the applicant company has given several complaints to District Collector Nagaur, Sub Divisional Officer Nawan and Tehsil Nawan and has given letters for getting stopped the illegal exploitation of lake soil and construction of new mines for production of illegal salt. But till date no effective action has been taken by the Non-Applicants no. 1, 3, 5 and 6, due to which the Wetland Rules-2017 are being violated.

7. It has also been mentioned in the application by the applicants that the Hon'ble Rajasthan High Court in the matter of Abdul Rahman has given clear direction to the state government that the situation before dated 15-08-1947, land of river, drains its category and status of which has been changed after dated 15-08-1947 in revenue record, if any kind of transfer or category of land has been changed, then the same be cancelled and the status of 15-08-1947 should be restored and all encroachments be removed from such type of land. In this regard, applications were submitted by the applicant company before the concerned authorities, but no action has been taken by District Collector Nagaur, Sub Divisional Officer Nawan and Tehsildar Nawan and Non-Applicants No.3, 5, 6 and 7. Revenue Group (4) by order No. P.8 (5) Raj./4/2000 Jaipur dated 22-11-2002 of Government of Rajasthan, directions have been given to the Khudkasht Commissioner and all the District Collectors that allotment of Khudkasht land shall not be done in any manner to the former Jagirdars same be done only in reserved area for this

purpose in the second phase of Indira Gandhi Canal Project. Despite this, the allotment of Sambhar Lake Wetland land has been done by the Khudkasht Commissioner, which being contrary to the law is void and ineffective since beginning.

- 8- The applicants have also mentioned in the application that the Revenue Group (3)-Department Government of Rajasthan by its order No.P.3 (24) Raj-3/02 Jaipur dated 27-12-02 Jaipur has ordered to the District Collector Nagaur that land should not be allotted in the salt area of Sambhar Salts. If any allotment has been made in salt area then do not give possession. After this, the Industries (Group-2) Department Government of Rajasthan by its letter dated 18-10-2004 has directed that let action be taken to cancel the allotment of the land given on lease to any other person in Sambhar Salt Limited. From this it is totally clear that the disputed land is the land of Sambhar Lake Wetland. Due to not taking any legal action against the encroachers for encroaching on the wetland land, the ecological system of Saumbhar Lake is being seriously adversely affected and a large part of the lake has been damaged.
9. The applicants have requested to restrain the Non-Applicants by interim temporary injunction of this intention that during pendency of suit they shall do exploitation of soil illegally and restrain from making kharda of salts being made illegally over the land mentioned in para- 8 of the application within the boundaries of Sambhar Lake Wetland map and considering the importance of Sambhar Lake wetland, order may please be passed for removal of illegal encroachments being done between Bhinda River and 40 Mora, so that the water of monsoon rains in the near future can come into Sambhar Lake in full free flow and order may please be passed to protect the ecological system of the lake. They shall not allot/ transfer land situated within the

boundaries of the Sambhar Lake Wetland map to any other person or institution and nor shall evict applicant company from the said land nor create any hindrance in its use and enjoyment.

10. On behalf of Non-Applicants reply to the application has not been filed and request has been made directly for oral argument.
11. Heard entire arguments of both the parties and perused the record.
12. During arguments, the learned counsel for the applicants/plaintiffs, while reiterating the facts mentioned in the application filed by him, has contended that the applicant company Shambhar Salts Limited by producing good quality edible salt for the general public of India is distributing it all over India for which purpose various administrative and residential buildings have been constructed in its office situated in Sambhar. Before independence, the entire Sambhar Lake was acquired by the British Government from Jaipur and Jodhpur Darbar by treaties of the year 1809, 1870 and 1879 and started salt production and related activities. In the year 1950, after the expiration of the agreement entered between His Excellency the President of India and state heads, the Government of India and the Government of Rajasthan, considering the interest of nation, took decision to keep continue the lease (treaties) existing since earlier in favor of Government of India for doing production of salt from Sambhar lake and all salt sources. Sri V.T. Krishnamachari by passing an award on 29.4.1964 gave entire salt sources of Sambhar Lake and Sambhar lake to the government of India for 99 years and in lieu thereof it was decided that Government of India shall pay Rs.5.55 lakh per year to the Government of Rajasthan. After accepting the award

passed by V.T. Krishnamachai by Rajasthan Government, the said award was published in the Gazette Notification of the Government of India on 19.08.1961. As mentioned in para No.8 of the application, the land is unchangeable Sambhar lake land. The State Government or any other person has no right or authority to interfere in the said land.

13. During argument the learned counsel for the applicants has also contended that in the year 1990, Sambhar Lake was declared to be wetland and wetland map was issued and above map was adopted in Ramsar convention. According to Wetland Rules 2010 and 2017 all types of wetland activities are completely prohibited within the boundaries of the wetland. The land of disputed lake at the time of the first settlement, due to mistake of the settlement employees, and going contrary to the spot position, the above land has been recorded as government Siwaichak in revenue record and unchangeable nature of above land has been changed. The encroachers by doing encroachment in new Khasra number 2111/1803, 1800 of Khasra number 996 and new Khasra number 1805 of Khasra number 622 are doing construction of new Kharda for production of illegal salt. The challis mora made in khasra No. 996 through which Bhinda river goes in Sambhar lake in between same and in front of Chalis mora from dated 14-02-2023 onwards, construction of illegal salt pans and rooms are being done secretly in night time with the help of heavy machines, JCB and tractors. The Non-Applicant no.7 without inspection of spot, has illegally granted permission to exploit soil within the boundaries of wetland of Sambhar Lake due to which the Wetland Rules-2017 are being violated and the ecological system of Sambhar Lake is being seriously adversely affected. The applicant has sent applications regarding this to the State Government and others from time to

time, but no action is being taken by them. Hence, the Non-Applicants be restrained by an interim temporary injunction to the effect that they shall not allot or transfer the land situated within the boundaries of the Sambhar Lake Wetland Map to any other person or institution and nor shall evict the applicant company from the said land nor create any hindrance in its use and enjoyment. The learned counsel for the applicants has referred the following judicial precedents in support of his arguments:-

1. 2023(1) DNJ (Raj) 188 Prem singh & Ors Vs. Gautam & Ors.
2. 2023(1) DNJ (Raj.) 191, Suman devi sharma & Ors. Vs. Kukmaram & Ors.
3. 2021(2) RRT 1204, Lachhmi Naranin Singh through Lrs. & Ors. Vs. Sarjug singh.
4. 2022(2) RRT 1217 State Vs. Rameshwar
5. 2022(2) RRT 1219, Bhanwar Lal Vs. Nanuram & Ors.
6. 2019(2) CJ (Civ) (Raj) 905, Girish kumar Vs. Rajesh kumar & Ors.
7. 2019(1) CJ(Civ) (Raj) 135, Santosh Boobna Vs. Ramavtar Kandoi & Anr.
8. 2018(2) CJ (Civ) (Raj) 1317 Badrikashram joshi, Charitable trust jaipur Vs. R.D. Baheti Charitable Trust, Jaipur & Anr.

9. 2018(3) CJ (Civ) (Raj) 1850 Swati Bhatia Vs Lalit Upadhyay Shastri & Anr.
10. 2016 (1) CJ (Civ) (Raj) 69 Shahrukh khan Vs. Ismail @ Munna
11. 2016(20) CJ (Civ) (Raj) 822, Manak Chand Vs. Sampat Rai & Ors.

By opposing this, the learned counsel for the Non-Applicants have jointly contended that the applicant company has not got any ownership and possession in respect of the Khasra numbers of land mentioned in para No. 3 of the application by the applicants. The company of the applicants has been authorized only for the production of salt with the consent of the Government of India and the State Government. The Khasra number land which has been mentioned by them in their application no document of its ownership has been filed on behalf of applicants. For this reason, there does not arise any legal rights in favor of applicants in regard to disputed Khasra numbers land. In regard to disputed land, various petitions were filed by the applicant company in the Hon'ble Rajasthan High Court from time to time to get its ownership and rights declared but the Hon'ble Rajasthan High Court did not accept the petitions of the applicants, whereby it proves that the applicants do not get any kind of title or rights over Sambhar Lake. At the place in question there are situated the land of farmers, in which they earn their living by doing agriculture and stone production business. Since the applicants do not have any ownership and possession in the disputed land, therefore they are not entitled to get any kind of relief. The State government has not declared the Sambhar Lake and area nearby to it to be wetland and nor has

issued any notification in this regard. Whatever orders have been passed by the competent authorities, those have been passed keeping in mind the provisions of the law and the situation of spot. Therefore, the applicants are not entitled to get any interim injunction at this stage. Hence, the request has been made to reject the prayer of interim temporary injunction of the applicants. In support of its arguments the following judicial precedents have been referred:-

1. Civil revision Petition No. 955/99 Decided on 08-09-1999 (Rajasthan) Chief General Manager State Bank of India and others Vs. Brij Mohan Shukla.
  2. 1997 DNJ (SC) 6, Hanumam Thappa Vs. Muninrayanappa.
  3. 2014(1) civil Court Cases 327 Raj, Chotu meena Vs. M/s osho Real Estate & Ors.
  4. AIR 1999 Raj 361, Pirtha Singh Vs. Laxman Singh and Ors.
  5. D.B. Civil Writ Petition No. 48/2022 Decided On 14-07-2022 Jaisa Ram V/s State Rajasthan.
  6. 1983 AIR (SC) 1272 Cotton Corporation of India Limited V/s United Industrial Bank Limited & Ors.
14. I have considered the above arguments advanced on behalf of both parties. I have got important guidance by carefully observing and studying the judicial precedents referred by both the parties.

- 15- The applicants have told the properties of rakba mentioned in para 8 of the application filed by them to be the land of Sambhar Lake and have told that Sambhar Lake has been declared to be wetland and map of wetland has been issued and the said map has been adopted in Ramsar convention. It has been requested that let the Non-Applicants/encroachers be restrained from illegal encroachment and taking possession illegally over the disputed land/Sambhar lake in wetland, restraining from raising construction of illegal salt kharad and from illegal exploitation of soil from the lake land.
16. According to document filed by the applicants Sambhar Lake Treaty Jaipur dated 07-08-1869, Sambhar Lake Treaty Jaipur dated 15-02-1870, Sambhar Lake Treaty 26-07-1870, Treaty between Government of India and state heads Rajasthan dated 25-02-1950 it reveals that the right to produce salt in Sambhar Lake has been granted to Sambhar Salt by the competent authority.
17. Similarly, according to award dated 29-04-1961 of V.T. Kashnamachari, the fact of lease of salt production between the Ministry of Commerce and Industry, Government of India and the Government of Rajasthan reflects. According to Gazette Notification 1961, 1976-9A, the fact that the entire land of the lake has been given on lease to Sambhar Salt is reflected. According to the transfer of possession letter with list of fields dated 13-02-1924, it reveals that the authority to produce salt in the land mentioned therein has been granted to Sambhar Salt.
18. According to the documents presented by the applicants, from the Government of Rajasthan, Revenue (Group-3) Department's

letter No. 3(24) Raj-3/02, Jaipur dated 27-12-2002, it reveals that the land of Sambhar Salt is not to be allotted to anyone else, according to the order dated 18-10-2004 of Rajasthan Government, Industries (Group-2) Department, there is provision to cancel the allotment of the land given on lease to Sambhar Salt Limited to someone else and according to order dated 18.06.1990 of Sub-Divisional Officer Parbatsar direction has been given to remove encroachment from that area.

19. Whatever documents have been filed by the applicants relating to Wetland Rules, Gazette Notification, 2017. Sambhar Salt Management Committee, 2021, the same reflects the fact that the applicant company has been given the authority to produce salt from the disputed land. Similarly, according to orders dated 27-12-2002 and dated 18-10-2004 issued by the State Government, an order has been passed regarding not transferring the land under dispute to anyone else. From the perusal of other documents this demonstrates that the land given on lease to Sambhar Salt comes under the category of WETLAND. If any kind of commercial, trade or agricultural related activities are carried out by encroachment on the said land by private individuals, then there will be a possibility of being adversely affected the ecosystem of that place. The pleadings of the Applicants presented photographs and other documents reflect the fact that construction work is being done by private individuals in and around the waterways of Minda River. If any kind of construction work is done in the flow area of the river and its surrounding areas or if soil and other minerals are extracted from there, then there is a possibility of the natural flow area of the river getting blocked and limited. Therefore, at this stage it appears justified to restrain the Non-Applicants by interim temporary injunction.

20. As a result, after accepting the prayer of the applicants/plaintiffs for interim temporary injunction, the Non-Applicants are restrained by interim temporary injunction till the next date of hearing that they shall maintain status quo on spot.
21. The order has been dictated signed and stamped today on 27.07.2023 in open court.

**Sd/-27.07.2023**  
**(Sunderlal Kharol)**  
**Addl. District Judge Kuchamancity**  
**District Nagaur Rajasthan**

**//True translated copy//**

October, 2023  
ANNEXURE R/2

**PLAN**

# Draft Management Plan for Sambhar Lake



**Submitted to:**

**Department of Environment and Climate Change,  
Government of Rajasthan, Jaipur**

**Submitted by:**

 **PDCOR Limited**

First Floor, Press Trust of India Building, 5-B, Jhalana Doongri Institutional  
Area, Jaipur - 302 004, Rajasthan, India

**TABLE OF CONTENTS**

2	INTRODUCTION.....	1
2.1	BACKGROUND AND CONTEXT.....	1
2.1.1	ABOUT RAMSAR CONVENTION.....	1
2.1.2	ABOUT AMRIT DHAROHAR.....	1
2.1.3	BRIEF OVERVIEW OF SAMBHAR SALT LAKE.....	1
2.1.4	IMPORTANCE OF THE LAKE IN THE REGION.....	1
2.1.5	PURPOSE AND SCOPE OF THE MANAGEMENT PLAN.....	2
2.1.6	OBJECTIVES.....	3
3	BASELINE ECOLOGY OF SAMBHAR LAKE.....	5
3.1	PHYSICAL CHARACTERISTICS.....	5
3.1.1	LAKE'S SIZE, DEPTH, AND SALINITY LEVELS.....	5
3.1.2	CLIMATE.....	5
3.1.3	TOPOGRAPHY.....	6
3.1.4	GEOLOGY & MINERALOGY.....	6
3.1.5	HYDROLOGY AND CATCHMENT AREA OF SAMBHAR LAKE.....	7
3.1.6	HABITATS AND ECOSYSTEM COMPONENTS.....	7
3.2	BIODIVERSITY.....	8
3.2.1	FLORA.....	8
3.2.2	FAUNA.....	19
3.3	ECOLOGICAL PROCESSES.....	34
3.3.1	WATER INFLOW.....	34
3.3.2	WATER OUTFLOW.....	34
3.3.3	NUTRIENT CYCLING.....	34
3.4	BIRDS FAMILY OBSERVED AT SAMBHAR LAKE.....	35
4	THREAT ANALYSIS & CONSERVATION STRATEGIES.....	40
4.1	IDENTIFICATION OF THREATS & CONSERVATION STRATEGIES.....	40
4.1.1	SALT EXTRACTION.....	40
4.1.2	HABITAT DEGRADATION AND RESTORATION/PROTECTION MEASURES.....	43
4.1.3	POLLUTION FROM NEARBY AREAS.....	44
4.1.4	EPIDEMIC – 2019 INCIDENT OF AVIAN BOTULISM AT SAMBHAR LAKE.....	45
4.1.5	OTHER CONSERVATION MEASURES.....	45
5	TOURISM.....	48
5.1	EXISTING TOURISM ACTIVITIES.....	48
5.1.1	RTDC SWADESH DARSHAN SCHEME – SAMBHAR LAKE IS PART OF DESSERT CIRCUIT.....	48
5.1.2	SALT LAKE.....	50
5.1.3	HISTORICAL PLACES.....	53
5.2	POTENTIAL ACTIVITIES.....	54
5.3	INFRASTRUCTURE AND FACILITIES.....	54
5.4	MARKETING & PROMOTION ACTIVITIES.....	55
6	SAMBHAR LAKE CARBON AND GHG INVENTORY.....	57

7	RECOMMENDATIONS IN VARIOUS OTHER REPORTS .....	58
7.1	NEERI REPORT (2016).....	58
7.1.1	CONSERVATION AND RESTORATION OF GROUND WATER .....	58
7.1.2	GROUND WATER CONSERVATION MEASURES .....	58
7.1.3	BIODIVERSITY CONSERVATION MEASURES .....	60
7.1.4	LEGAL AND INSTITUTIONAL CHANGES .....	60
7.1.5	SOIL AND MOISTURE CONSERVATION .....	61
7.1.6	FORESTRY DEVELOPMENT- .....	61
7.1.7	CATCHMENT MANAGEMENT- .....	61
7.1.8	PUBLIC OUTREACH AND EDUCATION .....	62
7.2	VINOD KAPOOR COMMITTEE (2010).....	62
7.3	MOEF&CC RECOMMENDATIONS (2017).....	63
7.4	REPORT OF MOEF & CC (2019).....	64
7.5	RECOMMENDATIONS OF CO-ORDINATION WORKSHOP BY FOREST DEPARTMENT, GOVERNMENT OF RAJASTHAN: .....	65
7.6	OTHER REFERENCE REPORTS .....	65
8	LEGAL AND POLICY FRAMEWORK .....	67
9	SUMMARIZED MANAGEMENT PLAN & RECOMMENDATIONS .....	69
10	ANNEXURES .....	72

**LIST OF FIGURES**

FIGURE 1: COMPARISON OF LAKE WATER LEVELS WITH THE ANNUAL RAINFALL IN THE AREA ...	6
FIGURE 2: NUMBER OF BIRD FAMILIES OBSERVED AT SAMBHAR LAKE:.....	36
FIGURE 3: NUMBER OF SPECIES OBSERVED AT SAMBHAR LAKE: .....	36
FIGURE 4: NUMBER OF MIGRATORY AND RESIDENT SPECIES OBSERVED AT SAMBHAR LAKE: .	36
FIGURE 5: BIFURCATION OF BIRDS ON BASIS OF CARNIVOROUS, HERBIVOROUS & OMNIVOROUS:.....	37
FIGURE 6: YEAR WISE DETAIL OF BIRDS FAMILY:.....	37
FIGURE 7: LAND USE LAND COVER .....	41
FIGURE 8: LOCATION OF DAMS/ANICUTS/CHECKDAMS/SILT TRAPS/ IN THE SAMBHAR LAKE CATCHMENT AREA .....	43

**LIST OF TABLES**

TABLE 1: CLEAR AND MEASURABLE OBJECTIVES FOR THE CONSERVATION OF SAMBHAR SALT LAKE .....	4
TABLE 2: TREES .....	9
TABLE 3: GRASSES.....	11
TABLE 4: SHURBS .....	13
TABLE 5: HERBS.....	15
TABLE 6: MIGRATORY BIRDS FOUND IN AND AROUND SAMBHAR LAKE .....	20
TABLE 7: RESIDENT BIRDS FOUND IN AND AROUND SAMBHAR LAKE .....	28
TABLE 8: ALGAE FOUND IN AND AROUND SAMBHAR LAKE .....	30
TABLE 9: ANIMALS FOUND IN AND AROUND SAMBHAR LAKE.....	33

**LIST OF ANNEXURES**

ANNEXURE I: GOOGLE EARTH IMAGES .....	73
ANNEXURE II: LULC (LAND USE LAND COVER) DETAILS .....	74
ANNEXURE III: SWADESH DARSHAN - BUDGET DISTRIBUTION & SCOPE OF WORK FOR SAMBHAR LAKE .....	75
ANNEXURE IV: SAMBHAR LAKE MANAGEMENT AGENCY .....	84
ANNEXURE V: APPOINTMENT OF NODAL OFFICER.....	102

# 1 INTRODUCTION

## 1.1 BACKGROUND AND CONTEXT

### 1.1.1 About Ramsar Convention

The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat is an international treaty for the conservation and sustainable use of Ramsar sites (wetlands). It is also known as the Convention on Wetlands. It is named after the city of Ramsar in Iran, where the convention was signed in 1971.

Every three years, representatives of the contracting parties meet as the Conference of the Contracting Parties (COP), the policy-making organ of the convention which adopts decisions (resolutions and recommendations) to administer the work of the convention and improve the way in which the parties are able to implement its objectives. Out of total 2493 wetlands, there are 75 listed Ramsar sites in India

### 1.1.2 About Amrit Dharohar

The Amrit Dharohar scheme is a visionary initiative by the Indian government that aims to preserve the natural beauty and diversity of the country's wetlands. Over the next three years, the scheme will work towards promoting the optimal use of these valuable ecosystems. Doing so will not only increase eco-tourism and carbon stock but also help the local communities in generating sustainable income.

This scheme, unveiled by Union Finance Minister Nirmala Sitharaman during her 2023 budget speech, aims to foster sustainable ecosystem development with the help of local communities. This article explores the various facets of this scheme and its significance in preserving India's wetlands and cultural heritage.

With the Amrit Dharohar scheme, the government aims to promote the conservation values of Ramsar sites, enhance biodiversity, and generate income for local communities.

### 1.1.3 Brief Overview of Sambhar Salt Lake

Sambhar Lake is one of the two Ramsar sites in Rajasthan – the other one is the Keoladeo National Bird Sanctuary at Bharatpur, sites identified as 'wetlands of international importance' listed under the Ramsar Convention of 1971. Sambhar Lake was designated as a Ramsar site in March 23, 1990 due to its biological and biotic importance and in particular because of a wintering area for tens of thousands of flamingos, pelicans, and other migratory birds from Northern Asia.

### 1.1.4 Importance of the lake in the region

Sambhar Lake is considered ecologically significant due to its saline nature and the presence of unique flora and fauna adapted to extreme salinity. It supports a diverse range of bird species, including flamingos, pelicans, storks, and many others. The lake serves as a critical wintering ground and stopover site for migratory waterfowl and wading birds that travel along the Central Asian Flyway. Thousands of

migratory birds depend on the lake's resources during their journey, making it a vital habitat for these species.

### 1.1.5 Purpose and scope of the management plan

As a Ramsar site, Sambhar Lake is subject to international conservation commitments. India, as a party to the Ramsar Convention, is obligated to protect and preserve the ecological character of the site, maintain its water quality, and ensure sustainable land use practices in the surrounding area. The Ramsar designation of Sambhar Lake underscores its global significance as a wetland ecosystem and highlights the need for its protection and sustainable management. It is part of a broader international effort to safeguard wetlands worldwide and maintain their ecological integrity for the benefit of both wildlife and people.

The purpose and scope of a management plan for Sambhar Lake, as per the Ramsar Convention on Wetlands of International Importance, are to ensure the sustainable conservation and wise use of this ecologically significant wetland. A Ramsar management plan for Sambhar Lake should align with the overarching goals of the Ramsar Convention, which focuses on the conservation and sustainable use of wetlands. It should be comprehensive and adaptive, taking into account the dynamic nature of wetland ecosystems and the need for ongoing conservation efforts to protect Sambhar Lake's ecological integrity and its Ramsar status.

Here's an outline of the purpose and scope of such a management plan:

#### 1.1.5.1 Purpose:

**Conservation:** The primary purpose of the management plan is to conserve the ecological character and biodiversity of Sambhar Lake, recognizing its international importance as a Ramsar Wetland.

**Sustainable Use:** The plan should promote the sustainable use of the wetland's resources, including salt extraction, while ensuring that these activities do not harm the ecosystem.

**Protection of Migratory Birds:** One of the specific purposes is to safeguard the critical habitat provided by Sambhar Lake for migratory birds, particularly those using the Central Asian Flyway.

**Scientific Research and Monitoring:** The plan should facilitate scientific research and monitoring efforts to assess the ecological health of the lake, track changes over time, and inform adaptive management.

**Community Engagement:** It should engage and involve local communities, stakeholders, and relevant authorities in the conservation and management of the wetland.

**Education and Awareness:** Promote education and raise awareness about the ecological significance of the lake among local communities, tourists, and the general public.

**Compliance with International Obligations:** Ensure compliance with India's obligations as a party to the Ramsar Convention, which include the conservation of Ramsar-listed wetlands.

#### 1.1.5.2 Scope:

**Ecological Assessment:** Conduct a comprehensive ecological assessment of Sambhar Lake to understand its physical characteristics, biodiversity, and ecological processes. Identify key habitats and species.

**Threat Analysis:** Assess existing and potential threats to the wetland, including salt extraction, habitat degradation, pollution, invasive species, and water management practices.

**Conservation Strategies:** Develop and implement strategies to address the identified threats, such as sustainable salt extraction practices, habitat restoration, pollution control, invasive species management, and water management plans.

**Visitor Management:** Develop responsible visitor management guidelines, including the promotion of ecotourism, to minimize the impact of human activities on the wetland while educating visitors about its importance.

**Community Involvement and Public Awareness:** Engage with local communities and involve them in conservation efforts, recognizing their role as stakeholders and guardians of the wetland. Public awareness campaigns need to be developed for information to the public, schools, and institutions about the ecological significance of Sambhar Lake and the importance of its conservation.

**Research and Monitoring:** Establish monitoring programs to track changes in the wetland's condition, including water quality, flora and fauna, and the effectiveness of conservation measures.

**Legal Framework:** Ensure that the management plan aligns with national and regional laws and regulations related to wetland conservation and land use.

**Evaluation and Review:** Set up a framework for periodic evaluation and review to assess the effectiveness of the management plan, make necessary adjustments, and ensure its continued relevance.

#### 1.1.6 Objectives

Clear and measurable objectives are essential for the effective conservation of Sambhar Salt Lake. These objectives provide a specific focus and direction for conservation efforts, allowing stakeholders to track progress and evaluate the success of conservation initiatives. These objectives should be specific, quantifiable, achievable, relevant, and time-bound (SMART).

