

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL PRINCIPAL  
BENCH, NEW DELHI

Original Application No. 1345 of 2024

Anees Ali Vs State of Uttar Pradesh and Ors.

## I N D E X

S.No.	Particulars	Pages
1.	Reply on behalf of the respondent No.2 District Magistrate	
2.	Annexure R-1 True copy of EMGSM guidelines 2020	
3.	Annexure R-2 True copy of the Annual report River Sand Mining in Kerala 2023-2024	
4.	Annexure R-3 True copy of the DSR report of District Saharanpur dated 24.05.2024	
5.	Annexure R-4 True copy of the order dated 30.05.202 Passed by this Hon'ble Tribunal in OA No. 403 of 2022	
6.	Annexure R-5 True copy of the order dated 2.5.2022 Passed by the District Magistrate Saharanpur	
7.	Annexure R-6 True copy of the updation of detailed Replenishment studies of district Saharanpur completed by SDC with the Assistance of QCI/ NABET	

8. Annexure R-7  
True copies of minutes of 685<sup>th</sup> meeting  
Dated 31.12.2022 of DGM
9. Annexure R-8  
True cop of the order dated 25.01.2023  
Passed by this Hon'ble Tribunal in  
O.A. No. 403 of 2022
10. Annexure R-9  
A true copy of the order dated 06.05.2022  
Passed by this Hon'ble Tribunal in Original  
Application No. 140/2021
11. Annexure R-10  
True copy of the Chapter 15 of the Mines  
And Mineral (Development and Regulation)  
Act, 1957
12. Annexure R-11  
A true copy of the minutes of meeting  
Dated 24.05.2023 of SEIA

Filed by



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New Delhi  
Dated: 24.02.2025

**BEFORE THE HON'BLE NATIONAL GREEN  
TRIBUNAL PRINCIPAL BENCH,  
NEW DELHI**

Original Application No. 1345 /2024

Anees Ali ...Applicant

Versus

State of Uttar Pradesh & Ors. ...Respondents

**REPLY ON BEHALF OF RESPONDENT NO.2**

**DISTRICT MAGISTRATE**

**MOST RESPECTFULLY SHOWETH:**

That the applicant has filed present OA seeking to quash and set aside the district survey report 2024 for district Saharanpur or declare the district survey report 2024 for district Saharanpur as invalid, direct the respondents to carry out a fresh replenishment study for river Yamuna district Saharanpur & Yamuna Nagar through a credible government institution in terms of Chapter 5 of the MoEF's 2020 Guidelines, direct the respondents to conduct a river Audit of River Yamuna as required by the MoEF's 2020 guidelines and direct the respondents State of



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Uttar Pradesh to prepare a fresh district Survey Report for District Saharanpur in strict compliance with the MoEF's 2020 guidelines and other applicable laws. The answering respondent is submitting reply to the above original application of the applicant as follows:-

**PARAWISE REPLY:-**

1. That the contents of para 1 of the original application need no reply.
2. That in reply to the contents of para 2 (a) of the original application, it is submitted that the Chapter 4.1.1b) EMGSM Guidelines, 2020 "proposes" the river mapping and sand auditing of rivers while preparing DSR but there is no SOP/Guidelines issued by MoEF requiring mandatory procedure of "River Audits" to be followed while preparing DSR. It is further submitted that the issues raised by the applicant regarding river audits done by state of Kerala was examined and it was observed that State of Kerala has issued a Sand Audit report named-



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"Annual Report River Sand Mining in Kerala - 2023-2024." This report has been prepared in context to Chapter 9b & 29 of THE KERALA PROTECTION OF RIVER BANKS AND REGULATION OF REMOVAL OF SAND ACT, 2001 which is a state centric Act. Since the Notifications / Guidelines in general are applicable PAN India, there is a requirement of "Elaborated and Uniform" PAN India procedure w.r.t. River Mapping & Sand Auditing, which currently is not present in terms of MoEF Notifications/Guidelines. However the Sub-Divisional Committee while conducting replenishment studies and preparing DSR followed all requisite procedure including mapping of rivers and audits through Drone Surveys as required in Chapter-4 and Chapter-5 of the EMGSM Guidelines, 2020. True copy of EMGSM guidelines 2020 is annexed herewith and marked as **ANNEXURE R-1** (Pg. No. to )



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True copy of Annual report River Sand Mining in Kerala 2023-2024 is annexed herewith and marked as **ANNEXURE R-2** (Pg. No. to )

True copy of DSR Report of District Saharanpur dated 24-05-2024 is annexed herewith and marked as **ANNEXURE R-3** Pg. No. to )

3. That the contents of para 2 (b) of the original application need no reply.

4. That the contents of para 2 (c) of the original application need no reply.

That the contents of para 2 (d) of the original application need no reply.

6. That in reply to the contents of para 2 (e) of the Original Application, it is submitted that the applicant is not aware of the backgrounds and facts relating to replenishment studies and updation of DSR in District Saharanpur. The matter relating to replenishment studies and updation of DSR, specifically with regard to



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district Saharanpur, was dealt by this Hon'ble Tribunal in O.A. No. 403/2022 titled as Daljeet Singh Vs. State of U.P. and Ors, and in this matter this Hon'ble Tribunal had passed order dated 30/05/2022 as under-

"In the meanwhile no lease shall be granted and also no mining shall be commenced in any of the mining sites in District Saharanpur, Uttar Pradesh before completion of replenishment study, updation of DSR and grant of environmental clearance/CTE/CTO on the basis thereof in accordance with SSMG, 2016 and EMGSM, 2020" True copy of order dated 30/05/2022 passed by the this Hon'ble Tribunal in O.A. No. 403/2022 titled as Daljeet Singh Vs. State of U.P. and Ors, is annexed herewith and marked as **ANNEXURE R-4** (Pg No. to).

It is further submitted that the Sub-Divisional Committee (SDC) was already formed by order dated 2/5/2022 of the District Magistrate



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for conducting replenishment studies in district Saharanpur. True copy of order dated 2/5/2022 passed by the District Magistrate Saharanpur is annexed herewith and marked as **ANNEXURE R-5** (Pg No. to ).

The Sub-Divisional Committee was comprising of the officers from Revenue (ADM F/R Saharanpur), DFO Shivalik Range Saharanpur, Executive Engineer Irrigation Saharanpur Executive Engineer PWD Saharanpur, Regional Officer UP Pollution Control Board Mining Officer Saharanpur. The river wise detailed replenishment studies of district Saharanpur was completed by SDC with the assistance of QCI/NABET approved consulting agency in year 2022 and DSR was updated. True copy of updation of detailed replenishment studies of district Saharanpur completed by SDC with the assistance of QCI/NABET is annexed herewith and marked as **ANNEXURE R-6** (Pg No. to ).



In compliance to various orders of this Hon'ble Tribunal, the matter of replenishment

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studies was an ongoing process in various rivers/districts of Uttar Pradesh including district Saharanpur. A progress statement on completion of scientific replenishment studies of various rivers/districts of Uttar Pradesh (including district Saharanpur) was provided by DGM to SEIAA which acknowledged and considered it in its 685 meeting dated 31-12-2022. True copy of minutes of 685<sup>th</sup> meeting dated 31.12.2022 of DGM is annexed herewith and marked as **ANNEXURE R-Z** (Pg No. to ).



The matter relating to replenishment studies and updation of DSR of district Saharanpur in O.A. No. 403/2022 Daljeet Singh Vrs. State of U.P. and ors. was again taken up on 25/01/2023 and this Hon'ble Tribunal was pleased to disposed the O.A. after observing following facts -

"3. Reply has been filed by the Mining Department, UP to the effect that replenishment study had been conducted prior to the Draft Survey Report for

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Saharanpur River Bed Mining 2022. The DSR is at draft stage and is yet to be finalized.

4. In view of above, no further order is necessary.

The application is disposed of. All IAs also stand disposed of."

True copy of order dated 25/01/2023 passed by this Hon'ble Tribunal in O.A. No. 403/2022 Daljeet Singh Vrs. State of U.P. is annexed herewith and marked as **ANNEXURE R-8** (Pg No. to ).

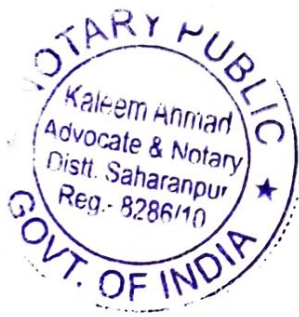
That in reply to the contents of para 2 (f) of the Original application, it is stated that the O.A. No. 140/2022 referred by the applicant is a disposed matter relating to Mr. Rakesh Verma Vs State of Uttarakhand Vs. MOEF which does not have any relation to replenishment study and DSR of Saharanpur district. The matter relating to replenishment studies and DSR by large concerned to district Banda was dealt by this Hon'ble tribunal in the matter of Raj Kumar vs.



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State of Uttar Pradesh & Ors in O.A. No. 140/2021. True copy of order dated 06.05.2022 passed by this Hon'ble Tribunal in original application No.140/2021 Raj Kumar Vs State of Uttar Pradesh & Ors. is annexed herewith and marked as **ANNEXURE R-9** (Pg No. to ).

It is worth mentioning that the results of replenishment studies form's the basis of DSR updation/modification, hence both the issue are inter-related. Since the DSR is to be prepared by Sub-divisional committee as per the judgment dated 10.11.2021 of the Hon'ble Supreme Court passed in Civil Appeal 3661-3662 of 2020 in the matter of State of Bihar and Others Vrs. Pawan Kumar, the primary responsibility replenishment studies lies with SDC, as both the issues i.e. replenishment study report and DSR are interrelated. The Chapter-5 of EMGSM-2020 Guidelines provides a procedure to be followed while conducting replenishment studies and do not provides any institutional mechanism. Rather



it requires involvement of local agencies (like district administration or SDC).

It is further submitted that the matter relating to replenishment studies and updation of DSR, specifically w.r.t. district Saharanpur, was dealt by this Hon'ble tribunal in O.A. No. 403/2022 Daljeet Singh Vrs. State of U.P. and ors., and the procedure followed has been elaborated above.

8. That in reply to the contents of para 2 (g) of the original application it is submitted that the Draft M-Sand Policy has been promulgated by State of U.P. its finalization/notification is yet to be done.



9. That in reply to the contents of para 2 (h) of the original application, it is submitted that the objection of the applicant are baseless and misleading. Any minor mineral in state is not regulated /categorized by the means of Website, as it requires Rules/Acts to notify thereon. It is a well-known fact that the powers to make rules and regulate minor mineral as per Chapter 15 in

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The Mines And Minerals (Development And Regulation) Act, 1957 has been provided to State governments. True copy of Chapter 15 of the Mines and Mineral (Development and Regulation) Act, 1957 is annexed herewith and marked as **ANNEXURE R-10** (Pg No. to ).

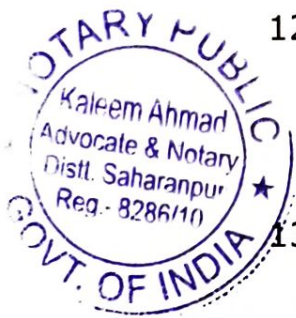
It is further submitted that the Schedule 2(k) of the Uttar Pradesh Minor Mineral Concession Rule-2021 issued on 29-October-2021 (UPMMCR-2021 in short) classifies "sand-bajri-boulders in mixed state found in river bed (RBM)" as one of the "Minor Mineral" present in the State. The applicant is misrepresenting the minutes of meeting of SEIAA dated 24.05.2024, regarding issue related to classification of minor minerals. The minutes of meeting of SEIAA dated 24.05.2024 is relating to approval of District Survey Report of district Saharanpur and not classification of minor minerals. True copy of minutes of meeting dated 24.05.2024 of SEIAA is annexed herewith and marked as **ANNEXURE R-11** (Pg No. to ).



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It is submitted that the referred minutes dated 24.05.2024 only provided a condition to be followed in future that DSR for each minor mineral should be submitted separately in line with MoEF Notification S.O. 141(E) dated 15.01.2016.

10. That the contents of para 2 (i) of the Original application need no reply.
11. That the contents of para 2 (j) of the Original application need no reply.
12. That the contents of para 2 (k) of the Original application need no reply.
13. That the contents of para (3) (grounds) of the Original Application are not admitted in the manner it has been stated, in reply thereto it is stated that the applicant is misquoting and misrepresenting the interpretations of the notification dated 15.01.2016. The MoEF Notification dt. 15.01.2016 primarily was issued in compliance of orders of the Hon'ble Supreme Court and NGT to streamline the process of



environmental clearance for mining of minor mineral in which it was significantly mentioned that MoEF in consultation with States has prepared Guidelines on Sustainable Sand Mining. The APPENDIX-X of the MoEF Notification dt. 15.01.2016 prescribes PROCEDURE FOR PREPARATION OF DISTRICT SURVEY REPORT - as per the Sustainable Sand Mining Guideline and provided a "structure" thereon. This "structure" specifically prescribes procedure to be followed while preparing DSR with regard to river bed minerals only. Since the MoEF Notification dt. 15.01.2016 was applicable to PAN India, this "structure" required reporting of river wise Total Mineral Potential including Boulder/Bajri/Sand. Since the above mentioned MoEF Notification dt. 15.01.2016 was river bed specific and did not prescribed procedure of minor minerals other than river bed, the MoEF later on issued Notification S.O. 3611 (E) dated 25-July-2018 and APPENDIX-XII of this Notification prescribed "FORMAT FOR PREPARATION OF DISTRICT SURVEY REPORT FOR MINOR MINERALS OTHER THAN SAND MINING OR



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RIVER BED MINING. It is very important to mention that under APPENDIX-XII of the MoEF Notification S.O. 3611 (E) dated 25-July-2018, it is clearly stated that "The District Survey Report for minor minerals other than sand mining or River bed mining shall be as per structure mentioned below: -".

"Hence, it is ample clear that DSR for sand mining or River bed mining does not requires any separate sub-classification or separate preparation and all the nature of river bed materials are to be signally dealt with, as per the APPENDIX-X I of the MoEF Notification S.O. 3611 (E) dated 25-July-2018."



It is submitted that the district Saharanpur is located in Shivalik region as a part of lesser Himalaya the minor mineral (Sand/Bajri/Boulder) here is naturally found in mixed state and its additional sub-classification is not possible practically. The Schedule 2(k) of the Uttar Pradesh Minor Mineral Concession Rule 2021

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issued on 29-October-2021 (UPMMCR-2021 in short) classifies "sand-bajri-boulders in mixed state found in river bed (RBM)" as one of the "Minor Mineral" present in the State.

14. That the contents of para (4) (grounds) of the Original Application need no reply.

15. That the contents of para (5) (grounds) of the Original Application are not admitted in the manner it has been stated, in reply thereto it is stated that the DSR has been prepared in conformity to Chapter 4 and Chapter 5 of the EMGSM-2020 Guidelines and the procedure has already been elaborated in above paras.



16. That the contents of para (6) (grounds) of the Original Application are not admitted in the manner it has been stated, in reply thereto it is stated that the DSR has been prepared in conformity to Chapter 4 and Chapter 5 of the EMGSM-2020 Guidelines and the procedure has already been elaborated in above paras.

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17. That the contents of para (7) and (8) of the grounds of the original application are not admitted in the manner it has been stated, in reply thereto it is stated that the Sub-Divisional Committee (SDC) was already formed by order dated 2/5/2022 of the District Magistrate for conducting replenishment studies in district Saharanpur. The Sub-Divisional Committee was comprising of the officers from Revenue (ADM F/R Saharanpur), DFO Shivalik Range Saharanpur, Executive Engineer Irrigation Saharanpur Executive Engineer PWD Saharanpur, Regional Officer UP Pollution Control Board Mining Officer Saharanpur. The river wise detailed replenishment studies of district Saharanpur was completed by SDC with the assistance of QCI/NABET approved consulting agency in year 2022 and DSR was updated.



18. That the contents of para (9) to (11) of the grounds of the original application are not admitted in the manner it has been stated, in reply thereto it is stated that the matter relating

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to replenishment studies and updation of DSR, specifically with regard to district Saharanpur, was dealt by this Hon'ble Tribunal in O.A. No. 403/2022 titled as Daljeet Singh Vs. State of U.P. and Ors, and in this matter this Hon'ble Tribunal had passed order dated 30/05/2022 as under-

"In the meanwhile no lease shall be granted and also no mining shall be commenced in any of the mining sites in District Saharanpur, Uttar Pradesh before completion of replenishment study, updation of DSR and grant of environmental clearance/CTE/CTO on the basis thereof in accordance with SSMG, 2016 and EMGSM, 2020"



It is further submitted that the Sub-Divisional Committee (SDC) was already formed by order dated 2/5/2022 of the District Magistrate for conducting replenishment studies in district Saharanpur. Apart from above Chapter-5 of EMGSM-2020 Guidelines provides a procedure to be followed while conducting replenishment

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studies and do not provides any institutional mechanism. Rather it requires involvement of local agencies (like district administration or SDC).

19. That the contents of para (12) to (14) of the grounds of the original application are not admitted in the manner it has been stated, in reply thereto it is Pertinent to mention here that the D.S.R. has been uploaded in the website of District Administration on dated 05.07.2024 . The uploaded D.S.R. is still available on the website of District Administration Saharanpur and is accessible to the public domain as well further the same has been intimated and communicated to the District Administration of border District Administration Yamunanagar of Haryana. It is also pertinent to mention here that the Sub Divisional Committee while conducting replenishment studies and preparing DSR has followed all requisite procedure including mapping of river and audits through Drone Surveys as required in



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Chapter 4 and Chapter 5 of the EMGSM Guidelines, 2020.

20. That the contents of para (15) & (16) of the grounds of the original application are not admitted in the manner it has been stated, in reply thereto it is stated that the DSR has been prepared and same fully complies with the requirements of 2020 Guidelines.

21. That the contents of para 17 & 18 of the original application need no reply.

22. That the last paragraph is prayer clause, hence the same are denied. In view of submissions made in aforesaid paragraphs, the present original application filed by applicant deserves to be dismissed with costs.

23. It is further humbly submitted that apart from above the answering respondent is duty bound to follow all directions issued by this Hon'ble Tribunal in the matter in its letter and spirit.



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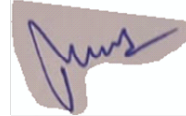
24. That the facts stated in the above reply are based on the information derived from official record as such they true and correct as per personal knowledge and belief of the deponent. No part of same is false and nothing material has been concealed therefrom.

  
Respondent



Through Counsel

No.2



**(MUKESH VERMA)**  
ADVOCATE FOR RESPONDENT NO.2  
Ch. No.50, Old Block  
Supreme Court of India  
New Delhi-110001  
(M) 9810108098  
E-mail: [mvermadv@gmail.com](mailto:mvermadv@gmail.com)

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH,  
NEW DELHI**

Original Application No. 1345 /2024

Anees Ali

...Applicant

Versus

State of Uttar Pradesh & Ors.

...Respondents

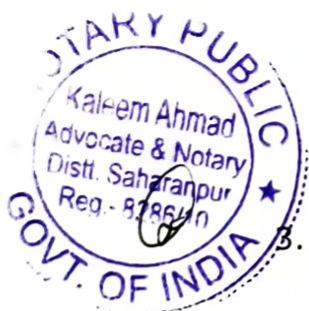


**AFFIDAVIT**

I, Manish Bansal aged 34 years S/O Ram Avtar Bansal, presently posted at District Magistrate Saharanpur Uttar Pradesh, do hereby solemnly affirm and state as under:-

1. That the deponent is posted in above capacity as such he is fully conversant with the facts of the case as such is competent to swear in this affidavit.
2. That I have read the accompanying reply to the Original Application No. 1345/2024 Anees Ali Vs State of U.P. & Ors. filed by applicant and understood the contents thereof the same are true and correct as per my personal knowledge and belief.
3. That the Annexures accompanying are true and correct copies of their respective originals.

Deponent



**VERIFICATION:**

I, the above named deponent do hereby verify that the contents of above affidavit are true and correct as per knowledge and belief, no part of it is false and nothing material has been concealed therefrom.

Verified at New Delhi this the \_\_\_ day of February, 2025.

Deponent

IDENTIFIED BY

**KALEEM AHMAD**  
Advocate  
Reg. No.-10533/01  
Ch.-63, Civil Court, SR  
Mob.-9359206239

Page 407

This affidavit is made before me today at my office...  
By Shri. Manish Bansal S/O. Ram Avtar Bansal  
who is identified by Shri. Kaleem Ahmad  
The contents of the affidavit have been explained to the deponent who admit to understand them.

Saharanpur  
U.P. INDIA  
24/2/2025  
Kaleem Ahmad  
Advocate & Notary



# **Enforcement & Monitoring Guidelines for Sand Mining**



**Ministry of Environment, Forest and Climate change**

**January, 2020**

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## 1.0 INTRODUCTION

The Ministry of Environment Forest & Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand Mining in the Country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring.

Section 23 C of MMDR, Act 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals. But in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

Use of latest remote surveillance and IT services helps in effective monitoring of the sand mining activity in-country and also assist the government in controlling the illegal mining activity in the country. Thus, there is a need for an effective policy for monitoring of sand mining in the Country which can be enforced on the ground. These guidelines focus on the effective monitoring of the sand mining since from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public. Further, the effective monitoring and enforcement require efforts from not only Government agencies but also by consumers and the general public.

It is the responsibility of every citizen of India to protect the environment and effective monitoring can only be possible when all the stakeholders viz. Central Government, State Government, Leaseholders/Mine Owners, Distributors, Dealers, Transporters and Consumers (bulk & retail) will contribute towards sustainable mining, and comply with all the statutory provisions. It is felt necessary to identify the minimum requirements across all geographical region to have a uniform protocol for monitoring and enforcement of regulatory provision prescribed for sustainable sand and gravel mining.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining.

The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provision of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020 "shall prevail.

## 2.0 NEED FOR POLICY GUIDELINES

The Ministry of Environment, Forest & Climate Change (MoEF&CC) published Environmental Impact Assessment Notification 1994 which is only applicable for the Major Minerals more than 5 ha. In order to cover the minor minerals also into the preview of EIA, the MoEF&CC issued EIA Notification 2006 for Major & Minor Mineral more than 5 Ha. The Hon'ble Supreme Court in its Judgment dated the 27th February 2012 in I.A. No.12- 13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc. made prior environment clearance mandatory for mining of minor minerals irrespective of the area of mining lease. In order to comply with the judgment of Hon'ble Supreme Court, the Ministry issued S.O.141 (E) dated 15.01.2016. Further, MoEF&CC published Sustainable Sand Mining Management Guidelines 2016 for scientific and sustainable sand mining in the Country. The recommendations for the management of sustainable sand extraction are the key objective of the Guidelines. Special emphasis is given on monitoring of the mined out material, which is key to the success of the environmental management plan. Use of IT and IT-enabled services for effective monitoring of the quantity of mined out material and transportation along with process re-engineering has been made a part of the Guidelines. Guidelines support the fundamental concept, promote environmental protection, limit negative physiological, hydrogeological and social impacts underpinning sustainable economic growth.