Here are some clear and measurable objectives for the conservation of Sambhar Salt Lake:

Table 1: Clear and measurable objectives for the conservation of Sambhar Salt Lake

S.No.	Objective	Target
1	Reduce the impact of salt extraction on the lake's ecosystem	Maintain sustainable salt production levels for protection of lake ecosystem
2	Protect Biodiversity of the lake	Protection and increase in the biodiversity of the lake through focusing on the key areas
3	Protect and restore critical bird habitats within the wetland	Increase the coverage of protected bird habitats, focusing on key areas used by migratory birds. Demarcation & delineation of Wetland
4	Improve water quality and reduce pollution in the lake	Reduce levels of pollutants in the lake's water through enhanced pollution control measures.
5	Raise awareness and promote responsible visitation to the lake	Visitors should be educated about responsible visitation practices
6	Engage local communities in wetland conservation	Community-led conservation initiatives involving local population in conservation activities
7	Enhance scientific research and monitoring of the wetland	Conduct research projects on Sambhar Lake's ecology and biodiversity with findings contributing to adaptive management
8	Achieve Ramsar Convention compliance and recognition	Ensure full compliance with Ramsar Convention obligations, resulting in the continuous Ramsar Wetland of International Importance status for Sambhar Lake
9	Establish a sustainable funding mechanism for wetland conservation	Secure required annual conservation budget through sustainable funding sources
10	Reduce habitat degradation and promote sustainable land use practices in the lake's catchment area	Implement land use policies and practices that reduce habitat degradation, as measured by land cover assessments
11	Minimize water level fluctuations and maintain suitable water levels for the lake's ecology	Maintain a consistent water level range while ensuring the lake's ecological requirements are met
12	Achieve a net positive impact on the lake's ecological health	Ecological impact as determined through regular ecological assessments and monitoring
13	Enhance the lake's role as an educational and ecotourism destination	Increase the number of eco-tourists visiting Sambhar Salt Lake
14	Strengthen local capacity for lake management and conservation	Train and equip a local conservation team to independently manage and monitor lake conservation efforts
15	Establish a legal framework for wetland protection and management	Enact and implement wetland protection and management laws and regulations in alignment with Ramsar Convention guidelines

## 2 BASELINE ECOLOGY OF SAMBHAR LAKE

### 2.1 PHYSICAL CHARACTERISTICS

#### 2.1.1 Lake's size, depth, and salinity levels

Sambhar Lake is one of the largest inland saltwater lakes in India. The lake's size can vary significantly depending on seasonal factors such as rainfall and evaporation rates. It can span anywhere from 190 to 230 square kilometers (73 to 89 square miles) during different parts of the year. During the monsoon season, the lake may expand in size, while in the dry season, it can shrink considerably.

The depth of Sambhar Lake is relatively shallow, with an average depth of around 1 to 3 meters (3 to 10 feet). The maximum depth of the lake does not typically exceed 3 meters, making it quite shallow compared to other larger lakes.

Sambhar Lake is renowned for its high salinity levels, which are a defining characteristic of the lake. The salinity of the lake can vary throughout the year, with levels increasing significantly during the dry season when evaporation is more pronounced. The extreme salinity of Sambhar Lake is a result of its unique geological and hydrological conditions. The lake is a closed basin, meaning it has no outlet to the sea, which allows salts and minerals to accumulate over time. The combination of high salinity and shallow depths creates an environment that supports specialized flora and fauna adapted to extreme salt concentrations.

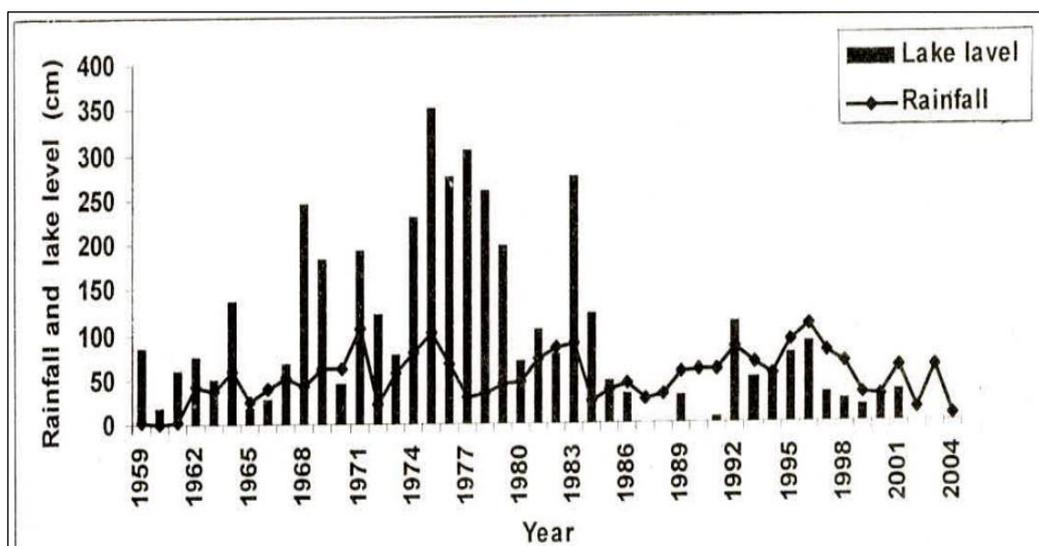
#### 2.1.2 Climate

The area covered by the lake is spread over a transitional climatic zone with arid climate at the west and a semiarid climatic zone towards the east. The climate of the area is influenced mainly by the monsoon and the physiography of the area, i.e., the Aravalli range. The Sambhar Lake is situated on the eastern flank of the Aravalli Mountains, which is in turn is dissected by a number of wind gaps. The climate of the region is tropical monsoonal characterized with summer, monsoon (rainy season) and winter seasons. Annual average rainfall ranges from 550 to 600 mm. The area experiences rains mainly during July to September. The average annual temperature of the area is 23°C with minimum temperature of 8-10°C in winter and maximum temperature of 40-45°C in summer. Comparison of Lake water levels<sup>1</sup> with the annual rainfall in the area is shown below:

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<sup>1</sup> Anthropogenic impact on hydrological balance and water quality in Sambhar Lake Rajasthan by Narendra K. Meena, Department of Earth Sciences, IIT Roorkee

Figure 1: Comparison of Lake water levels with the annual rainfall in the area



### 2.1.3 Topography

Sambhar is a large, shallow saline lake, only about 3 m at its deepest. The maximum length of the lake basin is 22.5 km, while the width ranges from 3.2 km to 11.2 km. The lake bed is almost flat with a slope of less than 10 cm per km. The lake basin is divided into two unequal parts by a 5.16 km long dam between the settlements of Jhapok to the south and Gudha to the north. The western part is a natural, undisturbed, continuous sheet of water that covers 155.4 sq km area. The eastern part, which is used exclusively for salt extraction, covers 76.8 sq. km and comprises two large reservoirs (area 12.95 sq km) for holding brine, with a series of canals and salt pans. The pans can be approached by the narrow bunds that separate them. After the brine reaches a certain level of concentration, it is transferred from the western part of the lake to the reservoirs through two sluice gates in the dam.

### 2.1.4 Geology & Mineralogy

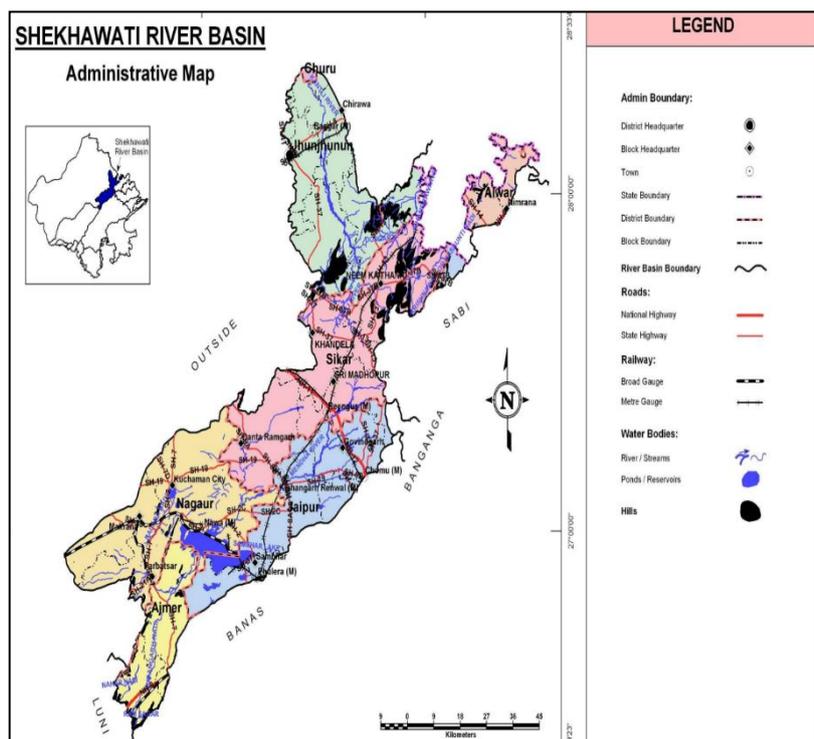
The lake is situated in the eastern part of the Thar Desert (Rajasthan) and southeast of the Aravalli Mountain ranges comprising rock formations of early and middle Proterozoic age. The lake basin is on a stretch of flat sand sheet concealing the underlying structural and lithological features. Geomorphologically, the lake playa is surrounded by aeolian deposits except in the west and northwest where hillocks comprising of gneisses and schist are found. The surrounding uplands are made of rocks of Delhi Super Group (early to middle Proterozoic age) consisting of jointed and foliated micaceous quartzites, which have prominent outcrops in the Govindi-Nawa area to the north of the lake, and schist and gneisses at places. Nodules of limestone/ marble with underlying mica schist form the basement below a thick layer of sand, which is overlain by a zone of saliferous silt. Outcrops of Aravalli Range (500 MSL) are found in northern (north of Nawa) and northwestern parts (around Palri, Gudha etc.). 5 Quaternary unconsolidated lacustrine sediments along with aeolian sand deposits overlie these hard rocks. The clastic sediments consist of quartz, alkali feldspar, mica chlorite, amphibolite and weathered products including

kaolinite and goethite whereas the nonclastic evaporites are mainly halite and calcite. Thenardite, Kieserite and Polyhalites are the dominated minerals below 5.5 m depth while gypsum is the major mineral below this depth.

Mainly four types of soils can be found in Sambhar Lake area, namely clay, clay loam, sandy loam and sandy soil. The general texture of the soil in the area is sandy loam to clayey loam which is further classified into “Barani” or unirrigated and “Chahi” or irrigated soil.

### 2.1.5 Hydrology and Catchment Area of Sambhar Lake

The Sambhar is an elliptical and shallow lake. The catchment area of Sambhar Lake spreads over the four districts, i.e., Jaipur, Ajmer, Sikar and Nagaur of the Rajasthan state in India. The total catchment area of the lake is 7,560 sq. km, most of which lies to the north and northeast. Sambhar lake is located centrally in its catchment. Salt Lake has plain



wetland topography of about 64 km to the west of Jaipur. The Sambhar basin has a centripetal drainage pattern as streams drain towards the lake. The Salt Lake is mainly fed by four fugacious streams namely Mendha, Rupangarh, Kharain and Khandel, and numerous streamlets debouched from the Aravalli hills and surface run-off. Mendha river, the largest feeder stream (catchment area 3600 sq. km) originates in the northeast of the lake (in Sikar district), flows towards southwest and then towards west and finally enters the lake from north forming a small delta at the mouth. Most of the catchment area of river Mendha is sandy, undulating plain, framed to the north, west and east by residual Aravalli outcrops. Rupangarh river originating in the south near Ajmer city runs north-northeast and enters the lake from south after draining about 625 sq. km hilly areas. Kharain and Khandel, two other smaller streams, enter the lake from the northwest and east, respectively. They drain a limited area before entering the lake basin.

### 2.1.6 Habitats and ecosystem components

**Saline Wetlands:** The lake itself is a large saline wetland, characterized by its high salinity levels. This saline environment supports a range of specialized flora and fauna adapted to saltwater conditions.

**Shoreline Habitats:** The lake's shoreline and mudflats are important habitats for various bird species, including waders, shorebirds, and waterfowl. These areas provide foraging and roosting sites for migratory and resident birds.

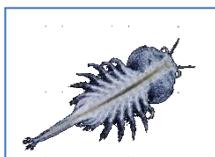
**Algal Mats:** Algal mats and microbial communities thrive in the shallow, saline waters of the lake. These microorganisms play a crucial role in the lake's ecosystem by cycling nutrients and providing food for invertebrates.

**Salt Pans:** The salt pans surrounding the lake are used for salt production. However, they also serve as habitat for salt-tolerant plants and microorganisms. The salt pans are periodically flooded during the monsoon season, creating temporary wetlands.



**Islands and Sandbars:** The lake features several islands and sandbars, which are important breeding and nesting sites for waterbirds. These areas are critical for the survival of bird species like flamingos and gulls.

**Aquatic Vegetation:** Some areas of the lake may support submerged aquatic vegetation, which provides habitat and food for various aquatic species and waterfowl.



**Invertebrates:** Brine shrimp and brine flies are common in Sambhar Lake. These invertebrates are an essential food source for many bird species and contribute to the lake's food web.

**Migratory Birds:** Migratory birds, particularly waterfowl, shorebirds, and flamingos, are a prominent component of the lake's ecosystem. They rely on Sambhar Lake as a stopover and wintering site along their migratory routes.



**Microbial Communities:** Microbes, including halophiles (salt-loving microorganisms), thrive in the extreme salinity of the lake. They play a crucial role in nutrient cycling and the lake's overall ecology.

**Flora:** Halophytic plants, adapted to saline conditions, are found in and around the lake. These plants are important for stabilizing shorelines and providing habitat for wildlife.

## 2.2 BIODIVERSITY

### 2.2.1 Flora

The natural vegetation in the catchment area is Northern Tropical Dry Mixed Deciduous Forests and Thorn Forest. A list of common vegetation recorded includes Dhok (*Anogeissus pendula*), Salar (*Boswellia serrata*), Capparis sp. with some bushy vegetation. The plain area is dominated by *Acacia nilotica*, *Acacia senegal*, *Salvadora persica* etc. Other species recorded include *Azadirachta indica*, *Prosopis cineraria*

and *Prosopis juliflora*. The degraded areas in the catchment and areas surrounding the lake are having *Prosopis Juliflora* as major vegetation. Though in saline condition other species does not survive easily the growth of *Prosopis Juliflora* is in abundance.

Here are some of the common flora and plant species found in and around Sambhar Lake:

*Table 2: Trees*

S.N.	Common Name	Scientific Name	Photos
1	Gum arabic tree	<i>Acacia nilotica</i>	
2	Senegalia Senegal	<i>Acacia senegal</i>	
3	Neem Tree	<i>Azadirachata indica</i>	
4	Indian frankincense	<i>Boswellia serrata</i>	
5	Thorny Staff Tree	<i>Maytenus emarginatus</i>	

S.N.	Common Name	Scientific Name	Photos
6	Wild Date Palm	Phoenix sylvestris	
7	Jand	Prosopis cineraria	
8	Angaraji babul, Kabuli kikar, vilayati babul, vilayati khejra or vilayati kikar.	Prosopis juliflora	
9	Jhau Lal-jhau	Tamarix diocia	
10	Rohida	Tecomella indulata	

Table 3: Grasses

S.N.	Common Name	Scientific Name	Photos
1	Fountain buffel grass	Cenchrus penniseliformi	 A photograph showing a clump of fountain buffel grass with long, thin green blades and several upright, white, feathery flower heads.
2	Dhaman grass, anjan grass, koluk katai and buffelgrass	Cenchrus ciliaris	 A photograph of a clump of dhaman grass growing on reddish-brown soil. The grass has a dense, rounded habit with long, thin blades.
3	Birdwood grass	Cenchrus setigerus	 A photograph of birdwood grass growing on reddish-brown soil. The grass has a clumped habit with long, thin blades and several upright, dark brown flower heads.
4	Windmill grass or finger grass	Chloris dolichostachya	 A photograph of windmill grass with long, thin green blades and several upright, cylindrical flower heads.
5	Crow foot grass	Dactylocten aegyptium	 A photograph of crow foot grass with long, thin green blades and several upright, cylindrical flower heads.
6	Sixweeks threeawn	Aristida adscensionis	 A close-up photograph of a sixweeks threeawn flower head, showing the characteristic three-awned structure with reddish-brown awns.

S.N.	Common Name	Scientific Name	Photos
7	Desert black-millet	Melanocenchris jacquemontii	
8	Wild sugarcane, kans grass	Saccharum spontaneum	
9	Smut grass	Sporobolus sp.	
10	Okrich	Sporobolus helvolus	
11	Indian comet grass	Perotis indica	
12	Tender finger grass	Tetrapogon tenellus	

S.N.	Common Name	Scientific Name	Photos
13	Gophertail lovegrass	Eragrostis ciliaris	

Table 4: Shurbs

S.N.	Common Name	Scientific Name	Photos
1	Banwali or bhubanwali	Acacia jacquemontii	
2	Apple of Sodom, Sodom apple, king's crown, rubber bush, and rubber tree	Calotropis procera	
3	Karira	Capparis deciduas	
4	Sullu spurge, and Royle's spurge	Euphorbia royleana	

S.N.	Common Name	Scientific Name	Photos
5	Khimp	Leptadenia pyrotechnica	
6	Bada peelu	Salvadora oleoides	
7	Miswak	Salvadora persica	
8	Echiochilon Pauciflorum (Stocks)	Sericostema paciflora	
9	Burhia Rattlepod	Crotolaria burhia	
10	Purple Tephrosia Wild Indigo	Tephrosia purpurea	

Table 5: Herbs

S.N.	Common Name	Scientific Name	Photos
1	Kapok bush	Aerva persica	 A photograph of a Kapok bush (Aerva persica), showing a dense, tangled mass of silvery-grey, hair-like leaves and stems growing on a reddish-brown soil.
2	Billygoat weed	Ageratum conyzoides	 A close-up photograph of Billygoat weed (Ageratum conyzoides), featuring several small, purple, daisy-like flowers with yellow centers, surrounded by green, serrated leaves.
3	Mexican prickly poppy	Argemone mexicana	 A photograph of a Mexican prickly poppy (Argemone mexicana), showing a single bright yellow flower with a dark center, growing from a stem with deeply lobed, silvery-green leaves.
4	Spiny amaranth, spiny pigweed, prickly amaranth or thorny amaranth	Amaranthus spinosa	 A photograph of a spiny amaranth (Amaranthus spinosa), showing a cluster of green, spiny leaves and a tall, slender, reddish-brown inflorescence.
5	Red fox, feather cockscomb, plumed cockscomb, feathery amaranth, woolflower, wild cockscomb	Celosia argentea,	 A photograph of a Red fox (Celosia argentea), showing several tall, upright stems with dense, feathery, reddish-purple flower heads.
6	Slender dwarf morning-glory	Evolvulus alsinoides	 A photograph of a Slender dwarf morning-glory (Evolvulus alsinoides), showing several small, blue, trumpet-shaped flowers growing from a low, green, leafy plant.

S.N.	Common Name	Scientific Name	Photos
7	False amaranth	Digera mutica	
8	Gale of the wind, carry me seed, seed on the leaf, pick-a-back, Bhuiavla	Phyllanthus sp.	
9	Thumbai	Leucas aspera	
10	Bhatal	Launea sp.	
11	Milkworts or snakeroots	Polygala irregularis	
12	Gokshur or Gokharu or puncture vine	Tribulus terrestris	

S.N.	Common Name	Scientific Name	Photos
13	Ash colored fleabane Purple fleabane	Vernonia cinerea	
14	Wandering Jew	Commelina bengalensis	
15	Hamilton's farsetia	Farsetia hamiltonii	
16	Heart-leaf indigo	Indigofera cordifolia	
17	Arenukam	Corchorus trilocularis	
18	Little hogweed, or parsley	Portulaca oleracea	

S.N.	Common Name	Scientific Name	Photos
19	Threadstem carpetweed	Mollugo cerviana	
20	Hairy Spurge, Ara Tanah, Asthma Weed, snake weed	Euphorbia hirta	
21	Rudravanti	Cressa cretica	
22	Caroxylon imbricatum	Salsola foetida	
23	Hureim or simple-leaved bean caper	Zygophyllum simplex	
24	Red spinach	Trianthema triquetra	

S.N.	Common Name	Scientific Name	Photos
25	Bold-leaf launaea	Launea nudicaulis	
26	Ponwar	Cleome brachycarpa	

### 2.2.2 Fauna

Sambhar Lake is an ideal habitat for water birds and large number of wetland avian species come over here in winters every year.

The algal blooms and variety of zooplankton fauna make it more opulent to birds to feed in the lake.

Many species of both Indian resident and long distant migratory species of water birds of good population including flamingos are recorded in the Sambhar Lake.

Blue bull (*Boselaphus tragocamelus*), is well known to occur in surrounding areas of Sambhar lake.

The lake supports a large number of avifauna most notably Flamingoes. The cause of concentration of Flamingoes in Sambhar Lake can be attributed to the following reasons:

- a. The algae and benthic communities of the water body as the source of food.
- b. The vast expanse of Sambhar Lake and availability of food has given the opportunity to this bird to breed in this region.

Out of the world's six Flamingo species, Lesser Phoenicopterus minor and Greater Phoenicopterus ruber regularly visit Sambhar Lake. About 23000 Flamingos have been recorded in the recent years. It is the second largest wintering and breeding ground for Flamingoes in India other than Great Rann of Kutch. Since the water recedes very quickly in the Sambhar Lake the Flamingoes have also adapted to simplify the nest building process. The birds scoop the soil in the circular form thereby leaving central place as elevated portion for laying eggs.

Here is list of some of the common fauna found in and around Sambhar Lake:

Table 6: Migratory Birds found in and around Sambhar Lake

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
1	Little Grebes	Tachybaptus ruficollis (Pallas, 1764)	Open waters	Sizeable, Migrant	
2	Great Crested Grebe	Podiceps cristatus (Linnaeus, 1758)	Open waters	Sizeable, Migrant	
3	Great white Pelican	Pelecanus onocrotalus Linnaeus, 1758	Open waters, Lake margins	Sizeable, Migrant	
4	Darters	Anhinga melanogaster Pennat, 1769	Open waters	Very rare	
5	Purple Heron	Ardea purpurea Linnaeus, 1766	Shallow waters, Lake margins	Sizeable, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
6	Indian Pond Heron	<i>Ardeola grayii</i> (Sykes, 1832)	Lake margins, Heronry	Migrant, Rare	
7	Night Heron	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)	Lake margins, Heronry	Migrant, Very Rare	
8	Painted Stork	<i>Mycteria leucocephala</i> (Pennat, 1769)	Heronry	Migrant, Rare	
9	Black Stork	<i>Ciconia nigra</i> (Linnaeus, 1758)	Lake margins	Migrant, Rare	
10	Glossy Ibis	<i>Plegadis falcinellus</i> (Linnaeus, 1788)	Lake margins	Migrant, Rare	
11	Eurasian Spoonbill	<i>Platalea leucorodia</i> Linnaeus, 1758	Lake margins, Heronry	Migrant, Rare	
12	Greater Flamingo	<i>Phoenicopterus ruber</i> Linnaeus, 1758	Shallow waters, Lake margins	Migrant, Abundant	