The Hon'ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. Inter-alia observed that ***"There can be no two views that an effective institutional monitoring mechanism is required not only at the stage when Environmental Clearance is granted but also at subsequent stages". "The guidelines focus on the preparation of District Survey Report and the Management Plan" ... We are of the view that all the safeguards which are suggested***

***in sustainable sand mining guidelines as well as notification dated 15.01.2016 ought to be scrupulously followed.” ...It is a known fact that in spite of the above-suggested guidelines being in existence, on the ground level, illegal mining is still going on. The existing mechanism has not been successful and effective in remedying the situation.” ...” Since there is an utter failure in the current monitoring mechanism followed by the State Boards, SEIAAs and DEIAAs, it is required to be revised for effective monitoring of sand and gravel mining and a dedicated monitoring mechanism be set up.”***

The Hon’ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. directed that ***MoEF&CC has issued directions from time to time under Section 3 and 5 of the Environment (Protection) Act, 1986. The MoEF&CC needs to revise its directions keeping in mind the following:***

- *Mining Surveillance System discussed in para 23 above be finalized in consultation with ISRO Hyderabad.*
- *Safeguards suggested in Sustainable Sand Mining Guidelines published by the MoEF&CC in the year 2016.*
- *Suggestions in the High Power Committee Report.*
- *The requirement of demarcation of boundaries being published in respect of different leases in the public domain.*
- *Need to issue SOP laying down mechanism to evaluate loss to the ecology and to recover the cost of restoration of such damage from the legal or illegal miners. Such evaluation must include the cost of mining material as well as the cost of ecological restoration and the net present value of future ecosystem services forgone.*
- *Need to set up a dedicated institutional mechanism for effective monitoring of sand and gravel mining which may also take care of mining done without any Environmental Clearance as well as mining done in violation of Environmental Clearance conditions.*

- *The Mining Department may make a provision for keeping apart at least 25% of the value of mined material for the restoration of the area affected by the mining and also for compensating the inhabitants affected by the mining.*
- *One of the conditions of every lease of mine or minerals would be that there will be independent environmental audit at least once in a year by reputed third party entity and report of such audit be placed in the public domain.*
- *In the course of such an environmental audit, a three-member committee of the local inhabitants will also be associated. Composition of three members committee may preferably include ex-servicemen, a former teacher and former civil servant. The Committee will be nominated by the District Magistrate.*

**The Hon'ble NGT in its order dated 05.09.2018 in O.A. 44/2016 in the matter of Mushtakeem Vs. MoEF & CC & Ors. Inter-alia observed the following:**

*"Para 20. In Original Application No. 481/2016, the allegation is that there is the connivance of the District Administration with the miners and mining is going in violation of conditions of Environmental Clearance. According to the applicant, an effective mechanism is required to be evolved so that illegal mining does not place."*

*"Para 22. We proceed to consider the main question proposed for the consideration stated earlier hereinabove as to **how to ensure the protection of the environment by checking illegal mining.**"*

*"Para 23. We have dealt with the identical issue relating to the illegal sand mining in the border districts in the State of West Bengal and Odisha in the order dated 04<sup>th</sup> September 2018 in Sudarsan Das Vs. State of West Bengal & Ors., Original Application No. 173 of 2018. We have directed the MoEF&CC to revise the guidelines on the subject for an effective mechanism for sand mining, relevant portions of which are reproduced below: -..."*

**The Hon'ble NGT in its order dated 10.09.2018 in O.A. 304/2015 in the matter of Jai Singh & Anr.Vs. Union of India Ors. inter-alia observed the following:**

*"Para 6. After disposal of the above matters, a disturbing event widely reported in media which took place on 07th September 2018 has been brought to our notice. **A Deputy Ranger who tried to stop illegal mining was killed by mining mafia at Morena in the State of M.P.***

*"Para 7. The above disturbing event may also be kept in mind by the MoEF, while considering the issuance of revised guidelines in light of the judgment dated 05th September 2018 (Supra)."*

**The Hon'ble NGT in its order dated 05.04.2019 in O.A. 360/2015 in the matter of National Green Tribunal Bar Association & Anr.Vs. Union of India & Ors. inter-alia observed the following:**

*"The 2016 Guidelines need revision in the light of the report of High Powered Committee in September 2016, failure of Monitoring mechanism followed by State Boards, SEIAs, DEIAs and MSS system developed by Ministry of Mines & IBM with the assistance of BISAG and MAITY and other observations quoted in paras 12 to 15 above.*

*50. As noted earlier in paras 17, 23, 27, 31 and 35, States of West Bengal, Odisha, Gujarat, Karnataka, Maharashtra, Punjab, Haryana and Uttar*

*Pradesh are required to follow SSMG, 2016 as may be revised by MoEF&CC and even other States where illegal sand mining is taking place.*

***The States may review the monitoring mechanism in terms of several directions of the Tribunal and guidelines of MoEF&CC.***

*The international conservation concern regarding natural wealth is a universal demand. Article 51(a) subsection (G) of the constitution requires every citizen of India to protect and improve the natural environment including forest, lakes, rivers, wildlife and to have compassion for the living creature.*

*The Hon'ble Supreme Court in the case of M.C. Mehta Vs. Kamal Nath (1997) 1 SCC 388 held that under Article of Indian Constitution incorporates the "Public Trust Doctrine" and as such extends to the protection of all-natural resources which includes the protection of flora and fauna.*

*The Hon'ble Supreme Court in the case of Vellore Citizens Welfare Forum Vs. Union of India & Ors (1996) held that the precautionary principle is part of the Environmental Law in India. It further stated that onus of proof is on the actor of the developer/industrialize to show that its actions are environmentally benign."*

### 3.0 OBJECTIVE OF GUIDLINES

- Identification and Quantification of Mineral Resource and its optimal utilization.
- To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining.

#### 4.0 REQUIREMENTS FOR MONITORING & ENFORCEMENT

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the source of sand in India are through

- a) River (riverbed and flood plain),
- b) Lakes and reservoirs,
- c) Agricultural fields,
- d) Coastal / marine sand,
- e) Palaeo-channels and
- f) Manufactured Sand (M-Sand).

The SSMMG-2016 highlights the identification of the sand mining sources, replenishment of the River Bed Material (Sand, Boulder, Gravel, Cobble etc.), preparation of Districts Survey Report, and Standard Environmental Conditions suitable for sand mining projects.

The necessary requirements to comply with the direction of Hon'ble NGT and to facilitate effective monitoring and enforcement of regulatory provision for sand mining in the country are as follows:

- i) Identification of sand mining sources, its quantification and feasibility for mining considering various environmental (proximity of protected area, wetlands, creeks, forest etc.) and other factors such as important structures, places of archaeological importance, habitation, prohibited area etc.
- ii) The mining lease auctioned by State government as per their Minor Mineral Concession Rules are granted of Letter of Intent (LoI), but it has been observed that many of the sites are not suitable w.r.t environmental aspects. In most of the cases, the unplanned grant of mining lease leads to formation of cluster and/or contiguous cluster

of small mining leases which sometimes is difficult to regulate and monitor. In order to address such issues, more emphasis is required on the preparation of District Survey Report and its format for reporting,

- iii) Mining Plan is an important document to assist the mine owner to operate the mine in a scientific manner. States have their own format for preparation of mining plan and it is observed that recording of the initial level of mining lease at shorter interval say 25m X 25 m grid interval is not present.
- iv) There is no practice for regular replenishment study to ascertain the rate of depositing, plan and section needs to be prepared based on the restrictions provided in letter of intent and provisions of Sustainable Sand Mining Management Guidelines 2016.
- v) Environmental Clearance is a process wherein the regulatory authorities after considering the potential environment impact of mining clearance is granted with a set of specific & standard conditions to carry out mining operations, but often it is observed that letter of intent is granted for a location which has less potential for mining and not feasible for environment-friendly mining. This leads to an unnecessary financial burden on the mine owners and litigations. Thus, LoI should be preferably granted for those locations which have the least possibility of an impact on the environment and nearby habitation.
- vi) It is the responsibility of the mine owner to obtain all the statutory clearance and comply with the conditions stipulated in the clearance letter. Mining should be carried out within the mining lease area as per

approved mining plan or mining plan concurred by other regulatory authorities.

- vii) Mining operation also involves transportation of mineral from the mining area to end-user and its necessary that movement of the mineral needs to be monitored.

The State Government already have power under section 23c of MMDR, Act 1957 to make rules for preventing illegal mining, transportation and storage of minerals. However, there are instances of illegal mining which shows that there is a need for strengthening the system of mineral dispatch and its monitoring. This document provides good practices already under implementation by various states for regulating the mineral sale, dispatch, storage, transportation and use.

- viii) The river reaches with sand provide the resource and thus it is necessary to ascertain the rate of replenishment of the mineral. Regular replenishment study needs to be carried out to keep a balance between deposition and extraction. This document provides the procedure to be followed for conducting replenishment study.
- ix) Even after all the regulatory procedure and policy being in place, there are instances where illegal mining is taking place. There is a need for regular surveillance of the sand mining reaches. The monitoring agencies can monitor the sites remotely by using Unmanned Artificial Vehicles (UAVs)/Drone which is now a viable option. The drone can also be used for reserves estimation, quantity estimation, land use monitoring. This document highlights possible use of IT/Satellite/Drone technology for effective monitoring of sand mining.

## **4.1 Identification of possible sand mining sources and preparation of District Survey Report (DSR)**

### **4.1.1 Preparation of District Survey Report.**

“Sustainable Sand Mining Guidelines, 2016” issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/Lol. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.

**The Hon’ble NGT in its Judgment dated 08.12.2017 in the matter of Anjani Kumar vs State of Uttar Pradesh & Ors. inter-alia mentioned the following regarding sand mining in the Uttar Pradesh.**

*“It states that the main object of preparation of District Survey Report is to ensure identification of areas of aggradation/deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining area. Thus, the environmental protection requires a strictly regulated mining in terms of area, quantity as well as most importantly replenishment thereof.”*

*"The data collection and declared for preparation of DSR shall take precedence over other data and would form the foundation for providing mining lease in terms of Appendix- x to the Notification dated 15th January 2016 must be prepared by the statutory authority stated therein i.e. DEIAA prior to awarding of permits for carrying on mining activity in any part of the State of UP."*

**The Hon'ble High Court of Jharkhand at Ranchi in its orders dated the 11<sup>th</sup> April 2018 and 19th June 2018 in W.P. (PIL) No. 1806 of 2015, in the matter of Court on its Own Motion Versus the State of Jharkhand & Others with W.P. (PIL) No. 290 of 2013, in the matter of Hemant Kumar Shilkarwar Versus the State of Jharkhand & Others, has inter-alia directed** the preparation of District Survey Report for minor minerals other than Sand and Bajri or delegation of the powers for preparation of format of District Survey Report of minor minerals other than sand and Bajri to the State Government and/or District Environment Impact Assessment Authority and District Expert Appraisal Committee. To comply with the direction of Hon'ble High Court the Ministry has issued S.O. 3611(E) dated 25.07.2018, wherein, the procedure of preparation of DSR is mentioned. But it is felt that still there is other information that needs to be reported in DSR to make it a comprehensive DSR.

Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depends on the quality of District Survey Report.

Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters, formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.

- a) District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.
- b) The first step is to develop the inventory of the River Bed Material and Other sand sources in the District. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.

The revenue department of Kerala already conducted river mapping and sand auditing of around 20 rivers of Kerala which is a good example wherein the profile of rivers was created at regular intervals and aggradation/deposition was identified along with water level. In the same study, benchmarks were also created at a prominent location at regular interval for future surveying. Such study helps the mining departments to identify the source of sand.

Thus, it is proposed that for preparation of district survey report, the auditing of rivers needs to be carried out. There is already a provision under MMDR Act 2015 for National Mineral Exploration Trust (MET) wherein a 2% of royalty amount to be deposited in the trust. This fund is used for mineral exploration in the country. The Sand Auditing is also a sort of identification of mineral and State Government may request Central Govt. for proving funds for river auditing. The Central Govt. (Ministry of Mines) may also explore the possibilities for providing the funds for river auditing. The other option is that State Govt. may conduct such studies by its own fund and the same may be recovered from the leaseholders to whom the mining lease will be allocated.

- c) District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.
- d) Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khtedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial ), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khtedari lands [ Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in **Annexure-I**.
- e) Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition are identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central  $\frac{3}{4}$ <sup>th</sup> part of the river, width needs to be identified on a map. Out of the  $\frac{3}{4}$ <sup>th</sup> part area, where there is a deposition/aggradation of the material needs to be identified. The remaining  $\frac{1}{4}$ <sup>th</sup> area needs to be kept as no mining zone for the

protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

**Note:** As physical survey with conventional method is time-consuming, use of unmanned aerial vehicle (UAV) may be explored to carry out the survey and finalizing the original ground level and for developing a 3D model of the area.