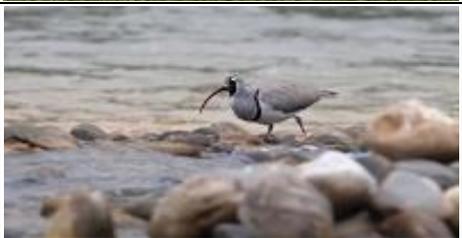
S.N.	Common Name	Scientific Name	Habitat	Status	Photos
13	Lesser Flamingo	Phoenicopterus minor(Geoffroy,1798)	Shallow waters, Lake margins	Migrant, Abundant	
14	Greylag Goose	Anser anser (Linnaeus, 1758)	Shallow waters, Open waters	Very Rare, Migrant	
15	Bar-headed Goose	Anser indicuss (Latham, 1790)	Shallow waters, Open waters	Very Rare, Migrant	
16	Brahminy Shelduck	Tadorna ferruginea (Pallas, 1764)	Shallow waters, Open waters	Very Rare, Migrant	
17	Cotton Teal	Nettapus coromandelianus (Gmelin, 1789)	Open waters	Sizeable, Migrant	
18	Gadwall	Anas strepera Linnaeus, 1758	Open waters	Rare, Migrant	
19	Eurasian Wigeon	Anas Penelope Linnaeus, 1758	Open waters	Rare, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
20	Mallard	<i>Anas platyrhynchos</i> Linnaeus, 1758	Open waters	Very Rare, Migrant	
21	Spot-billed Duck	<i>Anas poecilorhyncha</i> J.R. Forester, 1781	Open waters, Lake margins,	Very Rare, Migrant	
22	Northern shoveler	<i>Anas clypeata</i> Linnaeus, 1758	Open waters	Rare, Migrant	
23	Northern Pintail	<i>Anas acuta</i> Linnaeus , 1758	Open waters	Sizeable, Migrant	
24	Garganey	<i>Anas querquedula</i> Linnaeus, 1758	Open waters	Very Rare, Migrant	
25	Common Teal	<i>Anas crecca</i> Linnaeus, 1758	Open waters	Sizeable, Migrant	
26	Red-crested Pochard	<i>Rhodonessa rufina</i> (Pallas, 1773)	Open waters	Sizeable, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
27	Common Pochard	<i>Aythya ferina</i> (Linnaeus, 1758)	Open waters	Sizeable, Migrant	
28	Tufted Pochard	<i>Aythya fuligula</i> (Linnaeus, 1758)	Open waters	Rare, Migrant	
29	Demoiselle Crane	<i>Grus virgo</i> (Linnaeus, 1758)	Lake margins	Abundant, Migrant	
30	Common Crane	<i>Grus grus</i> (Linnaeus, 1758)	Lake margins	Sizeable, Migrant	
31	Purple Moorhen	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Open waters, Lake margins	Sizeable, Migrant	
32	Common Coot	<i>Fulica atra</i> Linnaeus, 1758	Open waters	Abundant, Migrant	
33	European Golden Plover	<i>Pluvialis apricaria</i> (Linnaeus, 1758)	Lake margins	Rare, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
34	Little Ringed Plover	Charadrius dubius Scopoli, 1786	Lake margins	Rare, Migrant	
35	Kentish Plover	Charadrius alexandrinus Linnaeus, 1758	Lake margins	Rare, Migrant	
36	River Lapwing	Vanellus duvaucelii (Lesson, 1826)	Lake margins	Rare, Migrant	
37	Pintail Snipe	Gallinago stenura (Bonaparte, 1830)	Lake margins	Rare, Migrant	
38	Common Snipe	Gallinago gallinago (Linnaeus, 1758)	Lake margins	Sizeable, Migrant	
39	Black-tailed Godwit	Limosa limosa (Linnaeus, 1758)	Lake margins	Rare, Migrant	
40	Whimbel	Numenius phaeopus (Linnaeus, 1758)	Lake margins	Sizeable, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
41	Common Redshank	<i>Tringa tetanus</i> (Linnaeus, 1758)	Lake margins	Sizeable, Migrant	
42	Marsh Sandpiper	<i>Tringa stagnatilis</i> (Bechstein, 1803)	Lake margins	Sizeable, Migrant	
43	Common Greenshank	<i>Tringa nebularia</i> (Gunner, 1767)	Lake margins	Rare, Migrant	
44	Common Sandpiper	<i>Actitis hypoleucos</i> Linnaeus, 1758	Lake margins	Sizeable, Migrant	
45	Sanderling	<i>Calidris alba</i> (Pallas, 1764)	Lake margins	Very Rare, Migrant	
46	Little Stint	<i>Calidris minuta</i> (Leisler, 1812)	Lake margins	Sizeable, Migrant	
47	Temminck's Stint	<i>Calidris temminckii</i> (Leisler, 1812)	Lake margins	Rare, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
48	Curlew Sandpiper	<i>Calidris ferruginea</i> (Pontoppidan, 1813)	Lake margins	Sizeable, Migrant	
49	Ruff (& Reeve)	<i>Philomachus pugnax</i> (Linnaeus, 1758)	Lake margins	Very Rare, Migrant	
50	Ibisbill	<i>Ibidorhyncha struthersii</i> Vigors, 1832	Shallow waters, Lake margins	Lake Migrant	
51	Collared Prantnicole	<i>Glareola pratnicola</i> (Linnaeus, 1758)	Lake Migrant	Rare, Migrant	
52	Yellow-legged Gull	<i>Larus cachinnans</i> Pallas, 1811	Open waters, Lake margins	Rare, Migrant	
53	Brown-headed Gull	<i>Larus brunicephalus</i> Jerdon, 1840	Open waters, Aerial	Rare, Migrant	
54	Black-headed Gull	<i>Larus ridibundus</i> Linnaeus, 1766	Lake margins, Aerial	Rare, Migrant	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
55	Whiskered Tern	Chlidonias hybridus (Pallas, 1811)	Aerial	Rare, Migrant	

Table 7: Resident Birds found in and around Sambhar Lake

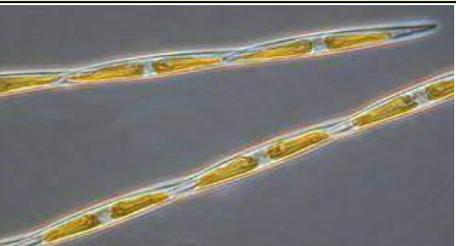
S.N.	Common Name	Scientific Name	Habitat	Status	Photos
1	Little Cormorant	Phalacrocorax niger (Vieillot, 1817)	Open waters, Lake margins	Abundant, Resident	
2	Great cormorant	Phalacrocorax carbo (Linnaeus, 1758)	Open waters, Lake margins	Sizeable, Resident	
3	little egret	Egretta garzetta (Linnaeus, 1766)	Lake margins, Heronry	Abundant, Resident	
4	Grey Heron	Ardea cinerea Linnaeus, 1758	Lake margins, Heronry	Resident, Rare	
5	Large Egret	Casmerodius albus (Linnaeus, 1758)	Lake margins, Shallow waters	Abundant, Resident	

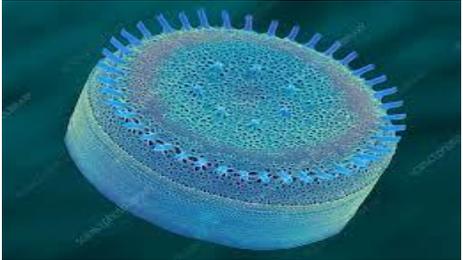
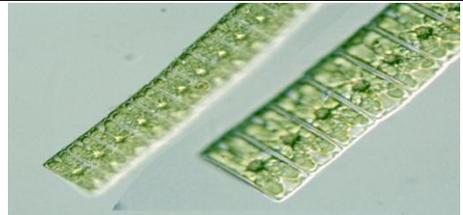
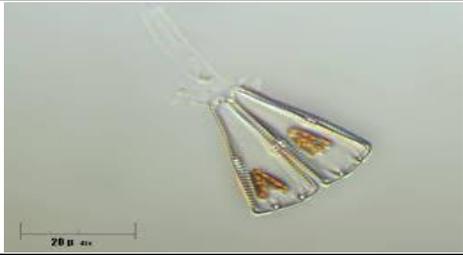
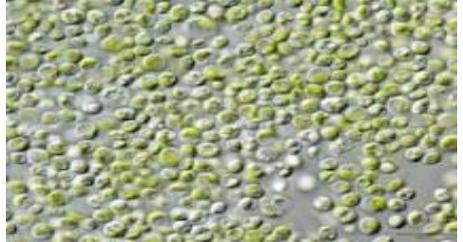
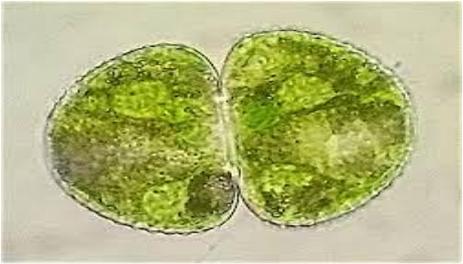
## DRAFT MANAGEMENT PLAN OF SAMBHAR LAKE

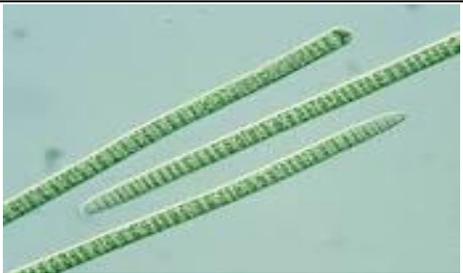
S.N.	Common Name	Scientific Name	Habitat	Status	Photos
6	Median Egret	Mesophoyx intermedia (Wagler, 1829)*	Lake margins	Sizeable, Resident	
7	Cattle Egret	Bubulcus ibis (Linnaeus, 1758)	Lake margins, Heronry	Abundant, Resident	
8	Egyptian Vultures	Neophron percnopterus	Aerial, Lake margins	Rare, Resident	
9	Sarus Crane	Grus antigone (Linnaeus, 1758)	Lake margins	Rare, Resident	
10	Greater Sand Plover	Charadrius leschenaultia Lesson, 1826	Lake margins	Rare, Resident	
11	Yellow-wattled Lapwing	Vanellus malabaricus (Boddaert, 1783)	Lake margins	Rare, Resident	
12	Red-wattled Lapwing	Vanellus indicus (Boddaert, 1783)	Lake margins	Sizeable, Resident	

S.N.	Common Name	Scientific Name	Habitat	Status	Photos
13	Eurasian Curlew	Numenius arquata (Linnaeus, 1758)	Lake margins	Sizeable, Resident	
14	Black-winged Stilt	Himantopus himantopus (Linnaeus, 1758)	Lake Migrant	Abundant, Resident	
15	Pied Avocet	Recurvirostra avosetta Linnaeus, 1758	Lake Migrant	Sizeable, Resident	
16	River Tern	Sterna aurantia J.E.Gray, 1831	Aerial	Sizeable, Resident	

Table 8: Algae found in and around Sambhar Lake

S.N.	Phytoplankton groups	Common Name	Scientific Name	Photos
1	Bacillariophyceae	Pennate marine diatom	Nitzschia sp.	
2		Navicula	Navicula sp.	

S.N.	Phytoplankton groups	Common Name	Scientific Name	Photos
3		Achnanthus	Achnanthus sp.	
4		Cyclotella	Cyclotella sp.	
5		Fragillaria	Fragillaria sp.	
6		Gomphonema	Gomphonema sp.	
7		Chlorella sp	Chlorella vulgaris	
8	Chlorophyceae	Green algae	Cosmarium sp.	
9		Ulothrix	Ulothrix sp.	

S.N.	Phytoplankton groups	Common Name	Scientific Name	Photos
10	Cyanophyceae	Coelastrum	Coelastrum sp.	
11		Dunaliella sp	Dunaliella salina	
12		Ankistrodesmus	Ankistrodesmus sp.	
13		Anabaena	Anabaena sp.	
14		Oscillatoria	Oscillatoria sp.	
15	Microcystis	Microcystis sp.		

S.N.	Phytoplankton groups	Common Name	Scientific Name	Photos
16		Spirulina	Spirulina sp.	
17		Chroococcus	Chroococcus sp.	
18		Arthrospira	Arthrospira sp.	
19	Euglenophyceae	Phacus	Phacus sp.	

Table 9: Animals found in and around Sambhar Lake

S.N.	Common Name	Scientific Name	Photos
1	Blue bull (nilgai)	Boselaphus tragocamelus	

S.N.	Common Name	Scientific Name	Photos
2	Desert foxes	Vulpes zerda	
3	Jackals	Canis aureus	
4	Desert hare	Lepus nigricollis	

## 2.3 ECOLOGICAL PROCESSES

### 2.3.1 Water inflow

Sambhar Lake receives water from several feeder streams, the most significant of which is the Mendha River and Rupangarh River. These streams flow into the lake, primarily during the monsoon season when rainfall is relatively higher. The inflow from these streams contributes to the lake's water replenishment.

### 2.3.2 Water outflow

One of the primary factors influencing water outflow from Sambhar Lake is evaporation. The region's arid climate and high temperatures result in significant evaporation rates, especially during the hot summer months. This process leads to water loss and an increase in salinity levels.

### 2.3.3 Nutrient cycling

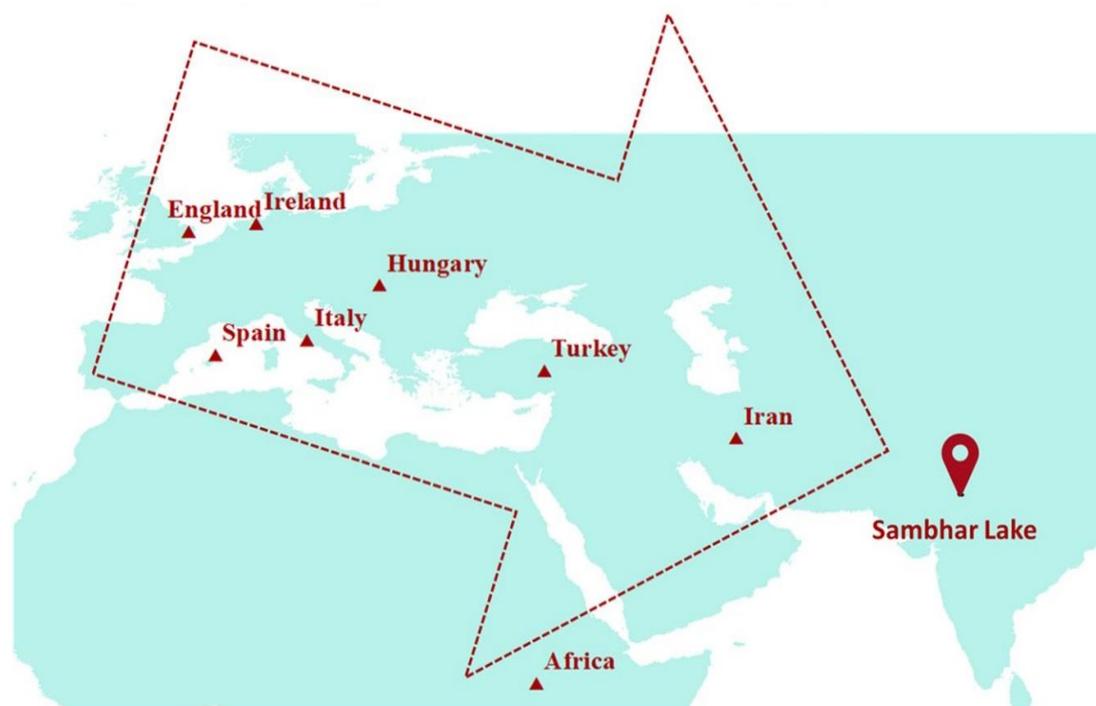
**Nutrient Inputs:** Nutrient inputs into Sambhar Lake primarily come from the catchment area and the surrounding landscape. Rainwater carries nutrients from the land into the lake, and organic matter from terrestrial sources may also contribute to nutrient cycling.

**Algae and Microorganisms:** Salt-tolerant algae and microorganisms in the lake play a crucial role in nutrient cycling. These microorganisms contribute to organic matter decomposition, releasing nutrients like nitrogen and phosphorus back into the ecosystem.

**Brine Shrimp and Invertebrates:** Brine shrimp and other invertebrates present in the lake feed on microorganisms and detritus, recycling nutrients within the food web.

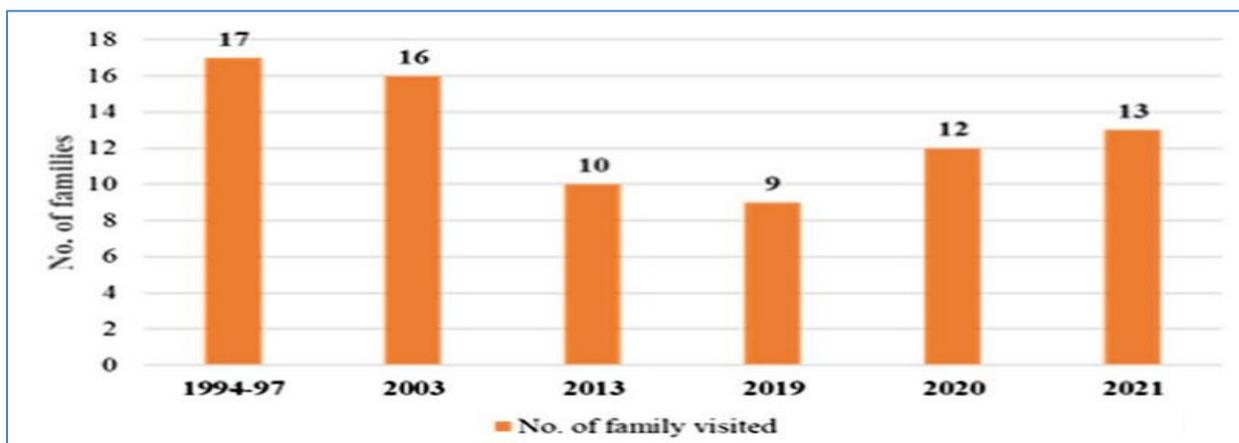
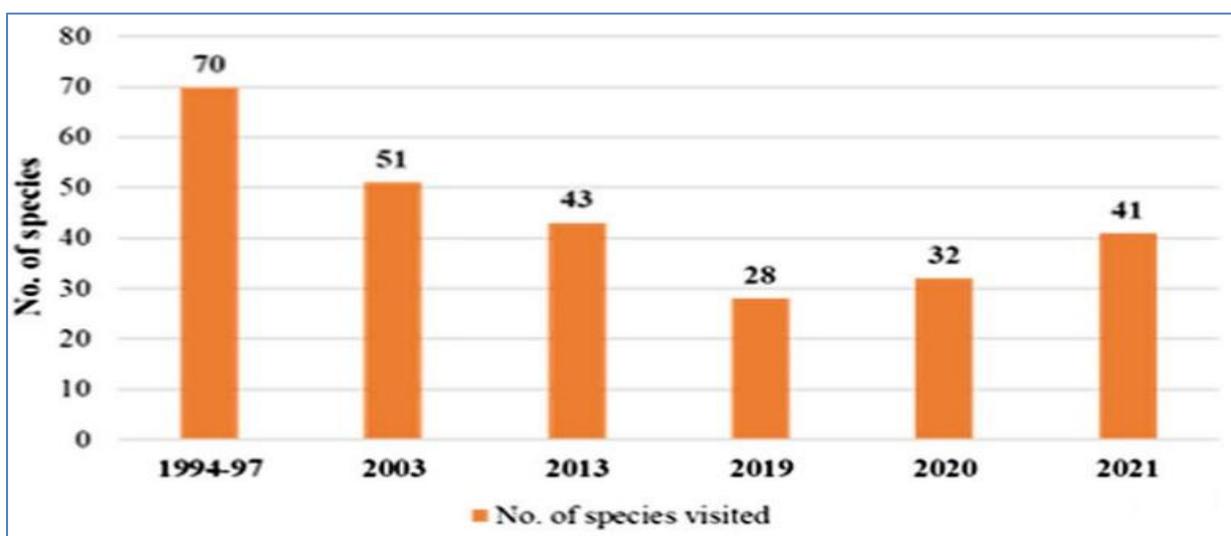
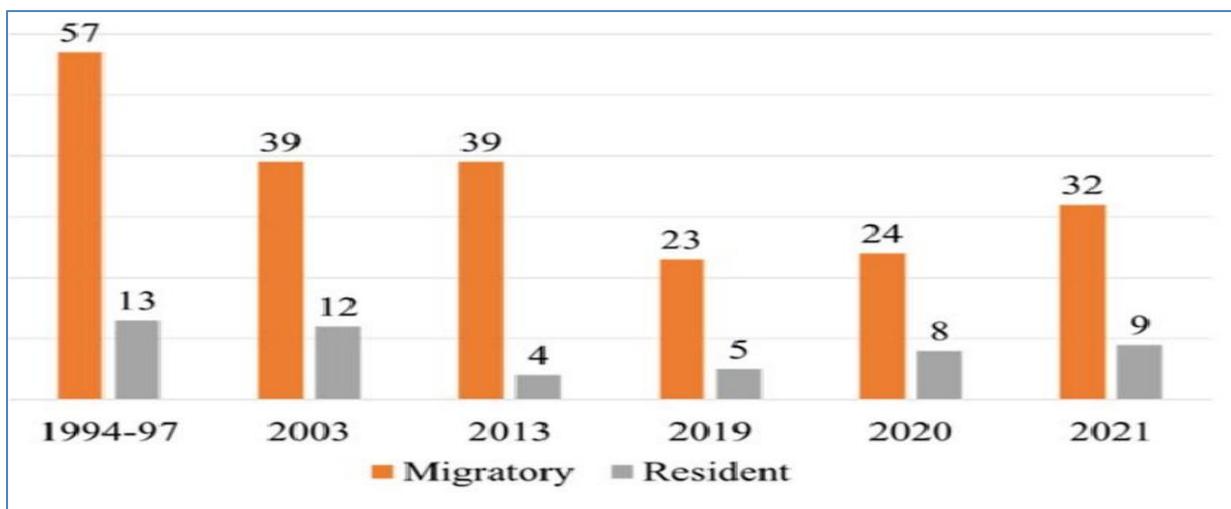
**Birds as Nutrient Transporters:** Migratory birds that visit Sambhar Lake forage for food, including brine shrimp and other aquatic invertebrates. They can transport nutrients from the lake to other regions when they migrate, contributing to nutrient cycling in broader ecosystems.

## 2.4 BIRDS FAMILY OBSERVED AT SAMBHAR LAKE

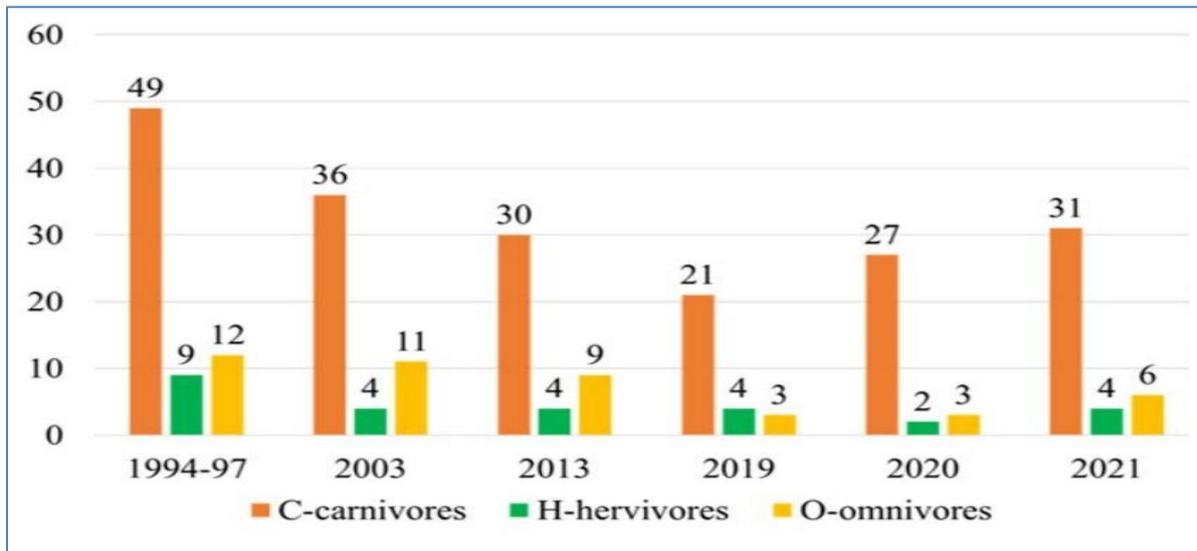


Sambhar lake is a crucial habitat for various species of flora and fauna. Here is the distribution of various fauna found at Sambhar Lake based on a research report<sup>2</sup> published in 2022.