- f) The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.
- g) Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.
- h) Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.
- i) It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.
- j) The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller

mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.

- k) Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.
- l) The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.
- m) The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.
- n) The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so

selected should be verified by the State Government for its carrying capacity.

- o) Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as **Annexure-II**. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in **Annexure-III**. The details of the transportation need to be provided as in **Annexure IV**.
  
- p) **Public consultation**-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per **Annexure-V**. The details regarding cluster and contiguous cluster needs to be provided in **Annexure-VI**. The details of the transportation need to be provided in **Annexure-VII**.

#### **4.2 Grant of Letter of Intent to those mining leases which are falling in potential mining zone**

The State Government shall issue letter of intent as per procedure laid down in their Minor Mineral Concession Rules with due consideration of final district survey report. The State Government shall ensure that all the letter of intent shall have complete details of the mining lease including geo-coordinate of the corner points, the involvement of forest land, distance from the forest land, distance from the protected area, distance from other sites of archaeological importance, details of the cluster situation etc. The demarcation of the boundaries of Lol/Lease area shall be placed in public domain along with Lol/lease deed details.

The LOI should not be granted for mining area falling on both riverbed and outside riverbed. Therefore, in the same lease, both types of area should not be included.

The authority responsible for grant of lease for sand mining shall ensure that annual audit of the sand mining process, production and compliance of the imposed conditions by regulatory authority (Environmental clearance or mine plan) shall be one of the essential condition of the lease agreement. The annual audit report shall be submitted to the district administration, which shall be put in public domain through the district website. Any deviation observed shall be appropriately and in accordance with applicable law shall be dealt by the concerned authority and corrective measures shall also be taken to restoration of ecological/environmental damage, if observed.

### 4.3 Mining Plan

The preparation of Mining Plan is also very important. The mining plan should include the original ground level recorded at an interval not more than 10M x 10M along & across the length of the river. In addition to this-levels, outside the mining lease and bank of the river up to meters needs to be recorded. In the mining plan, there should be 3 plates for each year production & development planning (pre-monsoon, monsoon and post-monsoon). The time period of monsoon should be defined in the DSR. At the time of review of the mining plan, the details of the replenishment study conducted for all the years needs to be included in the mining plan. The Mining Plan should include the certificate from PCCF on forest land, distance from the protected area, past production details for mining leases seeking expansion.

#### **Following considerations shall be kept in mind for sand/gravel mining while approving mining plan**

- a) Parts of the river reach that experience deposition or aggradation shall be identified. The Leaseholder/ Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.
- b) The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.
- c) Sand and gravel may be extracted across the entire active channel during the dry season.

- d) Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- e) Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- f) Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- g) Segments of the braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.
- h) Sand and gravel shall not be extracted up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- i) The sediment sampling should include the bed material and bed material load before, during and after the extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross-section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume. Calculate the extraction volume based on the sediment rating curve and high flow period after determining the allowable mining depth.

- j) Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two-thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.
- k) The flood discharge capacity of the river could be maintained in areas where there is a significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross-section history. Alternatively, off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.
- l) The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for groundwater recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.
- m) Mining depth should be restricted to 3 meters and distance from the bank should be  $\frac{1}{4}$ <sup>th</sup> or river width and should not be less than 7.5 meters.
- n) The borrow area should preferably be located on the riverside of the proposed embankment because they get silted in the course of time. For low embankment, less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In the case of the higher embankment, the distance should not be less than 50 m. In order to obviate the development of flow parallels to the embankment, crossbars of width eight times the depth of borrow pits spaced 50 to 60 meter center-to-center should be left in the borrow pits.

- o) Demarcation of mining area with pillars and geo-referencing should be done prior to the start of mining.
- p) A buffer distance /un-mined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.
- q) A buffer distance /unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.
- r) River bed sand mining shall be restricted within the central 3/4th width of the river/rivulet or 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be and decided by regulatory authority while granting environmental clearance in consultation with irrigation department. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation or relaxation in this regard shall be adequately supported by the scientific report.
- s) Mining Plan for the mining leases(non-government) on agricultural fields/Patta land shall only be approved if there is a possibility of replenishment of the mineral or when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market.

The minerals reserve for river bed area is calculated on the basis of maximum depth of 3 meters and margins, width and other dimensions as mentioned in para (s) above. The area multiplied by depth gives the volume and volume multiplied with bulk density gives the quantity in Metric Ton. In case of river bed, mineable material per hectare area available for actual mining shall not exceed the maximum quantity of 60,000 MT per annum.

#### **4.4 Obtaining Environmental & Other Statutory Clearance**

The LOI Holder/Lease Holder to obtain Environmental and Other Statutory Clearances from the concerned authorities as per provision of applicable laws.

#### **4.5 Baseline data before Commencement of Mining Operations**

Baseline data in respect of the initial level of mining lease in the interval not more than 25 X 25 meters shall be collected for record by leaseholder. The level of river bed upstream and downstream up to 100 meters also needs to be recorded. The area outside the mining lease/river bank (if lease boundary coincides with mining lease) up to 100 meters from both the banks/mining lease needs to surveyed for initial level.

#### **4.6 Additional measures where project proponent is selected by a bidding**

In those states where sand plots are auctioned to the highest bidder, the following is suggested:

It has been observed that bidders try to form a cartel and bids are received for certain plots where legal mining is done, and bids for certain other plots don't elicit any response. Sand from these un-

auctioned plots is then excavated using the same machinery deployed for the excavation of adjacent plot which might have been auctioned off. It is not easily possible for the field machinery to prevent such illegal activities. This may be prevented by having plot of larger size. plots are large in size as possible are identified for auction. Care may be taken to ensure that no continuous stretch of plot in the river bed is divided for auction. A continuous stretch of plot shall be preferred for auction, and the attempt may not be made to auction it off in pieces.

## **5.0 REPLENISHMENT STUDY**

The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessing sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverine regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on in-stream biota and riparian habitats. It is assumed that the riparian habitat disturbance is minimum if the replenishment is equal to excavation for a given stretch. Therefore, to minimize the adverse impact arising out of sand mining in a given river stretch, it is imperative to have a study of replenishment of material during the defined period.

### **5.1 Generic Structure of Replenishment Study**

Initially replenishment study requires four surveys. The first survey needs to be carried out in the month of April for recording the level of mining lease before the monsoon. The second survey is at the time of closing of mines for monsoon season. This survey will provide the quantity of the material excavated before the offset of monsoon. The third survey needs to be carried out after the monsoon to know the quantum of material deposited/replenished in the mining lease. The fourth survey at the end of March to know the quantity of material excavated during the financial year. For the subsequent years, there will be a requirement of only three surveys. The results of year-wise surveys help the state government to establish the replenishment rate of the river. Based on the replenishment rate future auction may be planned.

The replenishment period may vary on nature of the channel and season of deposition arising due to variation in the flow. Such period and season may vary on the geographical and precipitation characteristic of the region and requires to be defined by the local agencies preferable with the help of the Central Water Commission and Indian Meteorological Department. The excavation will, therefore, be limited to estimated replenishment estimated with consideration of other regulatory provisions.

## **5.2 Methodology for Replenishment Study**

The replenishment estimation is based on a theoretical empirical formula with the estimation of bedload transport comprising of analytical models to calculate the replenishment estimation. The iso-pluvial maps of IMD can be used for estimation of rainfall. Catchment yield is computed using different standard empirical formulas relevant to the geographical and channel attributes. eg. Strange's Monsoon runoff curves for runoff coefficient). Peak flood discharge for the study area can be calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation or similar can be made. A simulation model is used with basic data generated from the field in the pre-study and post-study period (preferably pre-monsoon and post-monsoon) to estimate the volume of replenished material. The particle size distribution and bulk density of the deposited material are required to be assessed from a NABL recognized laboratory. Considering the bulk density and the volume, the estimation of replenishment in weight will be calculated after considering safeguards and stability of the slopes and riverine regime. Some of the common methods used for field data acquisition for replenishment study

**5.2.1. Physical survey of the field by the conventional method**

- i. The conventional survey technical using DGPS and other survey tools are used to define the topography, contours and offsets of the lease area. The survey should clearly depict the important attributes of the stretch of the river and its nearby important civil and other feature of importance. Such information will provide the eligible spatial area for mining. The contour and the elevation benchmarks will provide the baseline data for assessing the pre and post-study period scenario.
- ii. Physical benchmarks are to be fixed at appropriate intervals (preferable 1 in 30 m) and the Reduced Level (RL) shall be validated from a nearby standard RL. These RL should be engraved on a steel plate (Bench Plate) and shall be fixed and placed at locations which are free from any damages and are available in pre and post-study period. The bench plates shall be available for use during the mining period as reference for all mining activity. Reference pillar may also be used in place of Bench Plates with visible and readable demarcation on the ground as common reference points to control the topographic survey and mining activity.
- iii. Baseline data on elevation status for a grid of 10 m x 10 m is preferred to have accuracy in the assessment. It is expected that two consecutive cross-sections in longitudinal and lateral direction should not be more than 10-meter distance apart, however, the regulatory authority may fix these intervals depending on the geographical and site-specific conditions, only and after providing the scientific reason for such deviation.
- iv. The changes observed in the elevation in pre and post scenario at each node should be depicted in graphical forms with an appropriate scale to estimate the area of deposition and erosion. These graphical

presentations should depict the active channel regime and the flow bed elevation with other important features required to be considered for estimation of the mining area. The area of deposition and erosion shall be calculated for each cross-section after giving due regard to the stability and safety of active channel banks, and other features of importance. The elevation level shall be in reference to the nearest bench-plates established for the purpose.

- v The levels (MSL & RL) of the corner point of each grid should be identifiable and safety barriers (Non-Mining) demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- vi A clear identification is required to be highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) be subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- vii The database should be structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- viii Net area shall be derived after the summation of the area of deposition minus area of erosion for each cross-section. The volume will be estimated by multiplying the distance between two cross-sections with the average of net area of these two consecutive cross-sections.
- ix One sample per 900 square meters (30 m x 30 m) shall be preferred sample density for assessment of bulk density for estimation of deposition rate. Care should be taken that the sample for assessment

of bulk density is taken from the deposition zone and not from erosion. However, depending on the site condition, river morphology and geographical condition, sample density may be adjusted. Reason for such deviation shall be appropriately highlighted in the report with supporting scientific data.

### 5.2.2. Use of UAV/Drone and other image data processing techniques

With the development in image data processing tools and its accuracy acceptability, Drone/UAV fitted with the advance camera are used for survey purposes. Such technology has promising potential in the survey of sand mining zones due to its fast and reliable output deliveries. The survey is conducted using a set of instruments and compatible software to utilized the properly referenced data for depicting the topography of the study area. Instrument calibration and software compatibility and its validation with the ground data are an essential requirement for using this technique.

The details of the instruments their limitation and software used shall be demonstrated in the form of the accuracy assessment report, through a chapter in the replenishment study report. Other details to be incorporated in the report with regard to the study using such imaginary techniques shall highlight the followings:

- a) **Flight Planning:** - The lease co-ordinates and the flight plan devised to capture the front and side overlap percentages for in each flight in reference to global coordinates (Kml or SHP file) system. The software used for the purpose and its details along with limitations with basic analytical assumptions.
- b) **Block file generation:** - This operation concerns the selection of the sensor model and the definition of block properties, the addition of

imagery to the block file, marking of GCPs, generation of tie points and refining of the model.

- c) **Interior orientation:** - The interior orientation of the stereo pair rational polynomial coefficients (RPC) used, which should be bundled with the scenes. RPCs are coefficient, which is used by photogrammetric software to represent the ground to-image viewing geometry.
- d) **Exterior orientation:** For exterior orientation, ground control points shall be used, which are collected from the DGPS survey.
- e) **Aero Triangulation:** - A critical phase in photogrammetric mapping is to rectify the satellite imagery at an appropriate tract on the surface of the earth. This is accomplished by collecting horizontal and vertical data [GCP's] to ascertain the spatial location of a number of features that are visible and measurable on the aerial images – this process is often called control bridging, which refers to passing horizontal and vertical information from one aerial image to the next.
- f) **Ortho Generation:** - After running the above steps; the software shall automatically generate orthorectified imagery.
- g) **DTM extraction:** For extraction of DTM, Generated point cloud data classified manually to extract bare earth.

### 5.2.3 Accuracy Assessment of Aerial Data:

To check the accuracy of DTM generated by Aerial data, few points are selected and compared with on-site by using DGPS instrument for the ground-truthing purpose. It is preferred to do ground-truthing at minimum 5 locations spread evenly across the lease area. The readings from the DGPS instrument are then compared with the Drone data for accuracy assessment

purpose. A comparative chart will be prepared in comparison of Data related to ground-truthing (by DGPS) and from Drone. Such accuracy assessment report shall a chapter of the replenishment study.

#### **5.2.4 Replenishment study shall have the details of**

- List of instruments
- List of software
- Establishment of Benchmark by putting No. of pillar points and various Ground Control Points (GCP) at the site.
- Ground Control Points (GCP) Collection: - Various GCPs were observed by using DGPS for Permanent Benchmarks and for control points.
- The summary of the elevation data from each section's profile based on the post-monsoon the survey should have mentioned in the table form.
- The detail of post-monsoon survey data in the tabular form shall be
- The detailed comparison of both pre-monsoon and post-monsoon elevation data shall be attached
- Cross-sectional depiction of deposition and erosion for each section in pre and post-deposition season shall be given supported by relevant field study data and plan.

## **6.0 ENFORCEMENT**

### **6.1 Mining Operation:**

The mining operations should be strictly carried out in accordance with the approved mining plan and after complying with all the conditions stipulated in Environmental & Other Statutory Clearance. Mine owner shall follow the operational procedure (for sale, dispatch, storage, reserve reconciliation and transportation) as may be defined by the concerned state government in its monitoring guidelines. Mine owner should comply with the recommendation and suggestion made by the High Power Committee as applicable.

### **6.2 Post Environment Cleanace Monitoring:**

It's the responsibility of the EC Holder to comply with the Environmental Clearance conditions and upload the six-monthly EC compliance report on the website of the Ministry. For the category, 'A' mines (> 100 Ha individual & cluster) Regional Office of the MoEF&CC are entrusted to carry out EC Monitoring and for the Category 'B' Mines by SEIAA. The monitoring shall be carried out as per the procedure/schedule suggested by MoEF&CC from time to time. MOEF&CC vide its notification S.O. 637(E) dated 28.02.2014 has delegated the power to State/Union Territory Environmental Impact Assessment Authority to issue show cause notice to project proponent in case of violation of Conditions of Environmental Clearance issued by the said authority and to issue direction for keeping the said EC in abeyance or withdrawing it. Thus, for category 'B' (0 to 100 Ha) projects SEIAAs are responsible for EC monitoring.

### **6.3 Environment Audit:**

The Hon'ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. Inter-alia directed

*that "One of the conditions of every lease of mine or minerals would be that there will be independent environmental audit at least once in a year by reputed third party entity and report of such audit be placed in the public domain. In the course of such an environmental audit, a three-member committee of the local inhabitants will also be associated. Composition of three member's committee may preferably include ex-servicemen, a former teacher and former civil servant. The Committee will be nominated by the District Magistrate.*

The gazette notification on environmental audit has been issued by the Ministry of Environment and Forests on March 13, 1992 (amended vide notification GSR 386 (E) dated April 22, 1993). This notification applies to every person carrying on an industry, operation or process requiring consent to operate under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981), or both, or authorization under the Hazardous Waste (Management and Handling) Rules, 1989, issued under the Environment (Protection) Act, 1986 (29 of 1986). The notification requires that an Environmental Statement for the financial year ending the 31st March be submitted to the concerned State Pollution Control Board, on or before the 30th September of the same year.

It is suggested that NABET Accredited consultant may be engaged for Environment Audit and during the course of the audit, a three-member committee nominated by District Magistrate shall be associated.

## 6.4 Monitoring of Sale & Purchase of Sand:

**6.4.1** In order to curb illegal mining it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. The Ministry of Mines issued **Sand Mining Framework 2018** wherein it has proposed two mechanisms for the online sale of sand depending on whether there is a free market for sand in the State or the prices are regulated by the Government.

### **Para 1.2.12.2 Under the market model**

*In the case of the market model, all the lessees/ certified dealers in the State should register themselves on the online portal/ mobile app. For registering, the lessee/ certified dealer will have to enter the details of its concession/ stockyard, location, the quantity of sand expected on a weekly basis, as per the approved mining plan. Once registered, the online portal/ app will display the name of the reach/ stockyard and sand could be booked by the consumer from those leases/ stockyards and prices up to the delivery level. Further, the lessee/ certified dealer needs to regularly update the sand available in the reach/ stockyard, and they can decide the price at which they want to sell their sand. Anyone who wishes to purchase sand in the State will have the following options for buying:*

- 1. Mobile app*
- 2. Online portal*
- 3. Customer care/ telephone call*
- 4. Licensed traders*

*The consumer needs to register on the portal and log in using his/her credentials (Aadhar card based only). After logging in, the portal will display the entire list of reaches/ stockyards along with the quantity of sand available in those reaches/ stockyards and the quality and price of*

*sand. The consumer can filter/ sort the reaches/ stockyards based on such parameters as location, quality and price, and book from the lease/ stockyard he/she wishes to. The consumer should also have the option to purchase the sand by ordering at customer care. Also, stockyards should be made around all the major consumption hubs in the State based on their estimated demand.*

**Para 1.2.12.3    Controlled market prices**

*In case the prices are regulated by the State Government, the only difference from the previous model is that the price of sand at the river reach/ stockyard shall be uniform across the State/ district based on the quality and transportation lead. A consumer after logging in may choose the reach/ stockyard from which he/she wishes to purchase the sand. The payment for booking the sand in both the cases should be made on the portal/ app so that proper accounting of the sale of sand can be maintained by the Government. Also, stockyards should be made around all the major consumption hubs in the State based on their estimated demand.*

It is suggested that the State Government should develop an online portal for sale and purchase of Sand & RBM. In addition to this State Government shall decide on the model viz. *Under market model or Controlled market prices or both* to be adopted for their respective States. The State Government shall accordingly modify their Minor Mineral Concession Rules within 6 months of publication of these guidelines. It is suggested that the controlled price model is more effective in controlling illegal sand mining. Because if the State Government is the only agency to provide the sand in the State, then price and supply of sand can be controlled more effectively. There will be no confusion in the consumers about legality of the purchase as the only source of sand provider is the State Government through its network of registered stockiest, retailers and transporters. The consumers

can fill the online request, pay the amount, select the transporter and give its feedback after the receipt of the sand. The transportation can also be controlled as the tippers used for transportation is registered tippers with GPS facility, the transportation route is well defined for easy monitoring, control over overloading of tippers, control over spillage of mineral etc. The State Govt. shall also make provision for penalizing the persons/agency buying the sand and RBM from the illegal sources.

**6.4.2** The Ministry of Mines in its Sand Mining Framework also mentioned the following different level of monitoring:

**Para 1.2.13.1                      Level 1- Reach/ Stockyard level monitoring**

*For monitoring of the active reaches:*

- a. *Quantity of sand to be extracted from the reach should be based on the quantity of sand assessed in the reach by the Joint Inspection Team.*
- b. *The lease boundary should be demarcated with geo-coordinates or geo-fenced to ensure that sand extraction is going on only within the permitted area.*
- c. *De-casting from river beds should be monitored on a regular basis to keep a track of excavated quantity.*
- d. *After every two years, a mandatory audit of the quantity extracted and quantity permitted along with the replenishment rate.*
- e. *Mandatory e-pass/ e-permit should be made available at reach level for transportation of any sand by any GPS enabled vehicle with the provision of entering the vehicle number of the sand carrying vehicle and expected delivery address and customer name/ mobile number. Also, provision should be made available for stockyards/ stockiest of sand. In the case of*

*nomination based (controlled pricing) business model, the margin of private stockist should be capped over a fixed percentage of notified prices.*

- f. At the stockyard, the stock supervisor should verify the authenticity of online payment receipt before issuing the transit pass. The loading of sand should be monitored electronically and all transporting vehicles should pass through an electronically monitored weighbridge. g. Real-time data capture for transportation*

**Para 1.2.13.2                      Level 2 - Transportation monitoring**

*To make transportation monitoring effective and useful, all the sand carrying vehicles (tractors/ trucks) should be registered with the department and GPS equipment should be installed in all the sand carrying vehicles. Weighbridges with CCTV should be installed at all the stockyards, active reaches to ascertain the exact quantity of sand being transported in the vehicle. Check posts with CCTV cameras should be established near all major consumption centres to check if all the transporting vehicles are carrying a valid transport permit. The transport permit generated should contain the security features mentioned under section 5.11 so that one permit cannot be re-used by generating photocopies of the permit.*

**Para 1.2.13.3                      Level 3 - End consumer monitoring/ bulk consumer**

*For end consumer monitoring, a customer grievance redressal center should be established to enquire about the grievances faced by the sand consumers. The telephone number of the call center should be advertised so that it reaches the general public through which anyone in the State can register his/her complain related to the sand, be it in terms of price or any other grievance. Additionally, profiles of customers should be analyzed such as the delivery of sand at the same address, usage pattern and its comparison with the estimated usage, as mentioned in purpose, etc. Further, surprise checking*

*should be conducted by the district level committee staff as per instructions of the monitoring agency.*

**Para 1.2.13.4                      Level 4 - Indirect monitoring**

*Indirect monitoring can be done by determining sand consumption through the quantum of cement sales in the State, as the sale of cement is quite organized and data is easily available at the State level and district levels for the same. From district-wise cement consumption, the further trend of sand consumption can be derived. Any anomalies in the sand consumption/demand can be analyzed further.*

**Note:** *The above monitoring mechanism is just a suggestion and the States may visit Andhra Pradesh and Telangana to study the monitoring mechanism in greater detail.*

It is suggested that State Government may consult with concern department of State of Telangana and Tamil Nadu to have better understanding on their experience and knowledge in adopting best sand mining enforcement provisions and monitoring practices and frame their own regulatory regime and monitoring framework. The framework of monitoring should essential include online sale & purchase of River Bed Material/ Auction of leases, Sand from rivers and other sources, online monitoring of excavation, storage and transportation of mineral for control of illegal mining.

The respective State Governments shall develop the online Sale & Purchase System after defining the model viz. Under market model or Controlled market prices model. The level of monitoring needs to be defined and guidelines need to be finalized by the respective State Governments as per their requirement with due consideration of suggestive guideline in this document. These all measure will help in curbing illegal mining.

## **7.0 Recommendations of High Power Committee:**

A high power committee (HPC) was constituted by Hon'ble National Green Tribunal to assess the status of illegal mining the stretch of River Yamuna, under the chairmanship of Secretary, Ministry of Environment Forest & Climate Change. The committee after exhaustive field survey and interaction with stakeholders and having surprise visits submitted a comprehensive report on river sand mining along with certain recommendations on enforcement requirements and monitoring essentials. The same is provided in the following section for consideration of monitoring / regulatory authority to adopt applicable provisions in their monitoring framework and also to ensure that the infrastructural requirements recommended by the HPC are put in use at all locations including the lease area.

### **7.1 Recommendations of High Power Committee (HPC)**

The following recommendation of the High Power Committee shall be considered while framing the monitoring mechanism by the State Government.

- i.* Project Proponent must ensure that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible.:
  - (a) Printed on Indian Bank Association (IBA) approved
  - (b) Magnetic Ink Character Recognition Code (MICR) paper;
  - (c) Unique Barcode;
  - (d) Unique Quick Response Code (QR);
  - (e) Fugitive Ink Background;
  - (f) Invisible Ink Mark;
  - (g) Void Pantograph;
  - (h) Watermark.