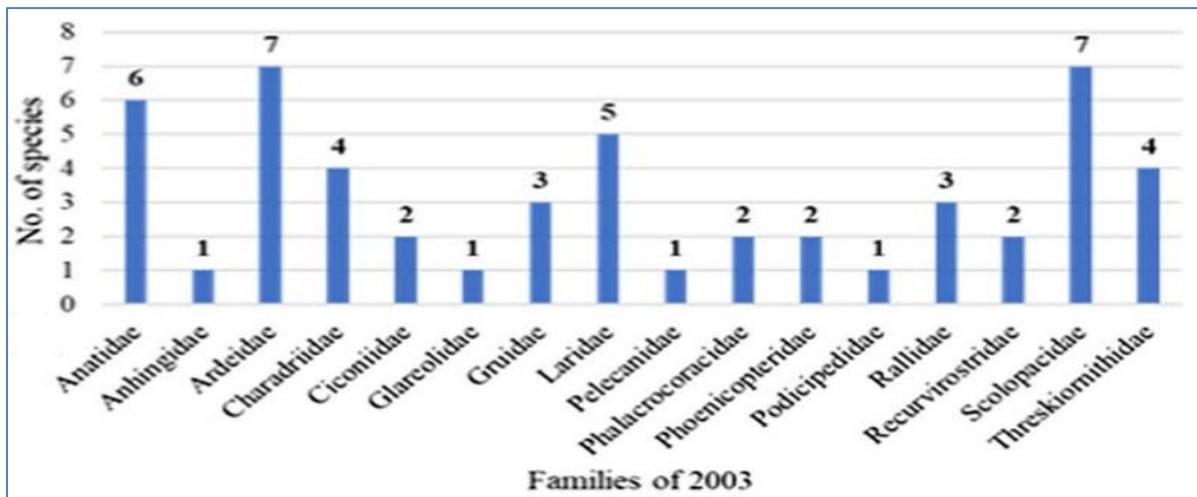
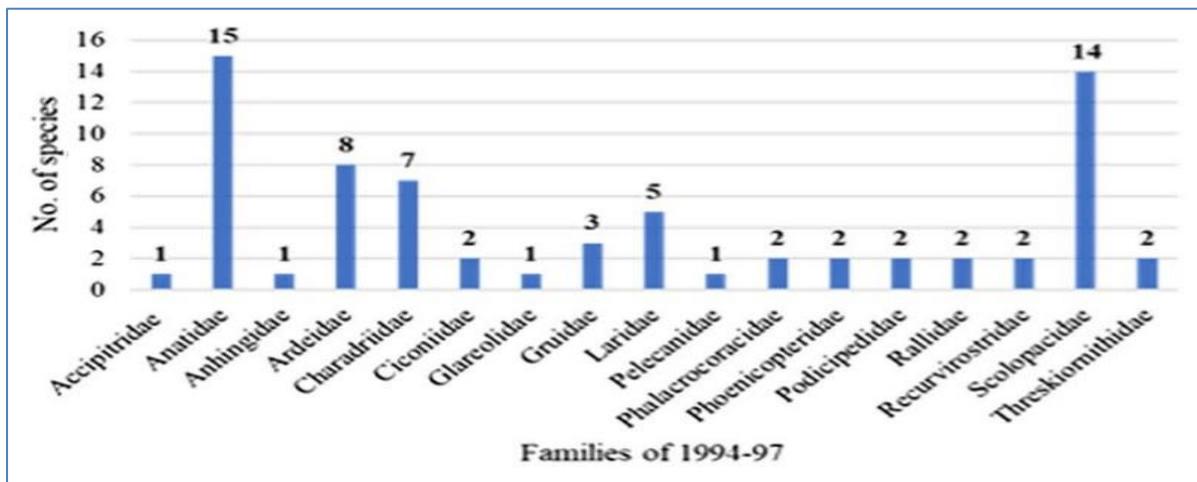
<sup>2</sup> Monitoring migratory birds of India's largest shallow saline Ramsar site (Sambhar Lake) using geospatial data for wetland restoration" by Rajashree Naik and Laxmi Kant Sharma published in 2022

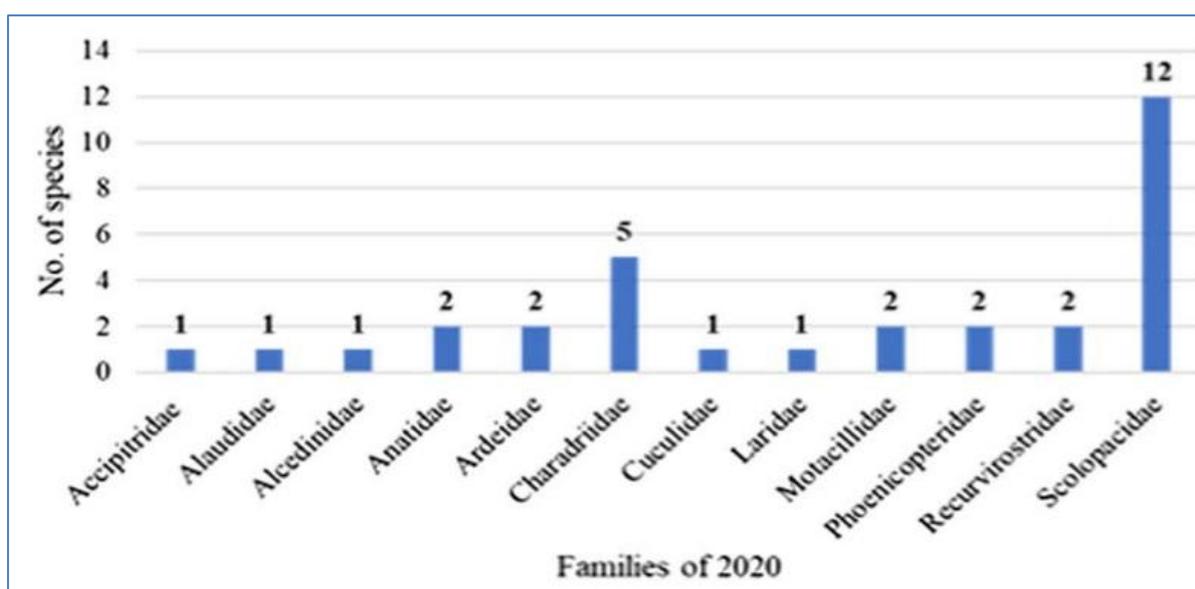
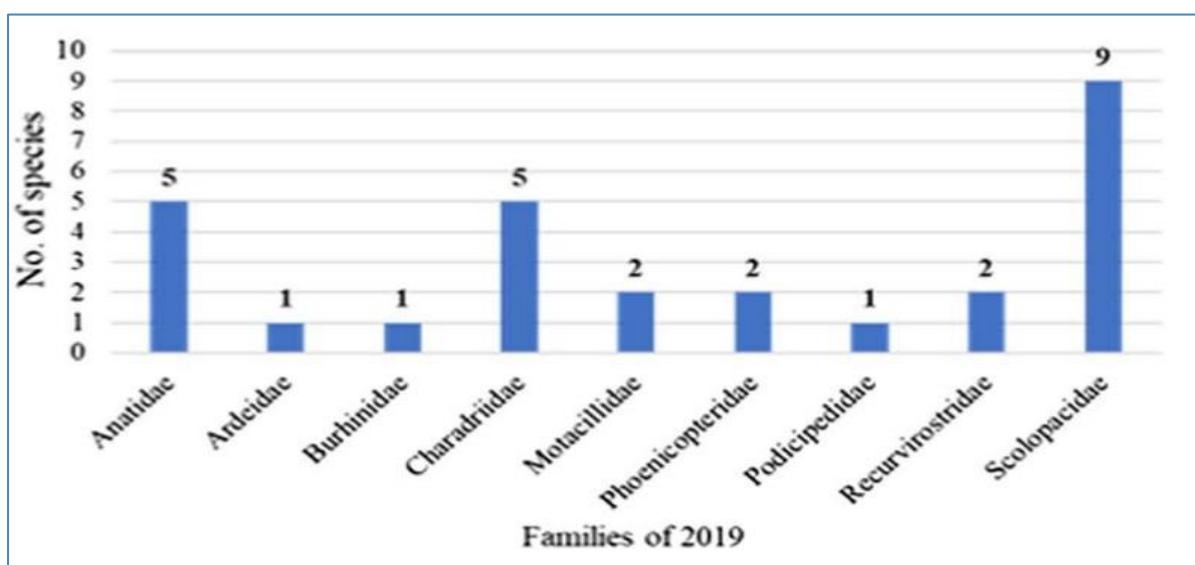
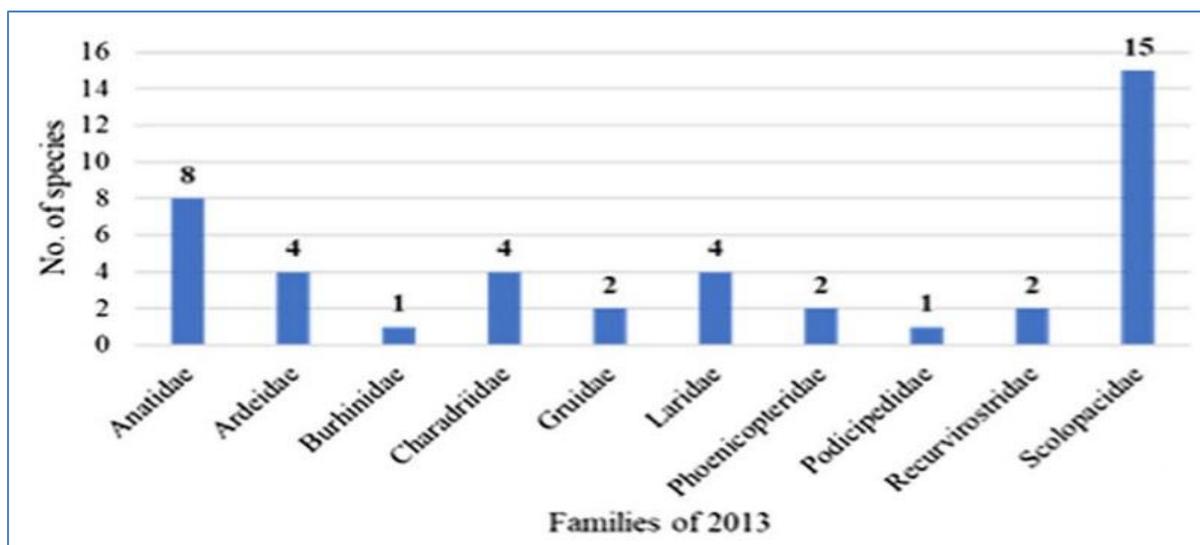
**Figure 2: Number of Bird Families Observed at Sambhar Lake:****Figure 3: Number of Species Observed at Sambhar Lake:****Figure 4: Number of Migratory and Resident Species Observed at Sambhar Lake:**

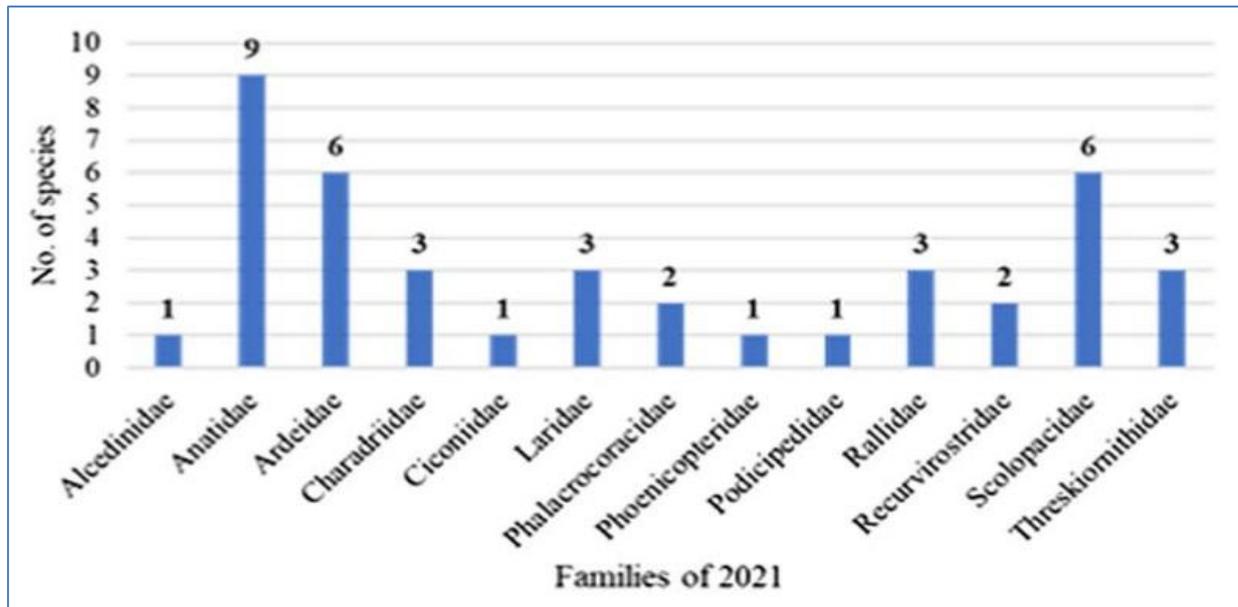
**Figure 5: Bifurcation of Birds on basis of Carnivorous, Herbivorous & Omnivorous:**



**Figure 6: Year Wise detail of Birds Family:**







## 3 THREAT ANALYSIS & CONSERVATION STRATEGIES

### 3.1 IDENTIFICATION OF THREATS & CONSERVATION STRATEGIES

#### 3.1.1 Salt Extraction

##### 3.1.1.1 Threats

###### **Pollution from salt refining units**

Salt extraction from Sambhar Lake is done by Sambhar Salts Limited (SSL) a Union Government Company and it was incorporated on 30 September 1964. SSL have the sole right to use the surface water of Sambhar Lake for salt extraction. There are also various private companies which are given license to do salt farming using ground water through bore wells. Waste generated by these companies includes sludge or bitterns. Sodium sulphate waste or sludge can be generated from salt refining units as a byproduct of the process. Salt refining involves removing impurities from raw salt through various purification techniques such as dissolution, filtration, evaporation, and crystallization. During this process, impurities like calcium and magnesium sulphates, as well as other trace minerals present in the raw salt, are separated, and removed. These impurities form a sludge or waste material that contains sodium sulphate along with other substances. This waste material needs to be properly managed and disposed of to prevent environmental contamination.

###### **Illegal Water Extraction from lake for Salt Farming**

Pipelines have been dug to illegally extract water from the lake to manufacture salt and the situation is worsening every year. The entire stretch is lined with salt refineries, all allegedly manufacturing salt with stolen brine from the lake. It would soon reach a point where the existence of the Sambhar Lake itself (would be) under threat.



### Excess Ground Water Exploitation

Groundwater exploitation for salt farming is a common practice in the Sambhar Lake area, given its significance as a major salt-producing region in India. Brine, a highly saline solution, is the primary source of salt production in the region. Brine extraction wells are drilled into the ground to access subsurface brine aquifers. These aquifers are rich in dissolved salt content.

While brine exploitation for salt farming is essential for the local economy and the salt industry in the region, it is also posing ecological challenges to Sambhar Lake and its surrounding wetlands. Excessive groundwater pumping has led to a decline in the water table, affecting the lake's hydrology and contributing to increased salinity levels. This, in turn, is impacting the lake's fragile ecosystem and bird populations that rely on the lake's resources.

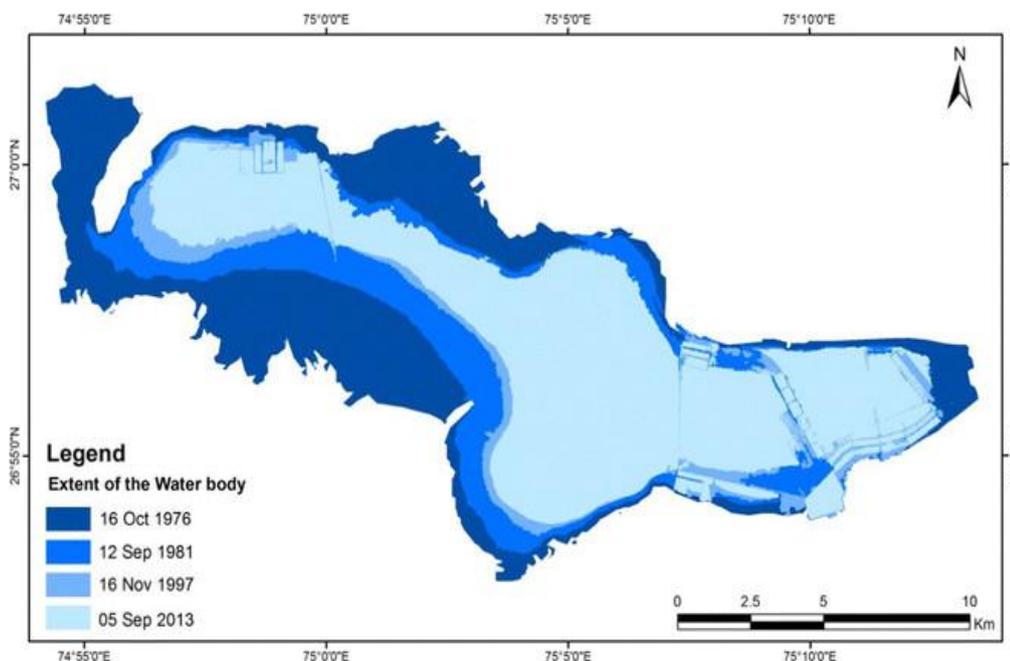
### Illegal Encroachment in the lake area

Illegal salt pans and salt extraction activities are encroaching upon ecologically sensitive areas of the lake. Encroachers are engaging in salt production without the necessary permits or adherence to environmental regulations, leading to environmental degradation.

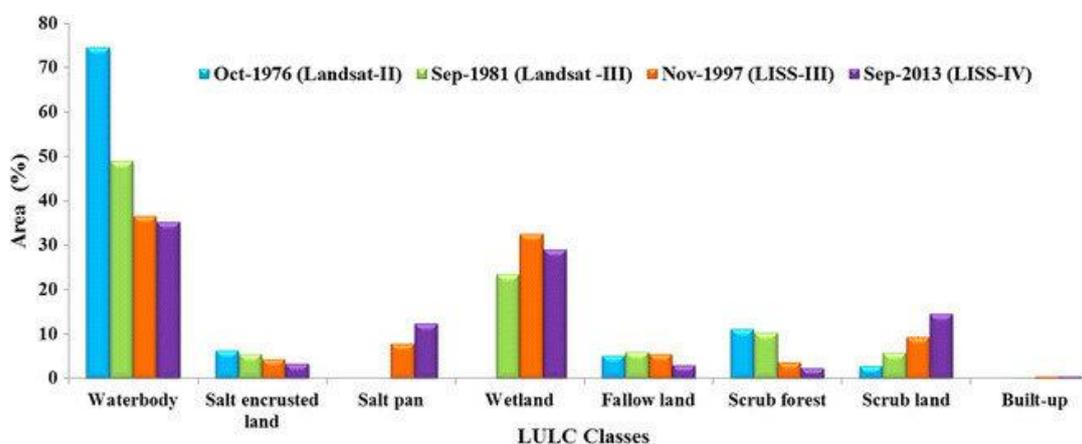
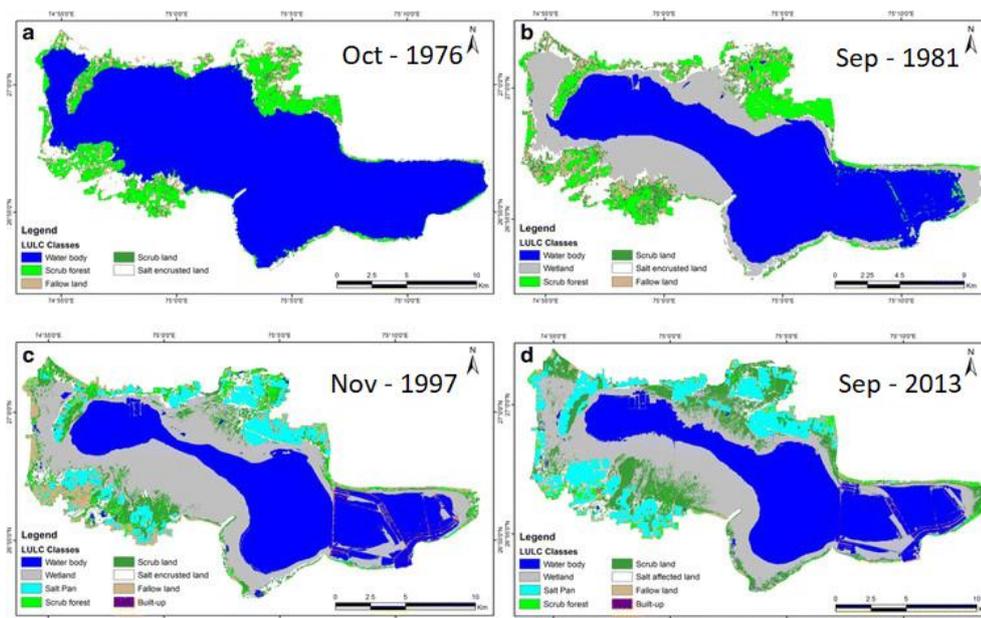
### Change in LULC (Land Use Land Cover)

The land use of Sambhar Lake has changed over the years. The rate at which land use is changing, Sambhar Salt Lake will cease to exist in the future. A study<sup>iii</sup> was done by CSIR - NEERI<sup>3</sup> in 2016 and the outcome of the study is shown below:

**Figure 7: Land Use Land Cover**



<sup>3</sup> "A Multi-temporal analysis for change assessment and estimation of algal boom in Sambhar Lake, Rajasthan, India" by Ritesh Vijay, Shannon M. Pinto, Viksh K Kushwaha, Sukdeb Pal, Tapas Nandy (Clean Technology & Modelling Division, CSIR-NEERI)



### 3.1.1.2 Conservation Strategies

- Sustainable Salt Extraction Limit to be defined as excess salt production effects the ecology of Sambhar Lake
- Regulated Salt Production Practices and responsible disposal of bitterns
- Implement Brine Recycling Systems for reusing brine for salt production.
- Buffer Zone and Setbacks around the lake to protect ecologically sensitive areas.
- Clear regulations and guidelines for salt production, including licensing requirements and environmental impact assessments before permitting new salt production projects.
- Significant fines and penalties for individuals or entities found guilty of illegal salt farming, encroachment, illegal bore-wells, etc
- Collaborate with local communities, environmental organizations, and law enforcement agencies.

### 3.1.2 Habitat Degradation and Restoration/Protection Measures

#### 3.1.2.1 Threats

##### Shoreline Erosion

Shoreline erosion is occurring from past few decades due to changes in water levels, the destruction of natural buffer zones, and the absence of vegetation. Erosion has led to the loss of nesting and foraging sites for waterfowl.

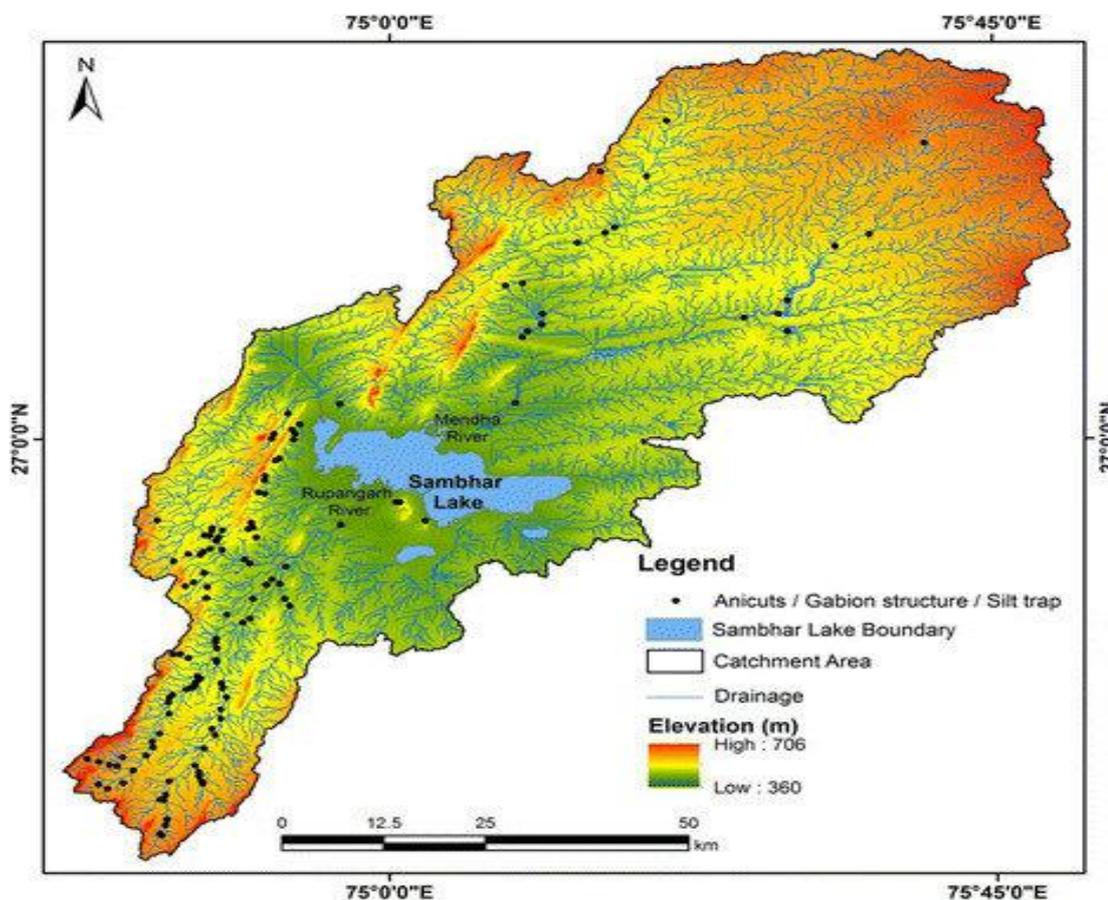
##### Habitat Loss

Extensive salt pans and associated infrastructure have replaced natural wetland habitats around the lake, reducing the availability of suitable breeding, nesting, and foraging areas for waterfowl.

##### Altered Hydrology

Encroachment and construction of check dams/anicuts/others human activities in the catchment area of rivers feeding Sambhar Lake has also resulted in the decrease of water levels.

**Figure 8: Location of Dams/Anicuts/Checkdams/Silt Traps/ in the Sambhar lake Catchment Area**



### 3.1.2.2 Restoration & Protection Measures

- Demarcation and Delineation of Wetland Area
- Removal of encroachments from the feeding rivers
- Creation of buffer zones and wetland reserves
- De-silting of river catchment area in order to restore its natural capacity

### 3.1.3 Pollution from Nearby Areas

#### 3.1.3.1 Threat

##### **Industrial Pollution**

Industries in the vicinity of Sambhar Lake and feeder rivers may discharge pollutants such as heavy metals, chemicals, and industrial waste into the lake or its feeder rivers, leading to water contamination.

##### **Solid Waste**

Solid waste, including plastic debris and other litter, can accumulate in the lake and its surroundings, negatively impacting the visual aesthetics and aquatic life.

##### **Agricultural Runoff**

The use of fertilizers, pesticides, and herbicides in agricultural areas within the watershed can result in agricultural runoff containing excess nutrients and chemicals that can degrade water quality.

##### **Sewage and Domestic Waste**

Sewage and untreated domestic wastewater from nearby towns and villages may flow into the lake, introducing organic matter, pathogens, etc and can deteriorate water quality. Human settlement in the surrounding may gradually lead to domestic sewage and sullage and solid waste pollution. However, such discharges were not observed during the field visit.

#### 3.1.3.2 Pollution Control Measures

- Installation of Water Treatment and re-cycling plants around high density areas along the Sambhar Lake.
- Solid Waste Management Plant
- Water Quality Monitoring at regular interval
- Watershed Management
- Strict Regulatory Enforcement and Punishments with zero tolerance policy
- Community Awareness Program should be implemented

### 3.1.4 Epidemic – 2019 Incident of Avian Botulism at Sambhar Lake

Thousands of migratory birds of about ten species were found dead around Sambhar Lake, the country's largest inland saltwater lake near Jaipur, sending shock waves among locals and authorities.

The National Green Tribunal was told by a committee that mass mortality of migratory birds at the Sambhar Lake in Rajasthan was not because of 'avian influenza' or 'pesticide poisoning' but due to avian botulism caused by a bacteria.



Avian botulism is a serious neuromuscular illness of birds caused by a toxin that is produced by the bacterium *Clostridium botulinum*. Avian botulism has been recognized as a major cause of mortality in wild birds.

A report filed by member secretary of the Rajasthan State Wetland Authority told a bench headed by NGT chairperson Justice Adarsh Kumar Goel that the matter is also being looked into by the high court and action of collection of carcass from the site and their disposal in the pits. "The report mentions action of collection of carcass from the site and their disposal in the pits. The report also mentions rescue and rehabilitation of certain birds at emergency rescue facility and shifting to soft release enclosure. Mass mortality was not due to 'avian influenza' or 'pesticide poisoning' but due to avian botulism caused by *Clostridium botulinum*," the tribunal noted.

The NGT after perusing the report said that it does not give any reason for spread of avian botulism and this could happen as a consequence of illegal extraction of water for salt production, water pollution or on account of excessive agriculture practised in the catchment area of the lake, decrease in the extent of the water body from 74.63 per cent to 35.1 per cent.



### 3.1.5 Other Conservation Measures

#### **Biofencing, also known as live fencing**

It involves the use of living plants to create a natural barrier or boundary. In the case of Sambhar Lake, which is located in a saline and arid region of Rajasthan, the choice of plants for biofencing should take into account the extreme environmental conditions, including high salinity and water scarcity. Here are some types of biofencing that can be considered for the boundary of Sambhar Lake:

1. **Salt-Tolerant Halophytes:** Given the high salinity levels in the vicinity of Sambhar Lake, selecting salt-tolerant halophytes for biofencing is a suitable option. These plants have adapted to thrive in saline soils. Species like *Salicornia*, *Suaeda*, and *Salsola* are examples of halophytes that can be used. They not only create a natural barrier but also help stabilize the shoreline.
2. **Tamarisk (*Tamarix* spp.):** Tamarisk, also known as salt cedar, is a drought-tolerant and salt-tolerant plant that can be used for biofencing. It has deep roots that can access groundwater, making it suitable for arid regions like Sambhar Lake.
3. **Phragmites (*Phragmites australis*):** Common reed, or Phragmites, is a tall, perennial grass species that can form dense thickets. It can be used for biofencing along the lake's boundaries, providing a natural barrier and habitat for wildlife.
4. **Indian Jujube (*Ziziphus mauritiana*):** Indian jujube is a drought-resistant shrub or small tree commonly found in arid regions of India. It can be used for biofencing due to its ability to withstand dry conditions.
5. **Aloe vera:** Aloe vera is a succulent plant that can be considered for biofencing in areas with slightly lower salinity levels. It is known for its ability to store water in its thick leaves.
6. **Community Plantations:** Involving local communities in planting and maintaining biofences can be an effective strategy. Native plants that are well-suited to the local conditions can be selected, and community involvement can help ensure the success and sustainability of the biofencing project.

When implementing biofencing at the boundary of Sambhar Lake, it's essential to consider factors such as soil quality, salinity levels, water availability, and the specific goals of the project, including erosion control, habitat restoration, or creating a natural barrier. Additionally, regular maintenance, including pruning and watering as needed, may be required to ensure the health and effectiveness of the biofencing plants. Collaborating with local environmental experts and conservation organizations can provide valuable guidance in selecting the most appropriate plant species for biofencing in this unique ecosystem.

#### **Appointment of Nodal Officer and Execution Team**

Appointment of Nodal Officer and Execution team is important for development & conservation of Sambhar Lake and its catchment area. They will also be responsible for co-ordination between Local Authorities, Environment Related Departments, Urban Development Department, Tourism Department, etc for effective implementation of Conservation plan.

#### **Community Engagement**

- Creating Public Awareness through educational programs, outreach activities in schools and communities like workshops, seminars, etc.

- Use of Social media platforms to reach broader audience
- Engagement of Local communities, NGOs and other stakeholders through collaborative and participatory approach
- Incorporate local folklore, myths, and stories related to the lake's history and wildlife into educational programs

#### **Eco-tourism & Visitor Education**

- Organize guided tours (Birding & Nature Walk) led by knowledgeable naturalists or local experts who can provide insights into the lake's ecology and cultural history.
- Interactive exhibits or visitor centers at key entry points using multimedia presentation and interactive displays
- Develop informative websites or mobile apps that offer virtual tours, wildlife guides, and resources for self-guided learning
- Develop and promote a code of conduct for visitors that includes rules for responsible behavior, such as not disturbing wildlife, not littering, and respecting local customs
- Educate visitors about appropriate wildlife viewing practices, such as maintaining a respectful distance and using binoculars or cameras with telephoto lenses to avoid stressing or disturbing animals

#### **Monitoring of key Indicators of Lake Health**

Key Indicators like water levels, water quality, chemical composition of lake water, etc should be monitored on regular basis and appropriate action should be taken in case of any change is registered.

#### **Eco-friendly Infrastructure Development**

- Any new infrastructure development should be in harmony with the natural landscape and designed to minimize environmental impact.
- Create and maintain designated walking and viewing trails to minimize habitat disruption and erosion

## 4 TOURISM

### 4.1 EXISTING TOURISM ACTIVITIES

#### 4.1.1 RTDC Swadesh Darshan Scheme – Sambhar Lake is Part of Desert Circuit

Swadesh Darshan Scheme is a Central Sector scheme launched by the Ministry of Tourism, Government of India for the integrated development of theme-based tourist circuits. The scheme aims to promote, develop, and harness the potential of tourism in India.

There are in total 15 theme-based circuits in which Sambhar Lake is part of Desert Circuit and a budget of Rs 6396.37 Lakhs was sanctioned on date 30-09-2015 for Development of Sambhar Lake sites within a period of 2 years. (Copy of Budget Distribution & Scope of work is attached as Annexure - III)

Implementation of following activities is being considered under this scheme: -

- Sambhar Salt Complex
  - Salt Train & Dining Experience
    - Upgradation of Rail Track
    - Locomotive Engine for Meter Gauge
    - Signaling Communication & Precautionary Device
    - Procurement of Coaches
    - Maintenance Depot
    - Booking Kiosks, Support Infrastructure & Boarding Platform for Salt Train
  - Site Development for Sambhar Salt Ltd Complex
    - Parking for Cars & Buses
    - Complex Gate Development
    - Laser/Light & Sound Show
    - Site Development
  - Caravan Park
  - Craft Haat Development
    - Haat Development
    - Administrative Block
  - Festive Fair Ground
    - Local Bazaar

- Site Development & Boundary wall
- Basic Amenities
- Naliasar
  - Mini Desert Night Safari
  - Support Infrastructure for Desert Tourism
  - Tourism Information Center
  - Open Air Theatre
  - Water Deck (2 Nos.)
  - Lake Shoreline Development
  - Upgradation of Approach Road
  - Bus Stop (Drop-off point)
  - Camping & Log Huts
  - Electric Sub-station
- Naraina
  - Development of Ghats
  - Approach Road (0.33 Kms)
  - Basic Tourist Amenities
  - Information Signage (Drop-off point)
  - Sewage Treatment Plant (STP)
- Bicycle Trail
  - Development of Bicycle Track from Gudha to Jhapok (15.75 kms)
  - Administrative Block at Gudha
  - Wayside Amenities & Facilities (3 Locations)
  - Basic Amenities
- Devyani Kund
  - Arrangement of Shops (2 Nos.)
  - Arrangement of Cafeteria
  - Bus Stop (Drop-off Point)
  - Façade Lighting
  - Site Development
  - Gate Improvement
- Sharmistha Kund
  - Arrangement of Shops (1 No.)
  - Arrangement of Cafeteria
  - Bus Stop (Drop-off Point)

- Façade Lighting
- Improvement of Entry Gate & Boundary Wall
- Shakambari Mata
  - Arrangement of Shop (No. 1)
  - Arrangement of Cafeteria (No. 2)
  - Site Development
  - Façade Lighting
  - Hill Trail (245 Mtrs)
- Solar Lighting
  - Solar Street Lighting for Approach Road Nalaisar
  - Solar Street Lighting Naraina
  - Solar Street Lighting for Approach Road Bicycle trail

#### 4.1.2 SALT LAKE

Sambhar Lake, situated in the Indian state of Rajasthan, is a place where horizons stretch to infinity, where water and sky merge in a shimmer of gauzy blue. Civilization here goes back a long, long time and legends abound. According to one reference in the epic Mahabharata, Raja Yayati, emperor of Bharatvarsh (India) and a descendant of Lord Brahma the Creator, married Devyani, daughter of Shukracharya (the guru of demons) who lived by the lake.



According to another legend, the Goddess Shakambhari bestowed the lake upon the people of the area some 2,500 years ago. A small glimmering white temple in her honor stands under a rocky outcrop jutting into the lake. The locals will insist that you visit her temple before doing anything else.

### Salt Processing Plant & Salt Museum

The Salt Processing plant is a must visit to get acquainted with the process of salt extraction. Witnessing the salt carrying wagons and the narrow-gauge train is a memorable experience.

The Salt Museum is located near the Circuit House and it displays salt samples from all over India. It is housed in an old colonial building constructed by the British. Sambhar Salt Museum was closed when I visited. According to a local who showed me around, the structure in which the museum is located is more than 100 years old. There is also a map denoting 'Sambhar Lake Water Sources' built in front of the museum; albeit in a damaged condition.



### Salt Train



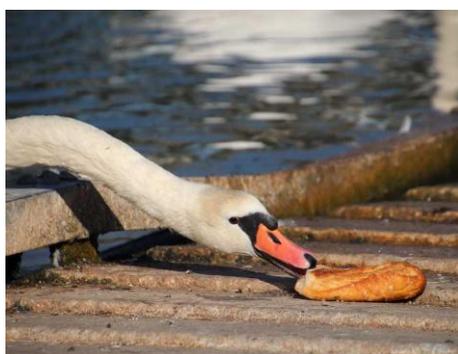
While driving from Sambhar Town to Shakambari Devi Temple, we were lucky to spot the tiny narrow-gauge goods train passing on the banks of the lake carrying salt in its bogies. The engine was painted in a colorful blue and it felt like a toy train!

### Heritage Toy Train Ride



One can take a train ride along with the lake to experience the vastness of the lake and see the salt production. The train with 2-3 wagons takes travelers at specified times. The boarding point is near Sambhar Heritage Resort tents at Jhapok. It is a narrow-gauge train. Narrow gauge trains are reminiscent of the colonial period.

### Bird Watching



Bird watching is one of the top activities at Sambhar Lake because of the obvious reasons. Thousands of migratory birds visit the wetland in the winter season and you can find all sorts of domestic and exotic birds resting here, out of which pink flamingos are the largest lot. This activity attracts a lot of birdwatching enthusiasts to come and visit. All you need to carry is a pair of binoculars and maybe a mat to sit on.

### **Shooting Destination**

#### *Songs & Movies Shooting*

For its exotic locations the Bollywood has found an interest in Sambhar. Scenes of some of the popular cinema shot here includes names like R Rajkumar Hirani's popular film – P K, Ashutosh Gowariker's – Jodha Akbar,



Rakesh Omprakash Mehra's – Delhi-6 and Sanjay Leela Bhansali's -Ram Leela. Nissan GT-R recreated the approximate outline of Indian map spanning 3 km in length and 2.8km in width with a total outline periphery of 14.7km at the vast expanse of Sambhar Lake.

#### *Wedding Shoots*

The lake is an artist's canvas. The lake provides an ideal backdrop for a pre wedding shoot. Let us organize a wedding shoot in the midst of the silver lake, a landscape that touches the horizon and grants a breath-taking panorama.

### **Camping and Star Gazing**

Camping is another very popular activity at Sambhar Lake. Since the place reverberates with peace and calm, and also provides amazing sunset views, many people come here to camp and watch the clear night skies. Since the lake is surrounded by a lot of highways, it is very easy to find a perfect ground to camp. Just make sure it is dry enough and at a



safe distance from the water. You can also register with any of the several camping sites and avail their packages. Or you can just pitch a tent on your own, light a bonfire, cook a meal and you are good to go. But for this you would need to seek permission from the local authorities.

Walk with a lantern amidst the stars, an unmatched experience lets you enjoy the beauty of Sambhar by night when the salty sand banks glitter and the serene quietness of the wilderness fills the air.

Sambhar Lake's remote location offers minimal light pollution, making it an ideal spot for stargazing and astronomy enthusiasts. Stargazing events, workshops, and telescope rentals can be organized

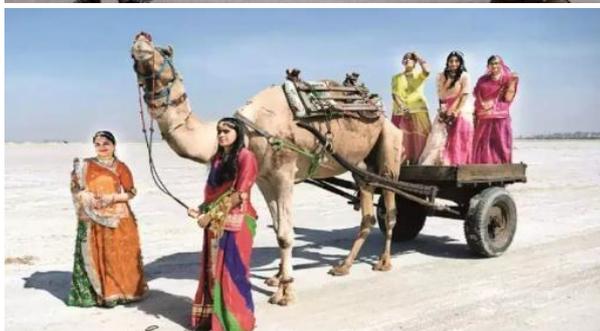
### Adventure Sports

Adventure enthusiasts can choose from various enthralling activities like ATV's, rock climbing, archery etc. each carried out with a professional coach to ensure safety with maximum fun.



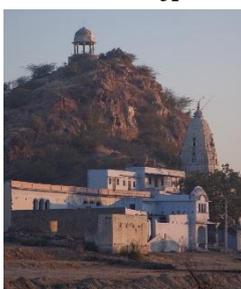
### Sambhar Festival

The three-day festival is organized by Jaipur district administration and the state tourism department in the month of February. Various exciting events are organized viz. folk performances by local artists, full moon events, kite flying, camel riding, parasailing, ATV riding, bird watching, motorcycle rally, and even a photography competition.



#### 4.1.3 Historical Places

Historical records reveal that the town of Sambhar was founded by Raja Vasudev of the Chauhan dynasty in 551 AD. Over time, the Sindhias, Marathas and Mughals ruled it and in 1709, it was retrieved by the Rajputs. The rulers of Jaipur and Jodhpur jointly owned the lake, and who in 1870 leased it to the British. The name, Sambhar, stems from the 2500 years old tutelary deity, Shakambhari, of the Chauhan Rajputs (Prithviraj Chauhan).



- Shakambhari Mata Mandir
- Devayani Kund
- Sharmistha Sarovar
- Dadu Dwara Temples Naraina

## 4.2 POTENTIAL ACTIVITIES

### - **Nature Walks and Hiking**

Designated nature trails and hiking routes can allow visitors to explore the lake's surrounding wetlands, salt flats, and salt pans. Interpretive signs and guides can provide information about the unique flora and fauna.

### - **Boating & Canoeing**

Eco-friendly boating and canoeing tours can be offered on the lake, allowing visitors to get closer to bird habitats and enjoy the serene surroundings. Kayaking and paddle boarding can also be options.

### - **Cultural Experiences**

Highlight the rich cultural heritage of the region with cultural performances, music, dance, and traditional Rajasthani cuisine for tourists to enjoy.

### - **Hot Air Balloon Rides**

Hot air balloon rides can provide a unique perspective of Sambhar Lake's landscape and birdlife, offering tourists a memorable and scenic experience.

### - **Yoga and Wellness Retreats**

Promote wellness tourism by hosting yoga and wellness retreats against the backdrop of the tranquil lake, allowing visitors to relax and rejuvenate.

### - **Souvenir Shopping**

Establish local craft markets or souvenir shops where tourists can purchase handmade crafts, traditional textiles, and products that support local artisans.

### - **Sunset Point and Sunrise Point**

Sambhar Lake, with its vast expanse and serene surroundings, offers beautiful opportunities for both sunset and sunrise viewing. Various points can be officially designated as "Sunset Point" and "Sunrise Point".

## 4.3 INFRASTRUCTURE AND FACILITIES

Government needs to make sure that any new infrastructure development is in harmony with the natural landscape and is designed to minimize environmental impact. Following activities

- **Well-Maintained Trails:** Create and maintain designated walking and viewing trails to minimize habitat disruption and erosion.

- **Beatification of Nawa to Khakdaki Road:** This road is passing through the lake and should be developed as a beautiful spot for bird watching, photo shots, leisure drive

- **Bird Watching Platforms:** Construct bird watching platforms and hides at strategic locations to provide opportunities for bird enthusiasts to observe wildlife without causing disturbance.
- **Waste Management:** Install trash bins and restroom facilities at visitor centers and key points to encourage proper waste disposal.
- **Permit and Fee System:** Implement a permit and fee system for visitors, with proceeds going toward conservation and infrastructure maintenance. This can help fund conservation efforts and control visitor numbers.
- **Tourist Information Centers & Ticketing:** Tourist support and guidance centre, Ticketing counters should be established at various locations for facilitating ease for the tourists
- **Licensed Guides:** Local people should be encouraged to become tourist and nature guide. Certification courses should be started locally by the Government and proper education and training should be imparted to the interested locals. Such trainings and educational programs should be organized on regular basis.

#### 4.4 MARKETING & PROMOTION ACTIVITIES

- **Online Presence:**

Create an official website dedicated to Sambhar Lake with information about its ecology, visitor guidelines, and attractions.

Maintain active social media profiles to share stunning photos, videos, and updates about the lake.

Engage with travelers and enthusiasts through social media platforms to answer questions and provide information.

- **Educational Materials:**

Develop brochures, pamphlets, and informative materials highlighting the lake's biodiversity, conservation efforts, and sustainable tourism practices.

Offer downloadable guides and maps for visitors to plan their trips effectively.

- **Collaboration with Travel Agencies:**

Partner with travel agencies and tour operators to include Sambhar Lake in their Rajasthan tour packages.

Provide them with promotional materials and itineraries that showcase the lake's attractions.

- **Online Advertising:**

Run online advertising campaigns targeting eco-tourists, birdwatchers, nature enthusiasts, and travelers interested in sustainable tourism.

Use Google Ads, social media ads, and travel-related websites for promotion.

- **Collaborative Marketing:**

Collaborate with Rajasthan Tourism and other government bodies to promote the lake as a significant ecological and cultural destination.

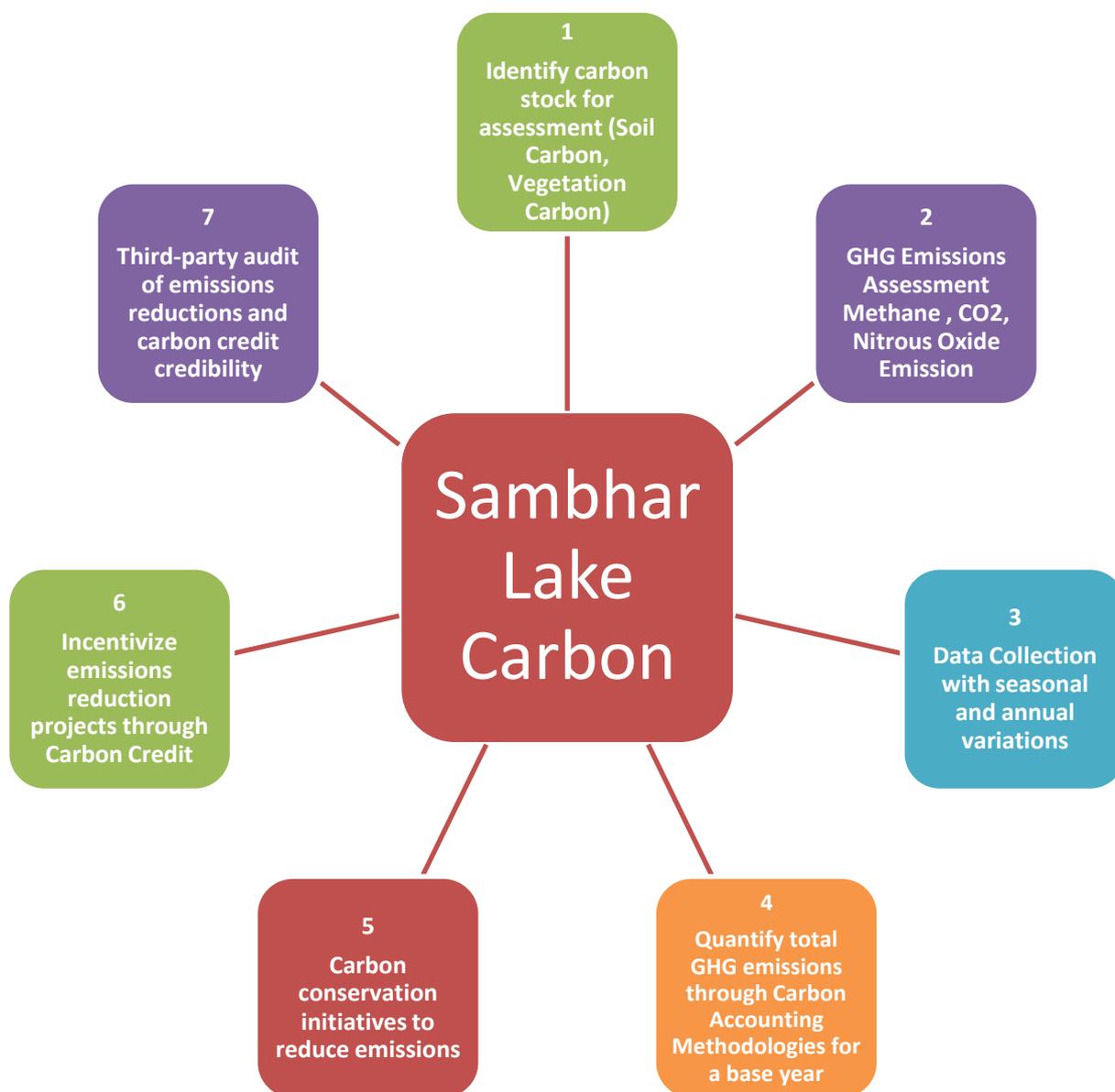
Participate in tourism trade shows and exhibitions to attract travel industry professionals.

- **Photography and Art Contests:**

Organize photography and art contests that encourage visitors to capture the beauty and biodiversity of the lake. Share the winning entries on social media and in promotional materials.

## 5 SAMBHAR LAKE CARBON AND GHG INVENTORY

Greenhouse gas (GHG) inventory protocol for Sambhar Salt Lake in Rajasthan, India, is a detailed and data-intensive process. Creating a greenhouse gas (GHG) inventory for Sambhar Lake, establishing a baseline GHG account, and implementing initiatives to conserve carbon will address climate change and promote sustainability. Additionally, a "green credit" program, also known as a carbon credit program, can provide incentives for carbon reduction efforts. The protocol would typically involve the following steps:



## 6 RECOMMENDATIONS IN VARIOUS OTHER REPORTS

Several reports have been prepared by various agencies on Sambhar Lake from time to time. The main recommendations of their reports are as follows:

### 6.1 NEERI REPORT (2016)

The National Environmental Engineering Research Institute (NEERI) was requested to develop effective management strategies based on scientific studies recommending measures for restoration and protection of the Sambhar wetland by the Environment Department. A report was submitted by NEERI on 27.07.2016 in which following recommendations were proposed:

#### 6.1.1 Conservation and restoration of ground water

As far as the ground water quality is concerned, large tract of the area is covered by saline areas with the Sambhar Lake covering ~ 230 sq km.

- In view of the high salinity, bore wells and hand pumps are not installed by the villagers for potable purpose.
- The area has scant rainfall (400-600 mm annual rainfall) and there is large scale withdrawal of ground water by industries as well as for agricultural purposes causing lowering of water table often below 50 m and leading to drying of many shallow wells.
- The present stage of ground water development in the area is about 158% which indicates that the scope of ground water development is already exhausted, and it comes under over-exploited/ critical category the Central Ground Water Board (CGWB) [Central Ground Water Board (CGWB), District ground water brochure: ground water scenario; Jaipur (2007); Ajmer (2008), and Nagaur (2009)]. However, it does not take into account the saline areas.
- The present annual ground water withdrawal is estimated at 112.42 MCM (industrial draft only) as against the annual ground water availability of 20.05 MCM (ground water level fluctuation method).

#### 6.1.2 Ground water conservation measures

- Under any circumstances ground water withdrawal should not exceed the availability of ground water, i.e., 20.05 MCM per year.
- In order that the withdrawal does not exceed 20 MCM, optimal pumping of ground water is mandatory. The pumping pattern has to be drastically restricted, and it can be maintained to three hours (03 h) per day for all the industrial pumping wells in the region.
- As shown below the annual ground water withdrawal for industries estimated @ 06 hours per day for 240 days per year is 42.42 MCM.

Salt producing center	Number of operational Wells	Pumping hours/day	Total discharge @ 6 h per day (cum/day)	Total discharge @ 240 days per year (cum/year)
Sambhar Salt Ltd.	81	6	9,272.88	<b>22,25,491.20</b>
Nagaur region (private operators)	1,130	16	1,29,362.40	<b>3,10,46,976.00</b>
Ajmer region (private operators)	333	16	38,121.84	<b>91,49,241.60</b>
<b>Total</b>				<b>4,24,21,708.80</b> <b>= 42.42 MCM/year</b>

Source: NEERI REPORT, 2016

- However, it should be noted that the actual pumping rate is not just 6 hours per day. With longer pumping hours per day (as shown in section 7.1.2) and increase in number of operational wells the annual ground water withdrawal for industries will be even more.
- But the annual ground water availability of the area as estimated by ground water level fluctuation method is 20.05 MCM.
- It is estimated that the annual withdrawal will not exceed 20.21 MCM provided the pumping is restricted to three (03) hours per day for the given number of pumping wells (81+ 1130+ 333=1544) in the region.
- However, with the increase in number of pumping wells in the region the pumping hours per day must be decreased accordingly so that the annual withdrawal does not exceed the annual ground water availability (20.05 MCM).
- Thus the pumping pattern has to be drastically restricted for the sustainable development of ground water resources in this region.
- It is, therefore, necessary that a proper inventory of operational wells in the salt manufacturing industries be prepared and no further permission be given for operating new well.
- It is also mandatory that water meters be installed at all the salt manufacturing units to regulate the use of ground water for industrial purpose.
- Construction of rainwater harvesting trench having depth of few feet around the periphery as defined and demarcated by the competent authorities is advisable. This will help to replenish ground water and will also eradicate illegal pipelines drawing lake water for salt production.
- Piezometres (depth up to 100 m) should be installed near the cluster of salt manufacturing units in the region and regular monitoring (every month) of the ground water level should be carried out by a competent authority. Biodiversity conservation including waterfowl habitat improvement-

### 6.1.3 Biodiversity conservation measures

- Protection of the Lesser Flamingo and other water birds at their habitats include appropriate management of key sites and increasing public awareness of the need for protecting the Lesser Flamingo and its habitats.
- Appropriate management of key sites includes,
  1. Eluding salt mining or other activities within an area of 500 m buffer surrounding the lake and the dry lake bed. If at all new leased areas for salt mining are essential it should be allowed beyond this zone.
  2. Restricting excessive water withdrawal as a Sambhar lake conservation strategy, and no permission should be given for water withdrawal within the buffer zone.
  3. Impeding unregulated human tourism near the breeding grounds of Flamingoes particularly at the center of Sambhar Lake.
  4. Increasing public awareness about regulation of free flow of river water and feeding the river without any encroachment.
  5. Avoiding construction of small dams in catchment area of the lake.
- Regulatory agencies should identify and form a Sambhar lake management cell for biomonitoring, ecological conservation and for all type of data collection for the water birds and their habitat. Experts in biological sciences from universities should be invited as members of the management cell.
- An action plan as per the Agreement on the Conservation of African- Eurasian Migratory Water birds (AEWA) and International Single Species Action Plan format prepared by Bird Life International should be prepared to provide a framework for the conservation of the Lesser Flamingo in all of its primary range states. The International Single Species Action Plan has been developed using internationally agreed standards including the monitoring and evaluation of implementation, linking threats, actions and measurable activities.
- The long-term goal of the plan is to upgrade the Lesser Flamingo from a “near-threatened” species to a species of “least concern” in the IUCN Red List of Threatened Species. The short term goal is to maintain the species’ current population and range, while the medium-term goal is to promote an increase in population size and range.
- Because the Lesser Flamingo is an itinerant species dependent on a network of sites in several countries, successful implementation of the plan will require effective international coordination of organization and action.
- It is imperative that the conservation strategies be implemented and strict surveillance be in place to observe and guard the lake from the anthropogenic activities, and to support large population of flamingos, other water birds and faunal diversity.