- ii. Project Proponent must ensure that CCTV camera, Personal Computer (PC) or laptop, Internet Connection, Power Back up, access control of mine lease site; and arrangement for weight or approximation of weight of mined out mineral on basis of volume of the trailer of vehicle used at mine lease site are available.
- iii. The PP has to enter the destination, distance between plot and destination, vehicle number etc in the system. After scanning, unique bar code number, invoice date time and validity date-time are generated by the software which gets printed individually on each TP Validity of TP is calculated based on the distance between plot and destination. After validity time is over the TP stands invalid.
- iv. The officers involved in monitoring should be provided with mobile application and/or bar code scanners using which the TP can be checked anywhere on road. As soon as the bar or QR code on TP gets scanned through using the mobile application and/or scanner or vehicle number is entered into the application or sent by SMS to a predefined number, all details of TP such as plot details, vehicle details, validity time, etc. should be fetched from the server. This means if anything is re-written on TP and attempt is made to reuse the same, it can be traced immediately. Various reports can be generated using the system showing daily lifting reports and user performance report. This way the vehicles carrying sand can be tracked from source to destination.
- v. The facility to fetch details using mobile app, website and SMS may be made available to the general public as well. However, they shall not be allowed to stop the vehicles to check the transportation. The only option that they should have is to check vehicle numbers of the passing vehicle in the mobile app or SMS for the validity of the pass. The only result that should be available to them should be if the vehicle carrying sand has a

- valid permit at the relevant point of time or not. If the citizen finds that the vehicle doesn't have such a permit, as ascertained from mobile app or website or SMS, he should alert local authorities, who shall then take further action as per the law.
- vi. In case, the vehicle break-down, the validity of Transport Permit or Receipt shall be extended by sending SMS by the driver in specific format to report the breakdown of the vehicle. The server will register this information and register the breakdown. The State can also establish a call center, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server/call center.
  - vii. The route of the vehicle from source to destination shall be tracked through the system using checkpoints, Radio-frequency identification (RFID) tags, and Global Positioning System (GPS) tracking.
  - viii. The system shall enable the Authorities to develop a periodic report on different parameters like daily lifting report, vehicle log/ history, lifting against allocation, and total lifting. The system can be used to generate auto mails/SMS. This will enable the District Collector / Magistrate and other authorities to get all the relevant details and will enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle should be tracked.
  - ix. It is necessary to prevent any truck/vehicle from transporting sand out of the identified plot bypassing the strong IT enabled system. Therefore, at each of the sand plot, the following additional measures should be taken.

- (a) There shall be one entry and exit point provided for trucks/vehicles. The said entry point should have facilities as mentioned above. In case, it is necessary to have more than one entry/exit points, all such points shall have checkpoints with facilities as mentioned above. All other possible ways of entry/exit should be closed using barriers like compound, trench, etc. All provisions shall be made to not make it possible for any vehicle to enter or exit without entry into the computerized system.
- (b) All such points should have 24X7 CCTV coverage, the footage of which should be made available online to the district administration. In cases, where sufficient internet bandwidth is not available, it may be deposited with the district administration on a weekly basis. If possible, the entry/exit points should have boom barriers which will record the vehicles entering and exiting the plot.

**8.0 GENERAL APPROACH TO SUSTAINABLE SAND MINING****8.1 Pre-requisite for starting sand mining operation**

- i)** All district to prepare a comprehensive mining plan for the district as per the provision of District Survey Report. These reports shall be put on the website of District Administration. No mining shall be allowed in the area which has not been identified in the comprehensive mining plan of the District.
- ii)** Replenishment study should be conducted on regular basis.
- iii)** All potential rivers mining zone/area shall be identified and put for auction with proper geo-tagged details by the auctioning authority concerned.
- iv)** The latitude and longitude of each mining lease shall be clearly mentioned in Letter of Intent issued to the potential mine lease. Such information shall be provided on the website of the district administration.
- v)** The provision of these guidelines shall be considered while identifying the potential stretches /locations and boundaries of the leases for the minable area.
- vi)** The Lol holder shall seek Environmental Clearance as per the provision of EIA Notification, and the regulatory authority shall ensure that the provision suggested in "Sustainable Sand Mining & Management 2016" and in this documents, as applicable are part of the clearance conditions.
- vii)** There shall be no river bed mining operation allowed in monsoon

period. The period as defined by IMD Nagpur for each state shall be adhered with.

- viii) The monitoring infrastructures including weighbridge and adequate fencing of the lease area, CCTV, Transport permits, etc, as suggested in this document shall be ensured in order to reduce unrecorded dispatch.
- ix) Regular monitoring of mined minerals and its transportation and storage shall be ensured and all information shall be captured at centralized database so that easy tracking of illegal material can be done.
- x) Annual audit of each mining lease shall be carried out wherein three independent member of repute, nominated by District administration shall also participate.

## **8.2 Mining of Sand from Agricultural Fields**

This practice is prevalent in Haryana; to ensure that mining from outside doesn't affect rivers, no mining is permitted in an area up to a width of 100 meters from the active edge of embankments or distance prescribed by Irrigation department whichever is critical. The top layer of soil varying between 1 and 2 meters is removed and stacked separately and thereafter the sand deposit which maybe 10-15 meter deep is mined. After removing the sand layer up to a maximum depth of 09 meters or the maximum mineable minerals, as permitted by competent authority. The topsoil stacked is spread out on the field and the same is brought under the cultivation. Though the level of this land (mined out area) is lowered to the depth of the excavation and in initial years of cultivation the productivity is low, but the productivity of the fields improves with continued cultivation and addition of organic manure in the field. In Haryana, some leases are of large area

(ranging from 1000 hectare to 2000 hectare) and agricultural fields and river bed both are included in the same lease for mining.

The following recommendations should be kept in mind for mining in such leases:

1. Mining of sand in such mine leases will require environment clearance.
2. The lease should be of sand mining either from the agricultural field or river. In the same lease, both types of area should not be included.
3. The sand mining from the agricultural field is being done in Haryana for a long time and it can be done in a more sustainable manner without adverse impact on agricultural productivity if proper environmental safeguards are taken.
4. The slope of mining area adjacent to agricultural fields should be proper (preferably 45 degree) and adequate gap (minimum 10 feet) be left from adjacent agricultural field to avoid erosion and scouring.

The provision for sand mining in agricultural field may be permitted, whenever replenishment of sand occurs due to natural phenomena.

Permission may also be granted by competent authority (District administration) for excavation of sand/Soil from agricultural fields, after due diligence of this prevailing condition in order to avoid any unacceptable impact on the environment and nearby livelihood from agriculture provided such objective of such excavation mining of Soil/Sand in limited increase the productivity of sand agricultural field.

## 9.0 MONITORING MECHANISM

### 9.1 Illegal Mining

The Hon'ble Supreme Court in its Judgment dated 2.08.2017 in W.P 114 of 2014 in the matter of Common Cause Vs Union of India & Ors, inter-alia passed the following:

Para 128. *The simple reason for not accepting this interpretation is that Rule 2(ii-a) of the MCR was inserted by a notification dated 26th July 2012 while we are concerned with an earlier period. That apart, as mentioned above, the holder of a mining lease is required to adhere to the terms of the mining scheme, the mining plan and the mining lease as well as the statutes such as the EPA, the FCA, the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. If any mining operation is conducted in violation of any of these requirements, then that mining operation is illegal or unlawful. Any extraction of a mineral through an illegal or unlawful mining operation would become illegally or unlawfully extracted mineral."*

In view of above Judgement, any mining activities which are not governed under the provision of Environment (Protection) Act, 1985, The Water (Prevention & Control of Pollution Act, 1974, The Air (Prevention & Control of Pollution) Act, 1981, Forest Conservation Act-1980, Wildlife Protection Act - 1972, shall be considered as illegal mining within the provision of section 21(5) of Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act) and the concerned authority shall take necessary action within the provision of MMDR Act.

As per the provision of 23(C) of MMDR Act, the State Government is empowered to make rules for preventing illegal mining, and transportation

& storage of Illegal minerals. All such mining which qualifies under illegal, shall be dealt with in the provision of MMDR Act by the concern authorities.

State Pollution Control Board (SPCB) is the nodal authority in the State for dealing with cases related to pollution or environment management coming under the purview of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment Protection Act 1986. SPCB shall initiate appropriate action under the provision of these acts for non-compliance or violation of the provisions.

### **9.2 Environmental Damage due to illegal mining**

The environmental damages incurred or resulting due to illegal mining shall be assessed by a committee constituted by District Administration having expertise from relevant fields, and also having independent representation of locals and State Pollution Control Board. Guidelines for assessment of ecological damages prescribed by the State Government or Concerned Pollution Control Boards or any other authority shall be applicable and compensation as fixed shall be paid by the project proponent, in light of Hon'ble National Green Tribunal orders.

### **9.3 Monitoring of Mining near Inter-district or inter-state boundary**

There are situations where bifurcated river becomes district boundaries or state boundaries in such situation it is difficult to assess the mining potential, or to have close monitoring and enforcement of the regulatory provision. Such challenges have been identified and dealt with in SSMG-2016. However, in the absence of any standardized procedure, the monitoring has not been effectively practiced. This has been highlighted by the High Power Committee constituted by NGT in the matter pertaining to illegal mining.

The districts/state sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and also should actively participate in the preparation of DSR by providing appropriate inputs. In such cases, the draft DSR so prepared shall be put up for public consultation in both the districts through respective district administration website.

The task force shall meet every quarter to reconcile the data collected during the period and identify any gap/ lapses based on the outcome of such meeting. The respective district shall take action/ corrective measures. Effort shall be made for real-time data sharing between both the district.

The task –force shall include essentially the representative of respective districts from the mining department, transport department, regional office of SPCB concerned and a reputed citizen nominated by district administration. The Taskforce shall be headed by officer not less than ADM rank and quarterly outcome shall be submitted to District administration.

In addition to the above, there is a need for strict surveillance, particularly at night. The State of Gujarat has already initiated a program called '*Trinetra*' for night surveillance by using night-vision drones to control illegal mining incidents. This program is giving satisfactory results. Such type of system may also be developed by each State within a reasonable time.

A typical standard operating procedure for assessing illegal mining by the committee constituted shall, but not limited to, include the steps given in the following table. However, the process of assessing can be modified based on site-specific conditions and any deviation shall be recorded in the report with proper justification.

**Suggestive standard Practice for assessing illegal mining**

Step 1	The assessment team should collect the information and documents prescribed in the Pre-Requisite section.
Step 2	The assessment team should verify the applicability/validity of statutes under EPA-1986, Air and Water Act, MMDR 1957, State Mines and Mineral Rules, etc.
Step 3	Field visit should be conducted for identification of mining lease area (in hectare) and boundary pillar constructed to indicate the same.
Step 4	With the help of GPS instrument, the team should assess the area where any extraction or mining have been carried out on the day of visit and calculate the mined-out area in a hectare.
Step 5	If available, the team may avail the use of latest satellite images for calculating the total mined out area.
Step 6	The team should verify the Ground / Surface Level (in meter above MSL) of at least 04 highest points in or around the area where mining has been done. The Ground/surface level will then be computed based on averaging of 04 highest points verified by the team.
Step 7	With the help of Depth Measurement kit or any depth measuring instruments, the depth should be measured for at least 04 points in the mined-out area. For computing, the depth, averaging of the value obtained at 04 points should be done.
Step 8	Verification of compliance conditions of Environmental Clearance and Consent to operate, mining methodology under Mining Plan
Step 9	Identification of vulnerable impacts observed on the field and non-compliance of conditions of Environmental Clearance and Consent to Operate.

Step 10	Field Survey for identification, monitoring and verification of ecological species based on the information available and documents mentioned in the Pre-requisite section.
Step 11	Preparation of inventory of machinery used/observed on the field (optional)
Step 12	Preparation of inventory of hydraulic structures observed on the field (optional)
Step 13	Water sampling for assessment of water quality including physical and biological parameters. (optional)
Step 14	Reconciliation collation of data/information and compilation to maintain violation.
Step 15	Identification of restoration plan and computation of cost of the restoration plan.