### 6.1.4 Legal and institutional changes

- As a priority a special authority must be constituted or the Sambhar Wetland Authority as proposed to be constituted should review the existing laws to identify and recommend the ways in which existing legal and institutional

measures can be better harmonized with conservation without the need for new laws or regulations.

- If it is not feasible to harmonize an existing law and conservation then Sambhar Wetland Authority should identify such legal and institutional measures that need to be removed.
- The Authority should start working for high prioritize areas where laws and institutions should be upgraded or consolidated or where new legislative or economic instruments should be developed.
- The Authority must arrange to have the periphery of the lake be identified and demarked.
- Illegal pumping wells in the region, if any, must be identified and stopped with immediate effect.
- Ground Water Legislation should be implemented with high priority for regulation and control of ground water.
- Long term police camping within the lake/ along the boundary with construction of watch towers is recommended to stop any infringement or illegal activity such as excess and illegal pumping of lake water, encroachment of the lake area, disturbances to waterfowls, and plying motor vehicles across the lake.

#### **6.1.5 Soil and moisture conservation**

- The major LULC classes are fallow land, scrubland, vegetation and crop land (in post-monsoon) apart from the dry lakebed. The drainage concentration is more in these areas.
- Except for the dry lake bed all these LULC classes need soil and moisture conservation works.
- Different engineering and vegetative measures can be used according to the need of the situation.

#### **6.1.6 Forestry development-**

- The indirect importance of forests for lake conservation is that they work as the protective sheet from soil erosion. Hence higher the forest density lesser will be the soil erosion.
- It also contributes to biomass creation to meet fuel wood and fodder requirement of local people.
- Therefore, locally available useful species should be introduced in the catchment area.

#### **6.1.7 Catchment management-**

The catchment of Sambhar Lake is very huge having typical terrain. Two main seasonal rivers, Mendha and Rupangarh that feed the lake run through this catchment. Therefore, conservation of the whole catchment is important, and should be considered for complete solution of lake survival through the following measures:

- Any development in the catchment must be planned considering its impact on the lake.
- The main requirement of lake is 'water'; hence free flow of water to the lake is essential. A detail database of structures on the main flow of the river that are restricting river water to reach the lake should be prepared, and strategies for making such structures in the catchment should be revised.
- Except Forest department which does the developmental work keeping the conservation aspect in mind other Government departments such as Irrigation, Revenue, Agriculture & Soil Conservation etc. have their activities with less concern to the conservation of the area. Therefore, decision making at the apex level and implementation of plan at ground level should be given to a separate body such as the proposed Sambhar Wetland Authority which will apply conservation plan effectively.
- The entire catchment should be divided under priority classes for development activities.

#### 6.1.8 Public outreach and education

A major challenge for salt lake wetland conservation is a lack of public understanding of the value and significance of the lake. The public, landowners and decision-makers must prioritize the importance of salt lake wetland, and take more informed decisions in relation to conservation of wetland.

- Awareness program at Panchayat level should be conducted to educate about conservation of precious ground water resources and training on rainwater harvesting will be beneficial to check decline in water level and justified use.
- It is also necessary to increase public support for wetlands conservation and to emphasize the connection between wetland conservation and bird conservation.
- Traditional rainwater harvesting structures like 'Tankas', roof top rain water storage should be encouraged for day to day requirements which will reduce ground water draft.
- Use of water saving devices, drip irrigation, close field distribution channels etc. should be promoted.
- Modern agricultural management techniques have to be adopted for effective and optimum utilization of the water resources. This can be achieved by maintaining irrigation through minimum pumping hours as per minimum requirement of water by the crop, and also by selecting most suitable cost effective crop pattern.
- Salt resistant crops can be sown in the area having brackish to saline ground water.

#### 6.2 VINOD KAPOOR COMMITTEE (2010)

The State Government vide order dated 10.03.2010 of the Industries department directed Shri Vinod Kapoor to enquire and inspect as below:

1. Illegal encroachments made by private production units in Sambhar Salt Area.

2. Assess number of bore walls dug around the lake area and laying of electrical lines for salt production in and around sambhar salt area.
3. Assess number of the illegal electric connections for illegal salt extraction in sambhar lake area.

The Committee submitted its report on 20.04.2010. The recommendations are as follows:

- Sambhar Salt Ltd. (SSL) may prepare new map with reference to revenue demarcation on ground
- SSL will fund for establishing 1 SHO post for protection of Sambhar
- SSL to have trenches around their demarcated boundary to avoid any future illegal activities
- Illegal encroachments to be removed by joint team of revenue/ police/SSL & Ajmer VVNL
- Ajmer VVNL to ensure no further illegal electricity usage in bore wells & salt extraction.
- A 2- tier committee to be formed at State (under ACS Industries), District (under Collector Jaipur) & Sub-division (under SDM) level for permanent monitoring & problem solving
- Permanent watch towers to be set up at identified sites
- Ample vigilance staff & security team may be deployed by SSL
- Brine availability status to be verified before any further land conversion, & new rules to be formulated for this purpose
- No land conversion for salt extraction to be given in Jaipur district
- Other directions to SSL for regulated checking & monitoring of the leased areas.

### 6.3 MOEF&CC RECOMMENDATIONS (2017)

In compliance of the Hon'ble NGT Central Bench Bhopal directions in OA 54/2015 Babulal Jajoo Vs President and State of Rajasthan, OA No. 72/ 2016 Ajay Dubey ( Wetland Authority) Vs State of Rajasthan, and OA no. 92/2016 Villagers of Sinodiya & 3 Ors Vs UOI MoFF & CC deputed a team consisting of following members for site visit:

1. Dr H.S.Singh Member Board of Wildlife.
2. Dr B.C Choudhary Expert Member Central wetlands Regulatory Authority.
3. Dr M Ramesh , Scientists "D" NRCD, MoEF & CC.

The Committee submitted its report is October 2017 as under:

1. Salt production should be regulated
2. Illegal withdrawal of salt water may be stopped immediately
3. The salt preparation activities of the SSL through private parties may be examined under prevailing laws.

4. No new permission should be granted to the private persons by the revenue authority
5. Sustainability of salt production should be decided after scientific studies
6. A nodal agency for coordinating integrated management may be established, which will function under SWA.
7. Management plan should aim to restore the naturalness of the lake.
8. Ecotourism may be developed.
9. Boundary of the lake may be demarcated on ground.
10. Status of surface water inflow may be monitored.
11. Capacity building training program may be organized.
12. Integrated Management Plan to be submitted to National Wetland
13. Committee along with recommendations of SWA.

#### **6.4 REPORT OF MOEF & CC (2019)**

On request of the State Government, MoEF & CC constituted a team vide letter dated 21.11.2019 to assess and enquire the matter of mass death of birds in Sambhar Lake area. The Team consisted of:

1. Deputy Inspector General of Forests (WL) MoEF & CC
2. Scientist WII Dehradun
3. Scientist IVRI Bareilly

Recommendations of the team are as follows:

1. Salt production should be regulated.
2. Illegal withdrawal of salt water may be stopped immediately.
3. The salt preparation activities of the SSL through private parties may be examined under prevailing laws.
4. No new permission should be granted to the private persons by the revenue authority
5. Sustainability of salt production should be decided after scientific studies
6. Nodal agency for coordinating integrated management may be established, which will function under SWA.
7. Management plan should aim to restore the naturalness of the lake.
8. Ecotourism may be developed.
9. Boundary of the lake may be demarcated on ground.
10. Status of surface water inflow may be monitored.
11. Capacity building training programme may be organized.
12. Integrated Management Plan to be submitted to National Wetland Committee along with recommendations of SWA.

## 6.5 RECOMMENDATIONS OF CO-ORDINATION WORKSHOP BY FOREST DEPARTMENT, GOVERNMENT OF RAJASTHAN:

A Workshop was held at Jaipur on 24.11.2019 involving all scientific agencies and concerned departments such as Animal Husbandry Department, Forest Department, Local administration, RAJUVAS etc. Following observations were made:

- Sambhar Lake not being under direct administrative control of Forest or Animal Husbandry Department, responsibility of ownership & day to day management needs to be decided.
- Regular surveillance & monitoring is needed on site for at least a month to check further incidences.
- Exit policy needs to be finalized for withdrawal of emergency staff deployed at site by Forest & Animal Husbandry Department.
- NEERI management plan needs to be finalized & implemented on ground.
- State Wetland Authority to be made functional for long term effective monitoring.
- Checking of pollution & control of illegal activities need to be monitored at regular intervals to be done by RSPCB/ Sambhar Salt & Revenue Authorities.
- Avian botulism is non-contagious to human, thereby no need of panic.
- Deep burial & pit burning both are equally effective for carcass disposal, as per Ramsar Wetland Disease Manual, Technical Report No. 4.

## 6.6 OTHER REFERENCE REPORTS

- i. National Workshop on 'Strategic Planning for 2-Step Integrated Management Planning of Wetlands & Implementation of Amrit Dharohar dated 13-15 July 2023.
- ii. Management Plan for Sambhar Lake – Department of Environment dated 06-08-2020
- iii. Managing Wetlands (Handbook 18) – Ramsar Handbooks 4<sup>th</sup> Edition
- iv. Studies of Birds Fauna of Sambhar Salt Lake by Garima Kumari Chauma (Research Scholar SPC Government College, Ajmer) & Dr. Rashmi Sharma (Associate Professor Zoology, SPC Government College, Ajmer)
- v. Monitoring migratory birds of India's largest shallow saline Ramsar site (Sambhar Lake) using geospatial data for wetland restoration by Rajashree Naik & Laxmi Kant Sharma
- vi. The birds of Sambhar Lake and its environs by Harkirat Singh Sangha
- vii. Fauna of Sambhar Lake by Zoological Survey of India
- viii. Avian botulism mass mortality from Sambhar Salt Lake, Rajasthan, India by Monali Sen & Kavita Singh
- ix. Sambhar Lake a Wetland – An Assessment by Dwarkesh Shukla (General Manager (Tech), Hindustan / Sambhar Salts Limited) and Abdul A. Rahaman (Resource Bio-Techs Pvt. Ltd.)

- x. Opening up the windows of a unique landscape Sambhar – Document by Rajasthan Tourism Department
- xi. Hydrobiology of hypersaline Sambhar Salt Lake a Ramsar Site, Rajasthan, India by Anupama P. Pathak & Makarand N. Cherekar (School of Life Sciences, Swami Ramanand Teerth Marathwada University, Nanded, India
- xii. Shekhawati River Basin, Hydrogeological Atlas of Rajasthan
- xiii. Anthropogenic impact on hydrological balance and water quality in Sambhar Lake Rajasthan by Narendra K. Meena, Department of Earth Sciences, IIT Roorkee
- xiv. Scaling up wetland conservation, wise use and restoration to achieve the Sustainable Development Goals – Ramsar Convention on Wetlands
- xv. JOINT COMMITTEE REPORT in National Green Tribunal (CZ), O.A. 94 of 2022 Order dated 7.12.2022 in the matter of Sambhar Salt Lake V/s AVVNL
- xvi. Pilot Study for Sambhar Salt Lake by State Remote Sensing Application Centre (SRSAC)

## 7 LEGAL AND POLICY FRAMEWORK

Some of the acts, rules, compliances, and notifications which may be applicable for Conservation work of Sambhar Lake are listed below. However, this may not be the exhaustive list and conservation work, or any related activity as discussed in this report should follow applicable laws.

- **Sambhar Lake Management Authority (SLMA):** SLMA was constituted on date 18.10.2021 for the purpose of conservation and protection of ecology of the Sambhar Lake and its nearby Area through corporation and coordination between Various State, National and International Institutions.

Document regarding role and responsibility of SLMA is attached as Annexure IV.

- **Appointment of Nodal Officer:** Nodal Officer has been appointed on 22.09.2023. Order regarding the same is attached as Annexure V.
- **Ramsar Convention compliance:** Ensure strict adherence to the Ramsar Convention's principles and guidelines for the conservation and sustainable use of wetlands. This includes protecting the lake's ecological character.
- **Wetlands (Conservation and Management) Rules, 2017:** The Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified Wetlands (Conservation and Management) Rules, 2017 under the provisions of the Environment (Protection) Act, 1986 as regulatory framework for conservation and management of wetlands across country to conserve, manage and maintain the ecological character of the wetlands without restricting its wise use.
- **State Wetland Authority:** The Rajasthan State Wetland Authority (RSWA) is responsible for the conservation and sustainable management of wetlands within the state, including Sambhar Lake.
- **Wildlife Protection Acts:** The Wildlife Protection Act, 1972, provides legal protection to wildlife species and their habitats, including those found around Sambhar Lake.

The Rajasthan Wildlife (Protection) Act, 1972, is the state-level legislation for the protection of wildlife and their habitats in Rajasthan.

- **Forest Conservation Acts:** The Forest (Conservation) Act, 1980, governs the diversion of forest land for non-forest purposes. This law is relevant to projects or activities near Sambhar Lake that may impact forested areas.
- **Environmental Impact Assessment (EIA) Regulations:** Projects and developments in and around Sambhar Lake may be subject to EIA regulations under the Environment (Protection) Act, 1986. EIA studies assess the potential environmental impacts of projects.

- **Biodiversity and Conservation Acts:** The Biological Diversity Act, 2002, promotes the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from the use of biological resources.

The Rajasthan Biological Diversity Rules, 2004, provide guidelines for the conservation and sustainable use of biological resources in the state.

- **Water Resource Laws:** Laws related to water resources management, including water quality and water usage, may apply to Sambhar Lake. The Rajasthan Water (Prevention and Control of Pollution) Act, 1974, and the Water (Prevention and Control of Pollution) Act, 1974, are relevant in this context.
- **Land Use and Zoning Regulations:** Land use planning and zoning regulations, including those related to wetlands and water bodies, can impact developments around Sambhar Lake. Local authorities and the Rajasthan Town Planning Act, 1954, may be involved.
- **Local Governance:** Panchayati Raj Institutions (PRIs) and municipal bodies play a role in local governance and may have policies and regulations related to land use and environmental conservation.
- **Rajasthan Tourism Policy:** Rajasthan Tourism Policy 2020 may influence tourism-related activities and development in and around Sambhar Lake.
- **The Rajasthan Ecotourism Policy 2021:** It aims to harness the state's ecotourism potential while promoting sustainable practices. It defines ecotourism activities as nature-based experiences focused on raising awareness about the natural and cultural heritage of Rajasthan.

## 8 SUMMARIZED MANAGEMENT PLAN & RECOMMENDATIONS

S.No.	Objective	Measures	Short Term/Long Term Plan
1	Salt Extraction	Sustainable Salt Extraction Limit to be defined as excess salt production effects the lake ecology	Short Term Action Plan
		Regulate Salt Production Practices & responsible disposal of bitterns	Short Term Action Plan
		Implement Brine Recycling systems for reusing brine for salt production	Short Term Action Plan
		Clear regulations & guidelines for salt production, including licensing requirements and Environment Impact Assessment (EIA) before permitting new salt production projects	Short Term Action Plan
		Significant fines & penalties for individuals or entities found guilty of illegal salt farming, encroachment, illegal bore-wells, etc	Short Term Action Plan
2	Protection & Restoration	Demarcation & Delineation of Sambhar Lake boundary along with creation of Buffer zone and wetland reserves.	Short Term Action Plan
		Removal of Illegal Encroachments from the lake area	Short Term Action Plan
		Bio-fencing along the lake boundary	Long Term Action Plan
		Action on Lake water extraction through Illegal Water pipes and unauthorized bore wells	Short Term Action Plan
3	Catchment Area / Water shed Management	Watersheds, Check Dams and Anicuts should be such that the minimum quantity of water should reach the lake area	Short Term Action Plan
		Removal of Encroachments from the catchment area	Short Term Action Plan
		De-silting structures should be build to control the entry of silt into the lake area	Short Term Action Plan
		Silt Trap Structures should also be constructed on the feeding rivers of the lake	Long Term Action Plan

S.No.	Objective	Measures	Short Term/Long Term Plan
		De-silting of river catchment area in order to restore its natural flow	Long Term Action Plan
		Regular Cleaning & Maintenance of the Silt Trap Structures	Long Term Action Plan
4	Wildlife Conservation & Rescue of Birds	Setting up of Research & Testing Laboratories	Long Term Action Plan
		Setting up of Rescue & Medical Centre	Long Term Action Plan (Temporary Shelter can be installed until full facility is not started)
		Maintaining records of Flora & Fauna of Sambhar lake	Short Term Action Plan
5	Sampling & Analysis of Lake Water	Setting up of Labs for regular water sampling, analyze change in chemical properties of lake water, etc	Long Term Action Plan
		Health Card of Wetland on set parameters to be issued on regular intervals	Short Term Action Plan
		Regular Sampling & Testing of lake water	Short Term Action Plan
6	Regulation of Tourism & Infrastructure Development	Land Identification for tourist activities like bird watching, camping & Star Gazing, jeep safari track, etc around lake area	Short Term Action Plan
		Framing of guidelines for eco-friendly Infrastructure development	Short Term Action Plan
		Licensing & Organizing of Tourist Activities	Short Term Action Plan
		Development of Subsequent Infrastructure like Hotels, Roads, Restoration of Heritage Properties, etc	Long term Action Plan
		Eco friendly resorts and lodges	Long Term Action Plan
7	Waste Management	Construction of Solid waste Management plant at different locations around lake	Long Term Action Plan
		Recycling Plants	Long Term Action Plan

S.No.	Objective	Measures	Short Term/Long Term Plan
		Industrial waste treatment plants	Long Term Action Plan
		Formulation of Rules & regulations for City waste and Industrial waste	Short Term Action Plan
8	Industries & regulations	Licensing of Industries	Short Term Action Plan
		Rules & Regulations for Industrial waste	Short Term Action Plan
		Restriction on Production Capacity	Short Term Action Plan
		Strict action on Illegal Salt Farming, Illegal bore wells, polluting industries, etc	Short Term Action Plan
9	Socio-economic development through Public Awareness & Engagement	Public Education – Conduct workshops and awareness program regarding Importance of Wetland, Ramsar Principals, responsible behaviours around the wetland	Short Term Action Plan
		Engage Local Community, indigenous groups, NGO, etc in the decision making process	Short Term Action Plan
		Locals to be trained as Naturalists, Tour Guides	Long Term Action Plan
		Revenue sharing mechanism with local communities in tourism activities	Long Term Action Plan
		Homestays for tourists for authentic cultural experience	Long Term Action Plan
10	Monitoring & Evaluation	Study need to be done for finding sustainable salt extraction from lake without effecting lake ecosystem	Long Term Action Plan
		Study of average water levels so that natural habitat of waterfowl is not disturbed	Long Term Action Plan
		Regular Water Level and Water quality Testing	Short Term Action Plan
		Regular monitoring & reporting waste management	Short Term Action Plan

## 9 ANNEXURES

**Annexure I: Google Earth Images**



December – 1985



December – 1990



December – 1995



December – 2000



December – 2005



December – 2010



December – 2015



December – 2020

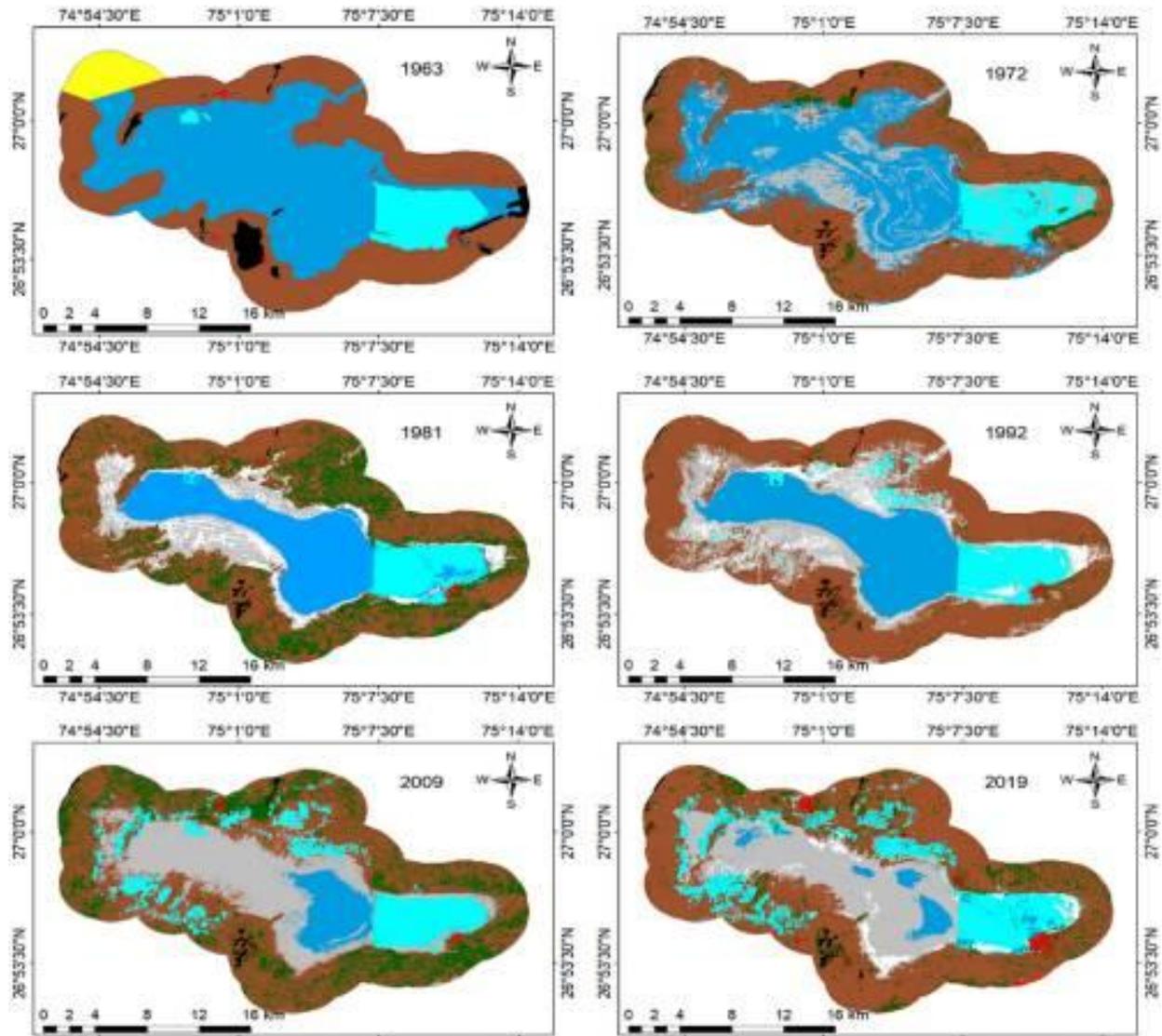


September – 2023

**Annexure II: LULC (Land Use Land Cover) Details**

LULC Map based on the following research-

“Spatio-temporal modelling for the evaluation of an altered Indian saline Ramsar site and its drivers for ecosystem management and restoration” by Rajashree Naik & Laxmikant Sharma Department of Environmental Science, School of Earth Sciences, Central University of Rajasthan, Bandarsindri, Ajmer, Rajasthan, India. CA-Markov model using the geospatial platform with the ground observations for the identification was used in research.



**Legend**

- |            |                   |            |             |               |
|------------|-------------------|------------|-------------|---------------|
| Wetland    | No data available | Salt pan   | Saline soil | Aravali hills |
| Vegetation | Settlement        | Salt crust | Barren land |               |

### Annexure III: Swadesh Darshan - Budget Distribution & Scope of work for Sambhar Lake

राजस्थान सरकार  
निदेशालय, पर्यटन विभाग  
सं. 19/19 (281) के प्र.यो./पवि/15/III/1753-57  
पता: 11/06/2020

क्रमांक : एफ.19 (281) के प्र.यो./पवि/15/III/

दिनांक :

सहायक महा निदेशक (स्वदेश दर्शन),  
पर्यटन मंत्रालय, भारत सरकार,  
ट्रांसपोर्ट भवन, पार्लियामेंट स्ट्रीट,  
नई दिल्ली।

विषय:-स्वदेश दर्शन योजनान्तर्गत सांभर लेक टाउन का डेजर्ट सर्किटविकास कार्य प्रोजेक्ट में उपयोगिता एवं कार्यपूर्णता प्रमाण-पत्र मिजयाने बाबत।

संदर्भ:- आपकी स्वीकृति क्रमांक: 12(D1)/2015-एसडी दिनांक: 30.9.2015

महोदय,

उपर्युक्त विषयान्तर्गत संदर्भित स्वीकृति के द्वारा पर्यटन मंत्रालय, भारत सरकार की स्वदेश योजना में स्वीकृत सांभर लेक टाउन का डेजर्ट सर्किट विकास कार्य प्रोजेक्ट में प्रथम, द्वितीय एवं तृतीय किश्त के रूप में राशि रूपये (1279.27 + 1790.88 + 127.93 + 1500.73 + 418.18 लाख) 5117.09 लाख निर्भरता की गयी है। उक्त प्रोजेक्ट कार्यकारी एजेंसी राजस्थान पर्यटन विकास निगम लि०, जयपुर के द्वारा पूर्ण किया जा चुका है, जिसके सम्बन्ध में राशि रूपये 5589.29 लाख का उपयोगिता प्रमाण-पत्र संलग्न कर अनुरोध है कि इस प्रोजेक्ट में शेष राशि और निमुक्त करने का श्रम करावें।

भवदीय,

संलग्न: उपरोक्तानुसार

AMD  
11/06/2020

ह/-

(डॉ. भवर लाल)  
निदेशक, पर्यटन

क्रमांक : एफ.19 (281) के प्र.यो./पवि/15/III/1753-57 दिनांक : 20/06/2020

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है:-

1. निजी सचिव, सचिव, पर्यटन मंत्रालय, भारत सरकार, ट्रांसपोर्ट भवन, पार्लियामेंट स्ट्रीट, नई दिल्ली।
2. निजी सचिव, प्रमुख शासन सचिव, पर्यटन विभाग।
3. प्रबन्ध निदेशक, राजस्थान पर्यटन विकास निगम।
4. अतिरिक्त निदेशक, पर्यटक स्वागत केन्द्र, नई दिल्ली।
5. कार्यकारी निदेशक (कार्य), राजस्थान पर्यटन विकास निगम लि०, जयपुर।

संयुक्त निदेशक (विकास)

450  
12/19

**RAJASTHAN TOURISM DEVELOPMENT CORPORATION LIMITED**  
 3rd Floor Paryatan Bhawan Opp. Vidhayakpuri Police Station Jaipur  
Phone no.0141-5115780

No. 1534

Date. 6-12-19

Director,  
 Department of Tourism,  
 Government of Rajasthan,  
 Jaipur.

Sub:- Utilisation Certificate and Item wise details of the project for Development of Sambhar Lake Town and other Destinations in Jaipur District, Rajasthan (Desert Circuit in Swadesh Darshan Scheme)

Dear Sir,

With reference to the subject cited above, find enclosed herewith the Utilisation Certificate, of the project under CSS as per details given below.

S.No	Name of project	Utilisation certificate
1.	Development of Sambhar Lake Town and other Destinations in Jaipur District, Rajasthan (Desert Circuit in Swadesh Darshan Scheme)	Enclosed

The above documents are being enclosed for your information and further necessary action please. It is also requested to kindly arrange to release the balance amount at the earliest so that prorata progress of works could be achieved and completed in time. It is also submitted that work of Sub-station and SEL Show will be carried out by us as the process is under progress.

Thanking You,

Your Sincerely,

S.A.  
 (Madhav Sharma)  
 Executive Director(Works)

Encl: As above 1534

No.

Date. 5-12-19

1. Additional Director (Dev.) Department of Tourism, Govt. of Rajasthan, Jaipur.
2. The Executive Director (F), RTDC Ltd., Jaipur.
3. The Dy. Director (Dev.), Department of Tourism, Govt. Rajasthan Jaipur.



Executive Director (Works)  
 Executive Director (Works)

## DRAFT MANAGEMENT PLAN OF SAMBHAR LAKE

FORMS

GFR 19

GFR 19-A

[See Rule 22(1)]

Form of Utilization Certificate

(Where expenditure incurred by Govt. Bodies only)

454  
626UTILISATION CERTIFICATE

SN	LETTER NO. & DATE	AMOUNT ( Rs. in lacs)	
1	12(01)2015-SD DATED 30.9.2015	Rs. 6396.37 lacs	Certified that out of Rs. 6396.37 of grants in aid sanctioned during the year 2015-16 in favour of Principal Secretary (Tourism, Govt. of Rajasthan under this Ministry/Department of Tourism, Govt. of India letter No. given in the margin and Rs. NIL lacs on account of unspent balance of the previous year, a sum of Rs. 5589.29 lacs has been utilized upto the month of JULY.2019 for the purpose of Development of Sambhar Lake Town other destinations in Jaipur District, Rajasthan under Desert Circuit in Swadesh Darshan Scheme for which it was sanctioned.
	Total	Rs. 6396.37 lacs	

1. Certified that I have satisfied myself that the condition on which the grants in aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of Checks exercised:

1. Works are being executed in accordance with PWD Schedule of Rates
2. All codal formalities have been followed during tender invitation & execution
3. All works are being executed as per original plans, design, drawings etc.
4. No works of the sanctioned project are being executed on land/property owned by private individual/trust.
5. All works are being executed as per PWF &AR and GF&AR.

Divisional Engineer  
RTDC Ltd., Jaipur

Jitendra

Executive Director (Works)  
RTDC Ltd.  
Executive Director-Works  
RTDC Ltd., Jaipur

## DRAFT MANAGEMENT PLAN OF SAMBHAR LAKE

ITEMWISE DETAILS OF ACTUAL EXPENDITURE & COST SUMMARY			
1. Name of the State : RAJASTHAN			
2. NAME OF THE PROJECT AND LOCATION: - DEVELOPMENT OF SAMBHAR			
3. YEAR OF SANCTION	2015-16		
4. No. & date of sanction	12(01)/20154/sd-30.9.2015		
5. Cost of the project	6396.00 lakhs		
6. Date of commencement of the work	15.11.2015		
7. Amount of released so far	4698.91		
	Installment	Date of release	
By Govt. of India	1 <sup>st</sup> Installment	nj	1279.27
	2 <sup>nd</sup> Installment	.03.2017	1790.98
	3 <sup>rd</sup> Installment		1628.66
	4 <sup>th</sup> Installment		418.18
By State Government	1st Installment		
	2nd Installment		
		Total	5117.09
Sr. No.	Central Components	Amount of sanction	Amount utilised
A	Sambhar Salt Complex	3578.20	302021594.00
	B1. Salt Train and dining experience		
	B2. Site Development for Sambhar Salt Ltd		
	B3. Caravan Park		
	B4. Craft Haat		
	B5. Festive Fair Ground		
B	Naliasar	1388.51	137513109.00
C	Naraina	497.97	21940911.00
D	Bicycle Trail	287.65	19020946.00
	Devyani Kun	61.93	
	Sharmistha Kund	31.35	0.00
	Shakambari Mata	104.82	0.00
	Solar lighting	141.36	9792750.00
	Total (A+B+C+D)	6091.79	490289310.00
	Architecture Fees (2%)	121.83	9805786.20
	Contingencies (3%)	182.75	14708679.30
	Prorata Charges @9%		44126037.90
	Grand Total	6396.37	558929813.40

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 Executive Director (Works)  
 R.T.D.C. Ltd  
 JAIPUR

## DRAFT MANAGEMENT PLAN OF SAMBHAR LAKE

St. No.	Name of Components	Amount of Sanction	
A	<b>Shakambhari Mata Temple:</b>		
	Arrangement of Shop(No.1)	1.41	
	Arrangement of Cafeteria(No.1)	2.16	
	Site Development	69.21	
	Façade Lighting	19.70	
	Hill Trail(245 M)	12.34	
Sub Total		104.82	
B	<b>Sambhar Salt Complex:</b>		
B1	<b>Salt Train and Dinning Experience</b>		
	Upgradation of Rail Track	1183.63	
	Locomotive Engine for Meter Gauge	150.00	
	Signaling Communication and Precautionary Device (3.5 Lacs/Km)	94.5	
	Procurement of Coaches (Two Trolleys @ 6 Person Each & One Bogie @ 24 Tourist)	120.00	
	Maintenance Depot	300.00	
	Booking Kiosks, Support infrastructure and Boarding Platform for Salt Train	70.02	
	Water Deck (4 Nos)	18.69	205100000
Sub Total		1936.84	205100000.00
B2	<b>Site Development for Sambhar Salt Ltd. complex</b>		
	Parking for Cars and Buses	63.78	
	Gate Complex Upgradation	4.63	6233485.00
	Laser/Light and Sound Show	400.00	
	Site Development	480.78	37556362.00
Sub Total		949.19	43789847.00
B3	<b>Caravan Park</b>	282.49	25883955.00
Sub Total		282.49	25883955.00
B4	<b>Craft Haat</b>		

451  
623

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Executive Director (Works)  
R.T.D.C. Ltd.

## DRAFT MANAGEMENT PLAN OF SAMBHAR LAKE

	Development of Craft Hant (2.5 acres)	199.15	
	Administrative Block	28.25	11959739.00
Sub Total		227.40	11959739.00
	<b>Festival/Fairground</b>		
	Local Bazar	56.72	
	Site Development and Boundary Wall	114.27	
	Basic Amenities	11.29	15288053.00
Sub Total		182.28	15288053.00
Total B1+B2+B3+B4+B5		3578.20	302021594.00
<b>C</b>	<b>Devyani Kund</b>		
	Arrangement of Shops(2Nos.)	2.82	
	Arrangement of Cafeteria	2.16	
	Bus Stop (Drop-off Point)	-0.75	
	Facade Lighting	40.14	
	Site Development	5.35	
	Gate Improvement	10.71	
Sub Total		61.93	
<b>D</b>	<b>Sharmistha Sarovar</b>		
	Arrangement of Shops (1 No.)	1.41	
	Arrangement of Cafeteria	2.16	
	Bus Stop (Drop-off Point)	0.75	
	Facade Lighting	5.96	
	Improvement of Entry Gate and Boundary Wall	21.07	
Sub Total		31.35	
<b>E</b>	<b>Naliasar</b>		
	Mini Desert Night Safari	173.60	15918878.00
	Support Infrastructure for Desert Tourism	96.84	
	Tourism Information Centre	22.20	
	Open-Air-Theatre	100.08	
	Water Deck (Nos.2)	9.34	25257566.00
	Lake Shoreline Development	192.00	13719374.00
	Upgradation of Approach Road	258.64	25806416.00
	Bus Stop (Drop-off point)	1.51	
	Camping and Log Huts	484.30	56810875.00
	Electric Sub Station	50.00	
Sub Total		1388.51	137513109.00
<b>F</b>	<b>Naraina</b>		

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624

*M M*  
Executive Director (Works)  
R.T.D.C. Ltd.  
JAIPUR

	Development of Ghats	96.00	
	Approach Road(0.33 Kms)	44.98	
	Basic Tourist Amenities	11.29	
	Information Signage (4 Nos)	0.89	
			21940911.00
	Bus Stop (Drop-off Point)	0.75	
	Sewage Treatment Plant (STP)	344.06	
	<b>Sub Total</b>	<b>497.97</b>	<b>21940911.00</b>
<b>G</b>	<b>Bicycle Trail</b>		
	Development of Bicycle Track from Gudha to Jhapok (15.75Km)	243.88	
			19020946.00
	Admin Block at Gudha	28.25	
	Wayside Amenities and Facilities (3 Locations)	4.23	
	Basic Amenities	11.29	
	<b>Sub Total</b>	<b>287.65</b>	<b>19020946.00</b>
	Solar Street Lighting for Approach Road Naliasar	39.76	
	Solar Street Lighting Naraina	15.20	
			9792750.00
	Solar Street Lighting for Approach Road Bicycle trail	86.4	
		<b>141.36</b>	<b>9792750.00</b>
	<b>Grand Total A+B+C+D+E+F+G</b>	<b>5950.43</b>	<b>490289310.00</b>
	<b>Grand Total</b>		
	Add: Prorata Charges @ 9%		44126037.90
	Add: Architectural fees @ 2% & Contingency @ 3%	304.58	
			24514465.50
	<b>Total</b>	<b>6255.01</b>	<b>558929813.40</b>

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10. Details of next installment sought:

- (1) Installment
- (2) Project progress

It is certified that the expenditure detailed above, has been incurred only

Place:

Dated :

Executive Director (Works)  
R.T.D.C. Ltd.  
JAIPUR

*Handwritten signatures: JBM, Jitendra*

*Handwritten signature*  
Executive Director (Works)  
R.T.D.C. Ltd.  
JAIPUR

Completion certificate

Development of Sambhar Lake Town and Other Destinations in Jaipur District,  
Rajasthan under Desert Circuit In Swadesh Darshan Scheme

1.	Name of the State	Rajasthan	
2.	Name of Project (Circuit) and Location	Desert Circuit, Rajasthan	
3.	Name of Sub-Project (Destination)	Sambhar	
4.	Implementing Agency (ies)	Rajasthan Tourism Development Corporation (RTDC)	
5.	No. & Date of Sanction	12(01)/2015-SD; 30.09.2015	
6.	Sanctioned Cost of Project		
	Central Component (INR)	6396.37 Lakhs	
	State Component (INR)	Nil	
	Total (INR)	6396.37 Lakhs	
7.	Amount Utilised (INR)		
	Central Component	State Component	Total
	5589.29 Lakhs	Nil	5589.29 Lakhs
8.	Difference between Sanctioned cost and utilised. Reasons, if any	<ul style="list-style-type: none"> <li>The utilised amount mentioned above does not include cost for sound and light show and electric substation.</li> <li>Few sites/components (Shakambari Mata Temple, Devyanikund, Sharmishtha Sarovar, Bus drop off point at Nalisar, Sewage Treatment Plant &amp; Bus drop off point at Naraina, Admin Block at Gudha, Way Side Amenities and Facilities, Basic amenities under the component of Bicycle trail) were dropped.</li> <li>A competitive bidding process was followed where the allotted value was less than the sanctioned cost for all the components.</li> </ul>	

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9.	Date of commencement of work	October 2016
10.	Date of operationalisation of facility	February 2019
11.	Reasons for delay, if any	<ul style="list-style-type: none"> <li>• Identification of new sites due to floods in the region (reference to letter sent to MoT on 07.11.17).</li> <li>• Delay in finding vendor for the component of salt train and dining experience due to the scale and complexity of the component and to ensure quality in delivery (reference to letter sent to MoT on 07.11.17)</li> </ul>
12.	Item wise details of actual expenditure & cost summary	Attached as Annexure
13.	As-built drawings+ Actual site photographs & videography	Attached as Annexure
14.	Completion certificates for works	Attached as Annexure
15.	Operation and Management (O&M) Plan + Agency name & address	Attached as Annexure
16.	Status of Dashboard Completion on SD website	Complete
17.	Probable Outcome & Impact	Attached as Annexure
18.	Remarks, if any	

Place:

Date:

Signature of **असुरा कान्हाकर** सचिव  
पर्यटन, कला एवं संस्कृति,  
वन एवं पर्यावरण विभाग  
राजस्थान, जयपुर

*Jitendra*  
13.9.19  
Executive Engineer  
Raj. Tourism Dev. Corpn. Ltd.  
JAIPUR

*K. B. Pandya*  
(Dr. K. B. Pandya)  
MD RTDC

*Moh*  
13.9.2019  
Executive Director (Works)  
R.T.D.C. Ltd.  
JAIPUR

*Bhanwar Lal*  
(Dr. Bhanwar Lal)  
Director Tourism  
Rajasthan, Jaipur

## Annexure IV: Roles and Responsibilities of Sambhar Lake Management Agency

### RULES AND REGULATIONS

OF

### SAMBHAR LAKE MANAGEMENT AGENCY

केन्द्रीय प्रधान  
निदेशक एवं संयुक्त सचिव  
पर्यावरण एवं जलवायु परिवर्तन विभाग  
जयपुर

#### 1. Introduction:

- (a) The name of the Society shall be SAMBHAR LAKE MANAGEMENT AGENCY.
- (b) The registered office of the Society shall be situated at the office of Directorate, Environment and Climate Change, Room Number 8235, North West Wing, Government Secretariat, Jaipur, Rajasthan.

#### 2. Definition:

In these Rules and Regulations unless the context requires,-

- (a) "Agency" shall mean Sambhar Lake Management Agency;
- (b) "Chairperson" shall mean the chairperson of the Agency;
- (c) "Chief Executive Officer" shall mean the Chief Executive Officer of the Agency;
- (d) "Secretariat of Sambhar Lake Management Agency" shall mean the Directorate of Environment and Climate Change, Jaipur;
- (e) "Society" shall mean Sambhar Lake Management Agency; and
- (f) "Vice-Chairperson" shall mean the Vice Chairperson of the Agency.

#### 3. Membership:

The Society shall consist of the following:

- (a) Governing Body of the Agency as listed in the Memorandum.
- (b) Executive Body of the Agency.

#### 4. Governing Body:

S.N.	Name / Designation	Status
1.	Minister in-charge of the Forest, Environment and Climate Change, Government of Rajasthan.	Chairperson
2.	Chief Secretary, Government of Rajasthan	Vice - Chairperson
3.	Secretary to the Government in-charge of Forest, Environment and Climate Change Department	Ex-officio Member
4.	Secretary to the Government in-charge of Industries Department	Ex-officio Member
5.	Secretary to the Government in-charge of Local Self Government Department	Ex-officio Member
6.	Secretary to the Government in-charge of Finance	Ex-officio Member

(Niranjan Arya)  
Chief Secretary

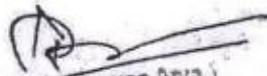
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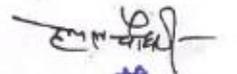
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	Department	
7.	Secretary to the Government in-charge of Animal Husbandry Department	Ex-officio Member
8.	Secretary to the Government in-charge of Mines Department	Ex-officio Member
9.	Secretary to the Government in-charge of Energy Department	Ex-officio Member
10.	Secretary to the Government in-charge of Revenue Department	Ex-officio Member
11.	Secretary to the Government in-charge of Panchayati Raj Department	Ex-officio Member
12.	Secretary to the Government in-charge of Urban Development & Housing Department	Ex-officio Member
13.	Secretary to the Government in-charge of Water Resource Department	Ex-officio Member
14.	Secretary to the Government in-charge of PHED	Ex-officio Member
15.	Secretary to the Government in-charge of Agriculture Department	Ex-officio Member
16.	Secretary to the Government in-charge of Ground Water Department	Ex-officio Member
17.	Secretary to the Government in-charge of Tourism Department	Ex-officio Member
18.	Secretary to the Government in-charge of Medical & Health Department	Ex-officio Member
19.	Vice Chancellor, Rajasthan University of Veterinary and Animal Sciences, Bikaner	Ex-officio Member
20.	Principal Chief Conservator of Forest (HOFF), Rajasthan	Ex-officio Member
21.	Chief Wildlife Warden, Rajasthan	Ex-officio Member
22.	Commissioner Industries, Rajasthan	Ex-officio Member
23.	Managing Director RIICO, Jaipur	Ex-officio Member
24.	Member Secretary, Rajasthan State Biodiversity Board, Jaipur	Ex-officio Member
25.	Member Secretary, Rajasthan State Pollution Control Board, Jaipur	Ex-officio Member
26.	CMD, Sambhar Salts Limited	Ex-officio Member
27.	Representative of National Wetland Authority (To be nominated by Chairperson NWA)	Ex-officio Member
28.	Two (02) experts in the field of Botany/ Zoology (To be nominated by Chairperson)	Member
29.	2 Experts in the field of Wetland Management (To be nominated by the Chairperson)	Member
30.	CEO of the Agency	Member Secretary

  
(Niranjan Arya)  
Chief Secretary

  
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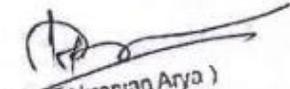


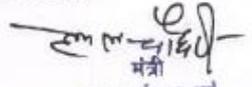
**4.1 Tenure of a Member of Governing Body:**

The ex-officio members in the Governing Body are by virtue of their post they hold. When a person is nominated as a Member of the Society by virtue of an office held by him/her, his/her membership shall terminate when he/she ceases to hold that office and the vacancy so caused shall be filled up by his/her successor to that office. The term of the non-official members of the Governing Body will be of three years.

**4.2 Meeting of the Governing Body:**

- (a) The governing body shall meet on such date and place as may be decided by its Chairperson in consultation with the Chief Executive Officer at least once in every six months.
- (b) **Notice of Meeting:**  
For any meeting of the governing body, fifteen days clear notice shall be given to the members, excluding the day of the posting of notice and day of the meeting: Provided that in case of urgency, the Chief Executive Officer of the governing body, shall be competent to convene the meeting at a short notice with the approval of the Chairperson of the respective body.
- (c) **Quorum of Meeting:**  
One third of the members including the Chairperson/Vice Chairperson shall constitute the quorum at any meeting of the governing body and any fraction shall be rounded off to the next higher number.
- (d) **Adjournment of Meeting:**  
Where a quorum is not present within thirty minutes of the time notified for the commencement of the meeting, the same shall stand adjourned to the same day, time and place the following week and the members present at the adjourned meeting shall form the quorum.
- (e) **Decision in Meeting:**  
The decisions in the meeting shall be by a simple majority of the members present and voting.
- (f) **Meeting to be Chaired by Chairpersons, etc.:**  
Every meeting of the Governing Body shall be chaired by the Chairperson and in his absence, by the Vice-Chairperson and in absence of both any member of the concerned body as decided by the said body.

  
(Niranjana Arya)  
Chief Secretary

  
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- (g) The Agency shall maintain a roll of Members at Registered Office and every Member shall sign the required form stating his/her occupation and address.
- (h) It shall be obligatory for a Member of the Agency to notify to the Chief Executive Officer on any change of his address or occupation or both.
- (i) The Agency shall enter in the register of Membership the following particulars, namely:-
- (i) Name and address of such Member.
  - (ii) The date on which the Member was admitted.
  - (iii) The date on which the Member ceased to be a Member.

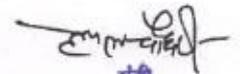
#### 4.3 Cessation of Membership:

- (a) A Member of the Governing body of the Agency shall cease to be a Member in the event of,-
- (i) resignation or death;
  - (ii) becoming of unsound mind;
  - (iii) conviction in a criminal offence involving moral turpitude; or
  - (iv) removal by the concerned department.
- (b) The Agency shall function notwithstanding that any person entitled to be a Member by reason of his office is not represented in the Agency for the time being. The proceedings of the Agency shall not be invalidated by the above reason or by the reason of any vacancy or defect in nomination of any of its Members.

#### 4.4 Powers and functions of the Governing Body:

- (a) The general superintendence of the affairs of the Agency shall be vested in the Governing body of the Agency. Save as expressly provided all the duties, powers, functions and rights whatsoever consequential or incidental to the carrying out of the objectives of the Agency shall be exercised by the Chairperson or by powers delegated to Chief-Executive. The Governing body shall be bound to carry out any direction that the State Government gives from time to time.
- (b) The Governing body will have the supervisory and advisory power to give any direction to the executive body.

  
(Niranjan Arya)  
Chief Secretary

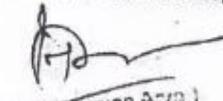
  
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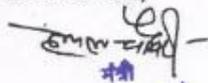


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- (c) To prepare and disseminate technical, administrative and financial guidelines and instructions.
- (d) All appointment of staff and their service conditions shall be decided by the Chairperson in consultation with Chief Executive Officer.
- (e) The tenure of the Governing body shall be for five years from the date of first meeting.
- (f) The Governing body shall meet at least once in six months to discuss and deliberate upon the activities of Agency.
- (g) In particular and without prejudice to the generality of the fore-going provisions and subject to the provisions of the Memorandum the Governing body may,-
- (i) make, amend, or repeal any By-law relating to the administration and management of the affairs of the Agency subject to the observance of the provisions contained in the Registration of Societies Act, 1860;
  - (ii) receive grants and contributions and have custody of the funds of the Agency;
  - (iii) prepare the budget estimates of the Agency for each year and sanction the expenditure within the limits of the budget;
  - (iv) enter into any agreement for and on behalf of the Agency;
  - (v) institute and defend all legal proceedings of the Agency;
  - (vi) appoint committees for disposal of any business of the Agency or for tendering advice in any matter pertaining to the Agency;
  - (vii) delegate to such extent as it may deem necessary its power to any officer or committees of the Governing body; and
  - (viii) take necessary action to comply with the provisions of the Wetland (Conservation and Management) Rules, 2017.
  - (ix) to oversee the following activities and impose regulations if required,-
    - 1) To prepare and implement a Comprehensive Management Plan for Sambhar Lake Area with delineation of responsibilities of various stakeholder Departments/ Agencies;
    - 2) To comply with the rules and guidelines of National Wetland Agency and State Wetland Agency;
    - 3) To settle land disputes with Sambhar Salts Limited with digitalisation of map for Sambhar Lake boundaries;
    - 4) To remove illegal encroachments and remove illegal bore wells;

  
 (Kiranjan Arora)  
 Chief Secretary

  
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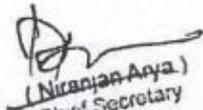
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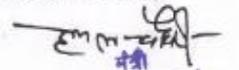


- 5) To stop disposal of solid waste, industrial waste and other waste in lakebed area;
- 6) To dispose the waste/ slurry of the salt extraction process;
- 7) To regulate tourism in the area;
- 8) To regulate salt and other industries in the area and oversee enforcement of Air and Water Act;
- 9) To prepare and implement Standard Operation Procedure (SOP) for Rescue of birds;
- 10) To make administrative arrangements for surveillance in the area;
- 11) Consider and approve the annual reports, audit reports, annual accounts, and the financial estimates of the Agency; and
- 12) Perform such additional functions and carry out such duties as may be assigned from time to time by the State Government.