#### 9.4 Monitoring Mechanism

A uniform monitoring mechanism is required to assess the regulatory provision in quantitative terms, with robust institutional and legal framework. Based on past experience and suggestions available, the following requirements are suggested for defining a mechanism for monitoring of mining activities which will help in identification of mining which is operating either illegally or are violating the regulatory provisions. Some suggestion will facilitate direct or indirect information to help in such an assessment.

1. All precaution shall be taken to ensure that the water stream flows unhindered and process of Natural river meandering doesn't get affected due to mining activity.
2. River mining from outside shall not affect rivers, no mining shall be permitted in an area up to a width of 100 meters from the active edge of embankments or distance prescribed by the Irrigation department.

3. The mining from the area outside river bed shall be permitted subject to the condition that a safety margin of two meters (2 m) shall be maintained above the groundwater table while undertaking mining and no mining operation shall be permissible below this level unless specific permission is obtained from the Competent Authority. Further, the mining should not exceed nine-meter (9 m) at any point in time.
4. Survey shall be carried out for identifying the stretches having habitation of freshwater turtles or turtle nesting zones. Similarly, stretches shall be identified for other species of significant importance to the river ecosystem. Such stretch with adequate buffer distance shall be declared as no-mining zone and no mining shall be permitted. The regulatory authority as defined for granting Environmental Clearance, while considering the application of issuance of ToR and/or EC for the adjacent block (to non-mining zone) of mining shall take due precaution and impose requisite conditions to safeguard the interest of such species of importance.
5. District administration shall provide detailed information on its website about the sand mines in its district for public information, with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed. Appropriate feedback and its redressal mechanism shall also be made operational. The details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.

6. A website needs to be maintain to track the movement of centralised sand mining and a Centralised server system should be made to manage the data related to sand mining across India.
7. The mineral concession holders shall maintain electronic weighbridges at the appropriate location identified by the district mining officer, in order to ensure that all mined minerals from that particular mine are accounted for before the material is dispatched from the mine. The weighing bridge shall have the provision of CCTV camera and all dispatch from the mine shall be accounted for.
8. The mineral movement shall be monitored and controlled through the use of transit permit with security features like printing on IBA approved MICR papers, Unique bar/QR, fugitive ink background, invisible ink mark, void pantographs and watermarks papers or through use of RFID tagged transit permits and IT /IT-enabled services. Such monitoring system shall be created and made operationalised by State Mining department and district level mining officer shall be responsible for ensuring that all legal and operational mines are connected and providing the requisite information on the system. Regular check and associated report shall be submitted to DLTF and uploaded on the website.
9. State Government shall constitute a District Level Task Force (DLTF) under the Chairmanship of Deputy Commissioner/District Magistrate/Collector with Superintendents of Police and other related senior functionaries (District Forest Officer, District transport officer, Regional officer- SPCBs, Senior Officer of Irrigation Department, District Mining Officer) with one/two independent member nominated by the Commissioner concerned. The independent member shall be retired government officials/teacher or ex-serviceman or ex-judiciary member.

The DLTF shall keep regular watch over the mining activities and movement of minerals in the district. The DLTF shall have its regular meeting, preferably every month to reconcile the information from the mining activity, and other observations made during the month and take appropriate corrective and remedial action, which may include a recommendation for revoking mining lease or environmental clearance. The DLTF may constitute an independent committee of the expert to assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern. The recommendation may also include action under the provision of E(P) Act, 1986.

10. The area not identified for mining due to restriction or otherwise are also to be monitored on a regular basis by the DLTF. Any observations of mining activity from the restricted area shall be reported and corrective measures shall be initiated on an urgent basis by the DLTF.
11. The dispatch routes shall be defined in the Environmental Clearance and shall be avoided through densely habituated area and the increase in the number of vehicle movement on the road shall be in agreement with the IRC guidelines / carrying capacity of the road. The alternate and dedicated route shall be explored and preferred for movement of mining to avoid inconvenience to the local habitat. The mining production capacity, by volume/weight, shall be governed by total permissible dispatch calculated based on the carrying capacity of dispatch link roads and accordingly, the production should be regulated.
12. The movement of minerals shall be reconciled with the data collected from the mines and various Naka/check posts. Other measures may also include a general survey of the potential mineable area in the district

which has not been leased/auctioned or permitted for mining due to regulatory or other reasons.

13. The location and number of check post requirement shall be reviewed by DLTF on a regular basis so that appropriate changes in location/number could be made as per the requirement. Such review shall be carried out on a regular basis for the district on inter-state boundary or district providing multiple passages between two districts of different states.
14. The district administration shall compile the information from their district of the permitted and legal mined out minerals and other details and share such information and intelligence with the officials of the adjoining district (Inter or/and Intra State) for reconciliation. The information shall include the area of operation, permissible quantity, mined out minerals (production) the permitted route etc., and other observations, especially where the mine lease boundary is congruent with the district boundary. Such coordination meeting shall be held on a quarterly basis, alternatively in two district headquarters or any other site in two districts decided mutually by the District Magistrate.
15. The mining department shall include submission of an annual environmental audit report as one of the conditions in the mining lease agreement. The annual audit for each river bed mining lease shall be carried out and the audit report shall be uploaded on the website of district administration. The audit shall be carried out by an independent team of 3 members nominated by District Collector/Magistrate/Commissioner comprising of Ex-Serviceman, Ex-Government officials of repute, Professor or Person having experience of mining/environment. The guidelines and method of the audit shall reflect adequately the monitor-able parameters and output and reflect

the compliance status with respect to the conditions imposed by the regulatory authorities including conditions of Environmental clearance.

16. The in-situ and ex-situ environmental mitigative measures stipulated as EMP, CER, CSR and other environmental and safety conditions in mines including the welfare of labours shall properly reflect in the audit report.

## 9.5 Suggestive additional requirements are

### i. The requirement at the Mine Lease Site:

- a. Small Size Plot (Up to 5 hectares): Android Based Smart Phone.
- b. Large Size Plots (More than 5 hectares): CCTV camera, Personal Computer (PC), Internet Connection, Power Back up.
- c. Access control of mine lease site.
- d. Arrangement for weight or approximation of the weight of mined out mineral on the basis of the volume of the trailer of vehicle used.

### ii. Scanning of Transport Permit or Receipt and Uploading on Server:

- a. Website: Scanning of receipt on mining site can be done through barcode scanner and computer using the software;
- b. Android Application: Scanning on mining site can be done using Android Application using a smartphone. It will require internet availability on SIM card;
- c. SMS: Transport Permit or Receipt shall be uploaded on the server even by sending SMS through mobile. Once Transport Permit or Receipt get uploaded, a unique invoice code gets generated with its validity period.

### iii. Proposed working of the system:

The State Mining Department should print the Transport Permit or Receipt with security features and issue them to the mining leaseholder through the District Collector. Once these Transport Permits or Receipts are issued, they would be uploaded on the server against that mine lease area. Each receipt should be preferable with pre-fixed quantity, so the total quantity gets determined for the receipts issued. When the

Transport Permit or Receipt barcode gets scanned and invoice is generated, that particular barcode gets used and its validity time is recorded on the server. So all the details of transporting of mined out material can be captured on the server and the Transport Permit or Receipt cannot be reused.

**iv. Checking On Route:**

The staff deployed for the purpose of checking of vehicles carrying mined mineral should be in a position to check the validity of Transport Permit or Receipt by scanning them using the website, Android Application and SMS.

**v. Breakdown of Vehicle:**

In case the vehicle break-down, the validity of Transport Permit or Receipt shall be extended by sending SMS by the driver in specific format to report the breakdown of the vehicle. The server will register this information and register the breakdown. The State can also establish a call center, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server or call center.

**vi. Tracking of Vehicles:**

The route of the vehicle from source to destination can be tracked through the system using checkpoints, RFID Tags, and GPS tracking.

**vii. Alerts or Report Generation and Action Review:**

The system will enable the authorities to develop a periodic report on different parameters like daily lifting report, vehicle log or history, lifting against allocation, and total lifting. The system can be used to generate auto mails or SMS. This will enable the District Collector or District Magistrate to get all the relevant details and shall enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle shall be tracked.

The monitoring of mined out mineral, environmental clearance conditions and enforcement of Environment Management Plan will be ensured by the regulatory authority and the State Pollution Control Board or Committee. The monitoring arrangements envisaged above shall be put in place. The monitoring of enforcement of environmental clearance conditions shall be done by the Central Pollution Control Board, Ministry of Environment, Forest and Climate Change and the agency nominated by the Ministry for the purpose.

Some of the State has followed the SSMMG-2016 and has also improvised or customized on the provisions given therein, and are successfully in operation. Salient provision adopted at different stages of sand mining in the state of Tamil Nadu is given as **Annexure VIII**.

## 9.6 Actions against illegal excavation and transport

Solapur district administration in Maharashtra had adopted a multi-pronged strategy to penalize the persons involved in illegal excavation and transport which resulted in a significant increase in revenue earned by the state. Following rules and procedures as mentioned in these guidelines will add to the costs of PP. Those involved in illegal activities are not required to bear these costs and this will make their supply in the market cheaper (though illegal). This will put the players running their business by following rules and procedures laid down by the government to disadvantage as far as the selling price is considered. Therefore, it is necessary to come down heavily on those involved in illegal excavation/transport, so that there is no incentive for players to abide by the rules.

### **The following action may be taken to achieve this deterrence against illegal business:**

1. The action should be taken under all legal options available simultaneously. Thus, after identifying the case of illegal excavation, storage and/or transport of minor minerals (including sand), fine should be levied as per the land revenue laws/code(s) of the state. In addition, FIR should be lodged in the police station under relevant sections of law including sec 379 IPC. In addition, action under the Motor Vehicle Act, 1989 and relevant rules should initiate to cancel/suspend the driving license of the driver and permit of the vehicle. Further, action should be initiated under provisions in the Income Tax Act, 1961 for unaccounted income and under the Central Goods and Services Act, 2017 for non-payment of GST. (Earlier this was done under the state act pertaining to Value Added Tax/Sales Tax). Habitual offenders should also be taken up under local state laws for externment and/or preventive action. It is clarified that as per law, it is possible to take all actions under various laws

simultaneously for one offence. What is prohibited in law is an action under the same law for the same act more than once.

2. The action should be taken against all persons responsible. Often, there is a tendency to penalize only the drivers of the vehicles. The mafia of illegal mining and transport is much bigger and drivers are only one part of the system. It is necessary to identify all those involved in the offence. It is usually not possible to reach the place of excavation without creating a motorable pathway up to the same through land which may be private land. Such role of such landowners needs to be looked into for each offence and proceeded against simultaneously. Further, the role of vehicle owners needs to be probed. Role of the person who allowed his land to be used for illegal excavation and storage should also be examined. Lastly, the person who purchases such sand should also be probed. The legal proceedings stated above needs to be initiated against all of these together. An attempt should be made to fix the financial responsibility in joint and several ways so that recovery is easier.
3. There may be discretion available in law about the extent of the penalty to be levied. If such discretion is very wide, then it is advisable that guidelines may be laid down to reduce such discretion in law for levying penalties. For example, in Maharashtra, Land Revenue Code, fine of any amount of penalty up to thrice the value of the sand can be levied. Solapur district administration had instructed Tahsildars and SDMs not to use discretion and levy the fine of three times the value. Availability of discretion makes junior level functionaries susceptible to pressures and it may also lead to corrupt practices.
4. It is emphasized that actions, as stated above, are most important to ensure that the IT-based system works. If these exemplary actions are not taken against everyone, it shall create a strong disincentive to those

involved in legal excavation and transportation. For IT-based (or any other) legal system to work, it is necessary to ensure that illegal system stops working altogether.