#### 4.5 Proceedings of the Governing body:

- 4.5.1. The Chairperson may call meetings or by a requisition in writing signed by him may direct the Chief Executive to call a meeting of the Governing body at any time and on receipt of such a requisition, the Chief Executive shall forthwith call such a meeting.
- 4.5.2. Not less than fifteen clear days' notice of every meeting of the Governing body shall be given to each member.
- 4.5.3. Each member of the Governing body shall have one vote and in the event of the equality of the votes the Chairperson shall have a casting vote.
- 4.5.4. Any business which may be necessary for the Governing Body to perform, may be performed by a resolution in writing circulated among all its members and any such resolution so circulated and approved by a majority of members signing shall be as effective and binding as if such resolution has been passed at the meeting of the governing body.
- 4.5.5. Every meeting of the Governing body shall be presided by the Chairperson and in his absence by the Vice-Chairperson.
- 4.5.6. Subject to the Rules, Regulations, Bye laws and Resolutions of the Governing body, the Chief Executive of the Agency shall be responsible for proper administration of the Agency and for conduct of the staff.

  
(Niranjana Aya)  
Chief Secretary

  
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4.5.7. The members of the Agency, the Governing body or any Committee appointed by the Agency or the Governing body shall not be entitled to any remuneration save as provided under the Rules.

4.5.8. The Chairperson and the Chief Executive shall have the power to invite any person or persons not being members of the Governing body to attend the meeting of the Governing body but such invitees shall not have any voting right.

**4.6. Annual General Body Meeting:**

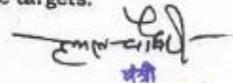
- (i) The Agency shall hold a General Body meeting of all members once in every year on 15 day's clear notice. Not more than 15 months should elapse between two successive annual general body meetings.
- (ii) The balance sheet and Auditor's report shall be placed at the General body meeting for its consideration.
- (iii) At least one third members of the Agency present at the Annual General Body Meeting shall form a quorum.
- (iv) The Chairperson of the Governing Body shall preside over the Annual General Body Meeting. In absence of the Chairperson, the members will decide and elect a member to chair the meeting.

**5. Duties of Chief Executive Officer of the Agency:**

The Chief Executive Officer shall function subject to the general superintendence, direction and control of the Chairperson or in his/her absence Vice-Chairperson'. He/she shall be responsible for convening the meetings. He/she shall formulate and supervise all the projects of the Agency and ensure their successful completion and implementation. He shall also prepare the Annual Plan of Operations in consultation with different departments and get it approved from the General Body. The duties outlined are as below:

- (a) To prepare and disseminate technical, administrative and financial guidelines, instructions, and approvals in connection with the works and other projects, programmes implemented by the Agency.
- (b) To prepare a mission document which shall state specific goals of the Agency, strategies to be adopted, programmes and works to be taken up, and time frame for achieving predetermined specific targets.

  
(Niranjani Arya)  
Chief Secretary

  
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जलवायु परिवर्तन विभाग  
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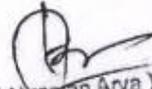


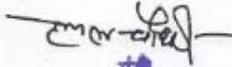
- (c) To carry out day- to- day activities of the society and other programmes being implemented by the society.
- (d) To execute and effectively implement the directions and decisions of Governing Body.
- (e) To exercise, such power, as may be necessary for achieving the objectives of the society.
- (f) Prepare and implement the Operation Manual of the Society
- (g) Prepare the Annual Plan of Operations and get it approved in the General Body meeting.
- (h) To perform all such functions and acts necessary for the furtherance of the objectives of the society within the framework of the rules and regulations laid down for the working of the Agency by the Governing Body or the Government

#### 6. Executive Committee:

The Executive Committee of the Agency shall be as follows:

S.N.	Name / Designation	Status
1.	Chief Executive Officer appointed/nominated by State Govt.	Chairman
2.	Deputy Chief Executive Officer Sambhar, Cum ADM, Ajmer	Ex-officio Member
3.	Deputy Chief Executive Officer Sambhar, Cum ADM, Nagaur	Ex-officio Member
4.	Deputy Chief Executive Officer Sambhar, Cum ADM, Jaipur	Ex-officio Member
5.	Deputy Chief Executive Officer, headquarter to be appointed/nominated by State Government	Member Secretary
6.	Representative of Environment Department	Ex-officio Member
7.	Representative of Local Self Government Department	Ex-officio Member
8.	Representative of Forest Department	Ex-officio Member
9.	Representative of Industries Department	Ex-officio Member
10.	Representative of Wildlife Wing	Ex-officio Member
11.	Representative of Mines Department	Ex-officio Member
12.	Representative of Tourism Department	Ex-officio Member
13.	Representative of Animal Husbandry Department	Ex-officio Member
14.	Representative of Sambhar Salts Limited	Ex-officio Member
15.	Representative of JVVNL / AVVNL	Ex-officio Member
16.	Representative of Collector Jaipur/ Nagaur/ Ajmer	Ex-officio Member
17.	Representative of Water Resource Department	Ex-officio Member
18.	Representative of PHED Department	Ex-officio Member

  
(Niranjan Arya)  
Chief Secretary

  
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वन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
रा. स्थान सरकार, जयपुर

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Designation : REGISTRAR  
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Reason: Approved  
Location: Jaipur



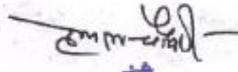
19.	Representative of Rajasthan State Pollution Control Board	Ex-officio Member
20.	Nominee of Vice Chancellor, RAJUVAS, Bikaner	Ex-officio Member

#### 6.1 Responsibilities of Executive Committee:

The Executive Committee shall have the following powers and perform the following functions, namely:-

- (a) manage the affairs and funds of the Society in accordance with the rules and regulations of the Society;
- (b) make endeavour to achieve the objectives of the Society and discharge all its functions;
- (c) exercise administrative and financial powers including power to engage any person for any specialised task in accordance with the rules and regulations of the Society;
- (d) enter into arrangement with other public or private organizations or individuals for furtherance of the objectives of the Society in accordance with the rules and regulations of the Society;
- (e) raise and accept endowments, grants-in-aid, donations, or gifts to the Society not inconsistent with the rules and regulations of the Society and interests of the Government;
- (f) takeover or acquire, in the name of the Society, by purchase, gift or otherwise, from Government or other public bodies or private individuals or organizations, any movable and immovable property in the State or elsewhere in conformity with the rules and regulations of the Society; and
- (g) Perform such other functions as are assigned to it by the General Body.
- (h) In particular and without prejudice to the generality of the fore-going provisions of the Memorandum the Executive body may,-
  - (a) receive grants and contributions and have custody of the funds of the agency;
  - (b) prepare the budget estimates of the agency for each year and sanction the expenditure within the limits of the budget;
  - (c) enter into any agreement for and on behalf of the Agency;

  
Kiran Anand  
Chief Secretary

  
मंत्री  
वन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
राजस्थान सरकार, जयपुर



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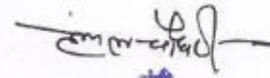
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- (d) institute and defend all legal proceedings of the Agency;
- (e) take necessary action to comply with the provisions of the Wetland (Conservation and Management) Rules, 2017;
- (f) to oversee the following activities and impose regulations if required,-
- (i) to prepare and implement a Comprehensive Management Plan for Sambhar Lake Area with delineation of responsibilities of various stakeholder Departments/ Agencies;
  - (ii) to comply with the rules and guidelines of the National Wetland Authority and State Wetland Authority;
  - (iii) to settle land disputes with Sambhar Salts Limited with digitization of map for Sambhar Lake boundaries;
  - (iv) to remove illegal encroachments and remove illegal bore wells.
  - (v) to stop disposal of solid waste, industrial waste and other waste in lakebed area;
  - (vi) to dispose the waste/slurry of the salt extraction process;
  - (vii) to regulate tourism in the area;
  - (viii) to regulate salt and other industries in the area and oversee enforcement of Air and Water Act;
  - (ix) to prepare and implement Standard Operating Procedure (SOP) for rescue of birds;
  - (x) to make administrative arrangements for surveillance in the area;
  - (xi) consider and approve the annual reports, audit reports, annual accounts, and financial estimates of the agency; and
  - (xii) perform such additional functions and carry out such duties as may be assigned from time to time by the State Government.

#### 6.2 Meetings of the Executive Committee:

- (a) Every meeting of the Executive Committee shall be presided over by the Chairperson, provided that in the absence of the Chairperson the members present in the meeting shall elect the person from amongst themselves to preside over the meeting.
- (b) One-half of the total members of the Executive Committee present in the meeting shall constitute the quorum, provided that no quorum shall be necessary in respect of any adjourned meeting.
- (c) The Executive Committee shall meet as and when necessary but at least once in every three months.

(Niranjan Arya)  
Chief Secretary

  
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वन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
स. १००३ मारवाड़, जयपुर

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- (d) The Minutes of proceedings of Executive Committee meetings shall be recorded and such minutes after due approval shall be issued by the Member Secretary.

### 6.3 Operational Units:

The agency may have following regulatory, enforcement and revenue units to perform functions of the agency:-

1. Enforcement unit for protection of land.
2. Discom unit for electricity connections.
3. Survey and Settlement unit.
4. Dedicated laboratory.
5. Research Unit.
6. Forest and wildlife Unit.
7. Veterinary Unit.
8. Law Enforcement Unit.
9. Finance Unit.
10. Operation and Maintenance Unit:

Provided that required legal action will be taken only by the officer/ authority empowered to take actions under the provisions of law.

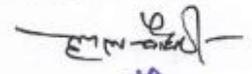
### 6.4 Property, Assets and Liabilities of the Society:

- (a) The income and property of the Society howsoever derived, shall be applied solely towards the promotion of the objectives thereof as set forth above.
- (b) No portion of the income and property of the Society shall be paid or transferred directly or indirectly, by way of dividend, bonus or otherwise, to the persons who at any point of time have been members of Society or to any person claiming through them.
- (c) Provided that nothing herein contained shall prevent the payment of remuneration to any member or any person in return of any service rendered to the Society or for any administrative expenses as stipulated in the Operation Manual.

### 7. Operation Manual:

The Chief Executive Officer shall prepare an Operation Manual of the Agency for its day-to-day functioning, which shall be duly approved in the General Body Meeting.

  
(Niranjan Arya)  
Chief Secretary

  
मंत्री  
वन, पर्यावरण एवं  
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**8. Powers of the Government:**

The Government may from time to time review the functioning of the Agency and issue such directions, as it may consider necessary in respect of the affairs of the Agency.

**9. Financial Resources:**

The following shall be the various sources of funds for running the affairs of the Agency in conformity with the rules and regulations of the Agency, namely: -

- (a) State Plan Budget received.
- (b) Recurring and non-recurring grants or loan received from State and Central Government or external aid routed through Central and State Governments.
- (c) Donation and loan from persons. (bodies who may or may not be members).
- (d) Income from investments.
- (e) Income from other sources.

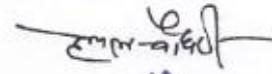
**10. Audit:**

The accounts of the Agency shall be audited annually by an empanelled Chartered Accountant to be appointed by approval of the Governing body. The forms in which accounts should be maintained and the manner in which they should be presented shall be as prescribed. The State Government can also carry audit of the accounts from Director, Inspection Department/Local Audit Fund Department.

**11. Financial regulations and procedures:**

The financial regulations and procedures, in particular the procedure for drawing up and implementing the budget of the Sambhar Lake Management Agency as outlined in the Operation Manual which shall be in accordance with the GF&AR Rules, the Rajasthan Transparency in Public Procurement Act, 2012 and the Rajasthan Transparency in Public Procurement Rules, 2013 and the orders issued by the State Government/Government of India, from time to time. in this regard.

  
(Niranjana Arora)  
Chief Secretary

  
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**12. Preparation of Budget:**

The Sambhar Lake Management Agency shall prepare its annual budget for the next financial year showing the estimated receipts and expenditure based on the annual plan of operation for the next financial year. The Annual Plan of Operation shall be prepared in the month of January taking into consideration all proposals from all stakeholders and shall be submitted to General Body in the month of March every year.

**13. Maintenance of accounts and preparation of annual statement of accounts:**

The monthly statement of accounts for the receipt and payment and expenditure shall be prepared and annual statement of accounts shall be maintained.

**14. Annual Reports:**

The annual report shall be prepared giving brief description of all activities undertaken from all sources of funds with separate headings and compiled in separate chapters and the reports shall include summary of works undertaken and schemes prepared and approved in annual plan of operation. A copy of the balance sheet and the annual report shall be certified by the Chairperson / Vice Chairperson and the Chief Executive Officer,

**15. Dissolution of the Agency:**

The Agency is irrevocable. However, in the event of any circumstances in which it is decided to terminate or dissolve the Agency, after the satisfaction of all its debts and liabilities, any assets and whatsoever be the same, shall not be paid to or distributed among the members of the Agency but shall be dealt as per the provisions of the Rajasthan Society Registration Act, 1958)

**16. Miscellaneous:**

(a) As and when there is any change in the nomenclature of Ministries, departments, or institution and designation mentioned, such changes shall automatically stand incorporated in the rules of the Society.

(Niranjan Arya)  
Chief Secretary

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राजस्थान सरकार, जयपुर

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- (b) Every staff of the Society may be sued or prosecuted by the Society for any loss or damage caused to the Society or its property or for anything done by him detrimental to the interests of the Society.
- (c) As the Agency is a statutory entity, creation of posts and other benefits to employees shall always be subject to prevalent Acts and Rules of State Government.
- (d) The Society may sue or to be sued in the name Chief Executive officer.

It is certified that this is the correct copy of the Rules and Regulations of the Sambhar Lake Management Agency.

1. Member

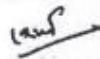


Vikram Keshav Pradhan  
Director & Joint Secretary  
Dept. of Env't & Climate Chg.

Place: Jaipur

Date 12/01/2022

2. Member

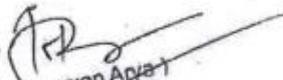


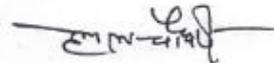
B. Praveen  
Secretary, Forest

3. Member



P.K. Upadhyay  
Secretary  
Environment & CC

  
(Niranjana)  
Chief Secretary

  
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वन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
राजस्थान सरकार, जयपुर



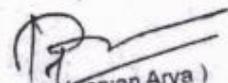
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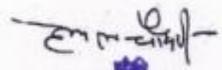
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31/01/2022  
16/12/21  
31/01/2022  
16/12/21  
31/01/2022  
16/12/21

**MEMORANDUM OF ASSOCIATION**  
**SAMBHAR LAKE MANAGEMENT AGENCY**

1. The name of the Society shall be "SAMBHAR LAKE MANAGEMENT AGENCY".
2. The registered office of the society shall be the Directorate, Environment and Climate Change, Room Number 8235, North West Wing, Government Secretariat, Jaipur, Rajasthan.
3. Operational area of the Agency shall be the Sambhar lake area and the area within 1 km from the lake boundary.
4. The objectives and functions of the Agency will be as follows:
  - (i) To protect and conserve the Sambhar Lake as a Ramsar site.
  - (ii) To protect the lake ecosystem with all its genetic diversity.
  - (iii) To survey, plan and prepare project proposal for Integrated Resource Management for all round development of the lake.
  - (iv) To execute various multi-dimensional and multi-sectoral developmental activities either itself or through some other agency.
  - (v) To cooperate and collaborate with other institutions of the State, National and International Institutions for holistic development of the lake.
  - (vi) To establish management information system for the lake.
  - (vii) To promote long-term multi-disciplinary research, prepare environment status report and establish education centre for the lake.
  - (viii) To facilitate:
    - Control of silt load of streams and rivers and their de-siltation.
    - Watershed management of the catchment area of lake.
    - Optimum inflow of rainwater into the lake and maintenance of salinity gradient of lake water.
    - Scientific management of weeds in and around the lake area.
    - Judicious and sustainable use of the Lake water.
    - Conservation of flora and fauna including wildlife.
    - Eco-restoration of the lake area including habitat improvement of wetland birds.
    - Moderation of lake level within the safe limits.

  
(Anjan Arya)  
Chief Secretary

  
Suresh Chand Meena  
वन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
राजस्थान सरकार, जयपुर



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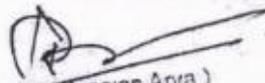
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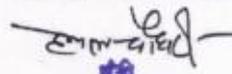
- Promotion of ecologically compatible and sustainable domestic and international tourism.
  - Socio-economic development of the area.
- (ix) To conduct Environmental Impact Assessment studies from time to time and take suitable corrective measures.
- (x) To upgrade the management and professional skills of the human resource associated with conservation and development of the lake.
- (xi) To co-operate and collaborate with other institutions in the State as well as National and International Institutions, to promote the cause of conservation and development of the Sambhar Lake and areas around it and its application in various fields.
- (xii) To ensure compliance of the Wetland (Conservation and Management) Rules, 2017.
- (xiii) To acquire by gift, purchase, exchange, lease, hire or otherwise any property movable or immovable and to construct, improve, alter, demolish, or repair and work as may be necessary or convenient for carrying on the activities of the Agency.
- (xiv) To draw, accept, make, and endorse for the purpose of the Agency, discount and negotiate Government of India and other promissory notes, bills of exchange, cheques, or other negotiable instruments.
- (xv) To do all other such things as may be necessary, incidental, or conducive to the attainment of all or any of the above objectives with or without collaboration of other Governments or Agencies.

#### 5. Governing Body:

The Governing Body to whom the management of the Society is entrusted as required under the Rajasthan Societies Registration Act, 1958 (Act No. 28 of 1958) shall consist of the following, namely:-

S.N.	Name / Designation	Status
1.	Minister in-charge of the Forest, Environment and Climate Change, Government of Rajasthan	Chairperson
2.	Chief Secretary, Government of Rajasthan	Vice - Chairperson
3.	Secretary to the Government in-charge of Forests, Environment and Climate Change Department	Ex-officio Member
4.	Secretary to the Government in-charge of Industries Department	Ex-officio Member
5.	Secretary to the Government in-charge of Local Self Government Department	Ex-officio Member
6.	Secretary to the Government in-charge of Finance	Ex-officio Member

  
(Niranjana Arya)  
Chief Secretary

  
जन, पर्यावरण एवं  
जलवायु परिवर्तन विभाग,  
समाजवादी सरकार, राजस्थान

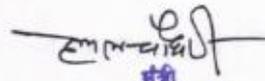
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	Department	
7.	Secretary to the Government in-charge of Animal Husbandry Department	Ex-officio Member
8.	Secretary to the Government in-charge of Mines Department	Ex-officio Member
9.	Secretary to the Government in-charge of Energy Department	Ex-officio Member
10.	Secretary to the Government in-charge of Revenue Department	Ex-officio Member
11.	Secretary to the Government in-charge of Panchayati Raj Department	Ex-officio Member
12.	Secretary to the Government in-charge of Urban Development & Housing Department	Ex-officio Member
13.	Secretary to the Government in-charge of Water Resource Department	Ex-officio Member
14.	Secretary to the Government in-charge of PHED	Ex-officio Member
15.	Secretary to the Government in-charge of Agriculture Department	Ex-officio Member
16.	Secretary to the Government in-charge of Ground Water Department	Ex-officio Member
17.	Secretary to the Government in-charge of Tourism Department	Ex-officio Member
18.	Secretary to the Government in-charge of Medical & Health Department	Ex-officio Member
19.	Vice Chancellor, Rajasthan University of Veterinary and Animal Sciences, Bikaner	Ex-officio Member
20.	Principal Chief Conservator of Forest (HOFF), Rajasthan	Ex-officio Member
21.	Chief Wildlife Warden, Rajasthan	Ex-officio Member
22.	Commissioner Industries, Rajasthan	Ex-officio Member
23.	Managing Director RIICO, Jaipur	Ex-officio Member
24.	Member Secretary, Rajasthan State Biodiversity Board, Jaipur	Ex-officio Member
25.	Member Secretary, Rajasthan State Pollution Control Board, Jaipur	Ex-officio Member
26.	CMD, Sambhar Salts Limited	Ex-officio Member
27.	Representative of National Wetland Authority (To be nominated by Chairperson NWA)	Ex-officio Member
28.	Two (02) experts in the field of Botany/ Zoology (To be nominated by Chairperson)	Member
29.	2 Experts in the field of Wetland Management (To be nominated by the Chairperson)	Member
30.	CEO of the Agency	Member Secretary

  
(Niranjan Arya)  
Chief Secretary

  
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वन, पर्यावरण एवं  
जलवायव परिवर्तन विभाग,  
राजस्थान सरकार, जयपुर

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**6. Desirous Person:**

We, the undersigned persons whose names and addresses are given below having associated ourselves for the purpose of described in this Memorandum of Association do hereby subscribe our names to this Memorandum of Association and set our hands hereunto and form ourselves into a Society under the Rajasthan societies Registration Act, 1958 (Act No. 28 of 1958).

S.N.	Name / Designation	Status	Signature
1.	Ms Sreya Guha, Principal Secretary Forest, Environment and Climate Change Department, Rajasthan.	Member	
2.	Shri Kunji Lal Meena, Principal Secretary, UDH Department Rajasthan.	Member	
3.	Ms Gayatri Rathore, Principal Secretary, Tourism Department Rajasthan.	Member	
4.	Shri Dinesh Kumar, Principal Secretary Agriculture Department Rajasthan.	Member	
5.	Shri P.K. Upadhyay, Secretary Environment and Climate Change Department, Rajasthan.	Member	
6.	Shri B. Praveen, Secretary Forest Department Rajasthan.	Member	
7.	Shri Anand Mohan, Member Secretary, Rajasthan State Pollution Control Board.	Member	
8.	Shri Vikram Kesharee Pradhan, Joint Secretary, Environment and Climate Change Department, Rajasthan.	Member	

We the undersigned certify that we know above persons and they have signed in our presence, we declare that we are not member of Society.

WITNESS:

1. Rakesh Mathur, Deputy Director (Env)
2. Jagbir Singh, ACP (DOIT) (Env)

(Niranjan Arya)  
Chief Secretary

मंत्री  
वन, पर्यावरण एवं  
संरक्षण विभाग,  
राजस्थान सरकार, जयपुर



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**Annexure V: Appointment of Nodal Officer**

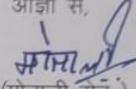



**राजस्थान सरकार**  
**पर्यावरण एवं जलवायु परिवर्तन विभाग**

क्रमांक : प.6(3)पर्या./2017/पार्ट-1 जयपुर, दिनांक: 22.09.2023

**कार्यालय आदेश**

माननीय वन, पर्यावरण एवं जलवायु परिवर्तन मंत्री महोदय की अध्यक्षता में आयोजित स्टेट वेटलेण्ड ऑथोरिटी की दिनांक 24.08.2023 को आयोजित षष्ठम बैठक में लिये गये निर्णयानुसार उप वन संरक्षक, जयपुर शहर को सांभर झील के संरक्षण, संवर्धन एवं एकीकृत प्रबंधन हेतु पर्यावरण एवं जलवायु परिवर्तन विभाग की ओर से फील्ड नोडल अधिकारी के रूप में नियुक्त किया जाता है।  
उप वन संरक्षक, जयपुर शहर अपने सांभर झील से संबंधित कार्य की रिपोर्टिंग मुख्य कार्यकारी अधिकारी, सांभर लेक मैनेजमेन्ट एजेन्सी, जयपुर को करेंगे।  
उक्त आदेश तत्काल रूप से प्रभावी होगा।

आज्ञा से,  
  
(मोनाली सेन)  
संयुक्त शासन सचिव

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. विशिष्ट सहायक, माननीय वन एवं पर्यावरण मंत्री, राजस्थान सरकार।
2. विशेषाधिकारी, मुख्य सचिव कार्यालय, जयपुर।
3. निजी सचिव, अतिरिक्त मुख्य सचिव, भू-जल एवं जनस्वास्थ्य अभियांत्रिकी विभाग
4. निजी सचिव, अतिरिक्त मुख्य सचिव, ग्रामीण विकास एवं पंचायती राज विभाग
5. निजी सचिव, अतिरिक्त मुख्य सचिव, उद्योग विभाग
6. निजी सचिव, अतिरिक्त मुख्य सचिव, वन, पर्यावरण एवं जलवायु परिवर्तन विभाग
7. निजी सचिव, अतिरिक्त मुख्य सचिव, जल संसाधन विभाग
8. निजी सचिव, अतिरिक्त मुख्य सचिव, राजस्व विभाग
9. निजी सचिव, प्रमुख शासन सचिव, नगरीय विकास विभाग
10. निजी सचिव, प्रमुख शासन सचिव, पर्यटन विभाग
11. निजी सचिव, प्रमुख शासन सचिव, पशुपालन मत्स्य एवं गोपालन विभाग
12. निजी सचिव, शासन सचिव, स्वायत्त शासन विभाग
13. निजी सचिव, शासन सचिव, पर्यावरण एवं जलवायु परिवर्तन विभाग
14. निजी सचिव, शासन सचिव, वन विभाग
15. अतिरिक्त प्रधान मुख्य वन संरक्षक, भारत सरकार, क्षेत्रीय कार्यालय, लखनऊ
16. प्रधान मुख्य वन संरक्षक, एवं मुख्य वन्यजीव प्रतिपालक, जयपुर
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19. जिला कलक्टर, जयपुर, ग्रामीण।
20. जिला कलक्टर, डीडवाना, कुचामन।
21. जिला कलक्टर, अजमेर।
22. उप वन संरक्षक, जयपुर शहर।

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संयुक्त शासन सचिव

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