**Annexure-I****Details of Sand/M-Sand Sources****a) Rivers:**

River Name/M-Sand Plant	Total Stretch of River (in KM)	Type of River (Perennial or Non-Perennial )

**b) De-Siltation Location: (Lakes/Ponds/Dams etc.)**

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size(Ha)

**c) Patta Lands/Khatedari Land:**

Owner	Sy. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)

**d) M-Sand Plants:**

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum

**Note:** For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.

## Annexure-II

## List of Potential Mining Leases (existing &amp; proposed)

## Rivers

River Details	Lease Details	Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in Tonnes /Annum considering digging depth max as 3 meters	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing / Proposed

## Patta Lands/Khatedari Land: (existing &amp; proposed)

Owner	Sy. No	Area	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing /Proposed

## De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing &amp; proposed)

Name of Reservoir /Dams	Maintain /Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size (Ha)	Quantity MT / Year	Existing /Proposed

## M-Sand Plants :( existing &amp; proposed)

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum	Existing/Proposed

**Annexure-III****Cluster & Contiguous Cluster details****Clusters:**

River Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation (Ton)

**Contiguous Clusters:**

River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed / Patta Land)	Distance between clusters	Village	Area of Cluster ( Ha)	Total Mineral Excavation (Ton)

**Annexure-IV****Transportation Routes for individual leases and leases in Cluster**

Lease No	Transportation Route No	Number of tipper s /day of lease	Number of tipper s /day of all the lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/ Lease Owner	Route Map & Location

Cluster No	Transportation Route No	Number of tipper s /day of cluster	Number of tipper s /day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/ Lease Owner	Route Map & Location

**Annexure-V****Final List of Potential Mining Leases (existing & proposed)****Rivers**

River Details	Lease Details	Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in (MT/Yr) (Mine depth max as 3 m)	Mineral to be mined (Sand/Bajri/RBM etc.)	Existing /Proposed

**Patta Lands/Khatedari Land: (existing & proposed)**

Owner	Sy. No	Area	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing /Proposed

**De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing & proposed)**

Name of Reservoir/ Dams	Maintain/ Controlled by State Govt./PSU etc.	Location	Distt.	Tehsil	Village	Size(Ha)	Quantity MT/Year	Existing/ Proposed

**M-Sand Plants :( existing & proposed)**

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity MT/Annum	Existing/Proposed

**Annexure-VI****Final List of Cluster & Contiguous Cluster****Clusters:**

River Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation (Ton)

**Contiguous Clusters:**

River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed /Patta Land)	Distance between clusters	Village	Area of Cluster (in Ha)	Total Mineral Excavation (Ton)

**Annexure-VII****Final Transportation Routes for individual leases and leases in Cluster**

Lease No	Transportation Route No	Number of tippers /day of lease	Number of tippers /day of all the lease on route	Length of Route in KM	Type of Road (Black Topped/unpaved)	Recommendation for road(Black Topped/unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location

Cluster No	Transportation Route No	Number of tippers /day of cluster	Number of tippers /day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/unpaved )	Recommendation for road(Black Topped/unpaved )	The road will be Constructed by Govt/Lease Owner	Route Map & Location

**Annexure VIII****Salient provision for sand mining in the state of Tamil Nadu****STEPS TO BE FOLLOWED BEFORE EXECUTION:**

- The state as a policy should endeavor to have single authority/agency responsible for all river sand mining in the state with an objective to ease the gap in demand and supply and accordingly, take necessary measures including planning, monitoring of mined material and its transport, and to curb illegal mining and sale of materials.
- The prospective site for sand quarry may be identified based on the availability of adequate sand deposits along the river beds, which hinders the free flow of water and results in flooding during monsoon seasons. Emphasis may be given to such quarry sites which is more viable for replenishment.
- A detailed study may be conducted by engaging expert from reputed Institutions to identify prospective sand reaches, assessment of the impact of sand quarrying on the Ground Water Table and water availability, conduct bore log details and study the social and environmental aspects. The generic requirement for replenishment study is to be followed.
- Once the site is identified for prospective sand quarry site based on the detailed replenishment study, the concerned department shall submit the proposal with the geo-tagged boundary of the proposed mining Precise Area Proposal to the District Collector for approval.
- A joint inspection may be carried out by the RDO/Sub-Collector, Assistant/Deputy Director,

- Executive Engineer, TWAD Board and the PWD officials to consider the various factors before giving consent to the proposal.
- The RDO concerned along with Revenue officials may verify the revenue records of the proposed sand quarrying area and give the NOC.
- The AD/DD Mines may verify the presence of permanent structures such as tower line, bridge, monuments if any, in the vicinity of the proposed mining site as per Tamil Nadu Minor Mineral Concession Rules, 1959 ( As per Rule 36 " there shall be no quarrying of sand in any river bed or adjoining area or any other area which is located within 500 meter radial distance from the location of any bridge, water supply system, infiltration well or pumping installation of any of the local bodies or Central or State Government Department or the Tamil Nadu Water Supply and Drainage Board head works or any area identified for locating water supply schemes by any of the above mentioned Government Department or other bodies" and " The distance of 50 meter shall be measured in the case of railway, reservoir or canal horizontally from the outer toe of the bank or the outer edge of the cutting, as the case may be .... "). Also, the availability of minerals may be cross verified with the available DSR.
- The TWAD officials may verify the drinking water schemes located nearby the proposed quarry site and the minimum distance required as per statutory norms.
- Based on the feasibility report of the joint inspection by the Revenue, Tamil Nadu Water Supply and Drainage Board and Mining officials/experts, the District Collector may give consent for the Precise Area proposal.

- After getting Precise Area approval, a detailed Mining Plan and sketch shall be prepared by the Executive Engineer, PWD using the services of a NABET accredited consultant who holds the pivotal role in the preparation of mining plan. Due responsibility will be expected on the concerned consultant in the mining plan preparation taking care of adhering to all mining rules, existing as on date. The mining plan shall contain the details of quantity to be excavated, the period of mining, method of excavation, deployment of required machinery, Environment Management Plan (EMP), proposed number of laborers to be deployed and Conceptual Mining Plan, as per Rule 41 of TNMMC Rules 1959. It is also the duty of the consultant to give the safe distance of 50 m or twice the bank height from the toe of the riverbank, whichever is higher and fixing the Geo coordinates for boundaries using DGPS instruments.
- The concerned Executive Engineer, PWD shall submit the Mining Plan prepared by the NABET accredited consultant to the concerned Assistant/Deputy Director, Department of Geology and Mines for approval, as per Rule 42 of TNMMC 1959. After scrutiny, the Assistant/Deputy Director, Department of Geology will present the Mining plan before the State Level Environment Impact Assessment Authority (SEIAA) for granting Environmental Clearance.
- The Executive Engineer, PWD shall prepare Form I and Pre-feasibility report with the help of the consultant and submit to SEIAA for an area less than 50 Ha. or to the Ministry of Environment and Forest and Climate Change (MoEF&CC) for the area more than 50 Ha.
- The State Expert Appraisal Committee (SEAC) under SEIAA, consisting of experts from renowned fields such as Mines, Environment, Sociology etc. shall conduct a site inspection of the proposed sand quarry site and after intense scrutiny, may recommend the proposal to SEIAA for approval.

- SEIAA shall grant Environmental Clearance for the sand quarry proposal after analyzing all the statutory provisions and based on the recommendation of the SEAC.
- The Environmental Clearance shall be informed to the public with basic details through advertisement in at least two widely circulated local newspapers with at least one in the vernacular language of the locality, within 7 days of the receipt of the clearance.
- On receipt of the Environmental Clearance, the Executive Engineer, PWD shall apply for Consent to Establish (CTE), from the Tamil Nadu Pollution Control Board as per the Air and Water Act, to enter upon the sand quarry site and commence the preliminary works such as construction of temporary sheds, bio-toilets, formation of biodegradable road using sugar cane leaves etc., drilling of bore wells etc. as per the statutory requirements. After all the preliminary works are completed, the Executive Engineer, PWD shall apply for the Consent to Operate (CTO) from the Tamil Nadu Pollution Control Board. Earmarking boundary of the identified land site through the concrete posts along with red flags need to be established.
- On receipt of the CTO, the Executive Engineer, PWD shall request the consent of the District Collector to commence the quarries. The District Collector shall request the Taluk Level Task Force comprising of Tahsildar, Inspector of Police, Officials from the Departments of Geology and Mining, Transport and Forest, Assistant Engineer, PWD and the Village Administrative Officer concerned, to verify the compliance of all preconditions mentioned in the Environmental Clearance and grant necessary permission to start the functioning of new sand quarries.

**II. STEPS TO BE FOLLOWED DURING EXECUTION:**

- Before the commencement of mining operations, the depth of sand quarrying needs to be measured accurately using Advanced technology and new gadgets like Total Stations, Global Positioning System (GPS) instruments etc. The Total Station and GPS instruments also need to be calibrated before measurement. Both the traditional and modern techniques may be infused in the right blend to get an accurate measure of the depth. A clear contour map (0.25m interval) of the levels within 2Km (one Km U/s and one Km D/s) needs to be prepared and submitted to both the Project Director, Sand Quarrying Operations and all the Monitoring Committee members. The depth of sand quarrying shall be restricted to 1 m from the theoretical/design bed level.
- The mining area must be demarcated at a minimum distance of at least 50 m away from the river embankment on either side. The boundaries of the quarries may be fixed with reference to the existing survey marks from the survey fields adjacent to the river. Sand quarrying lease area shall be demarcated on the ground with pucca stone or concrete pillars to show the present natural bed level and the depth of mining allowed.
- Modern techniques such as drone survey may be adopted to assess the depth and quantity of the mined area. Boundary pillars shall be erected at an interval of 50 m each on all four sides of the sand quarry site with red flags on every pillar and also in site pillars. The levels of shoal height, river bed height and depth to be excavated up to one meter downwards shall be marked in the pillars to avoid any deviation from the approved depth of excavation.
- It shall be ensured that no sand quarrying of any type is undertaken with 50m of the distance mentioned in the proposal (whichever is higher)

from both the banks of the river to control and avoid erosion of river banks.

- Temporary access roads or Katcha roads shall be formed between the banks of the river and the mining area with locally available bio-degradable materials such as sugarcane waste (bagasse), hay, etc.
- Proper entry and exit point for the movement of loading vehicles in and out of the sand quarry site shall be carefully located taking into consideration the habitations/settlements in the area.
- To monitor the groundwater level during sand quarrying operations, a network of existing wells may be established around the sand quarrying area and new piezometers must be installed at all sand quarry sites. Monitoring of Ground Water Quality in the vicinity (one Km radius from the sand quarrying site) shall be carried out once in two months.
- Periodic Monitoring (at least four times in a year – pre-monsoon, Monsoon, Post monsoon and winter) once in each season shall be carried out by PWD and the data thus collected may be sent regularly to SEIAA/TNPCB. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out, which includes immediate stopping of mining.
- Similar to the Baseline studies for data on water, soil and air etc., that is being done before the sand quarrying operations, the air and water quality may be checked periodically by Tamil Nadu Pollution Control Board to ensure that no pollution is caused due to Sand Quarrying Operations. 10. Safety gadgets such as earplugs, goggles, respiratory

devices, luminescent vests etc. may be provided to the workers at the sand quarry site.

- First aid kit with all essentials shall be kept ready at all quarry/depot site, in case of any emergency.
- To prevent air pollution due to the dust during sand quarrying operations and safeguard the persons in the sand quarry and depot site, constant water sprinkling on the pathways and dust prone areas may be done. The sand loaded vehicles are to be covered with a tarpaulin before moving out of the quarries/depots.
- Suitable depots shall be located in the vicinity of the sand quarry site to facilitate the sale of sand. While selecting the site for depots, it must be ensured that the site is within 25 km from the sand quarry site and has an area of around 10-15 Acres with parking facilities and proper entry and exit for smooth movement of the vehicles. The depot site shall preferably be a Government poramboke land, foreshore area of tank bund etc., near an NH/SH/MDR/ODR. In the absence of any Government land in the vicinity, private Patta land may be leased out and rent fixed as per the approved Government rates applicable therein.
- Permission must be obtained from the Electricity Board for power supply to operate the CCTV cameras at sand quarry site and depots.
- Minimum of two CCTV cameras, one each at the entry and exit point and one PTZ camera may be installed at all quarries/depots to monitor illegality if any taking place in the sand quarry/depot.
- To ensure uninterrupted seamless live streaming of videos from the surveillance cameras, a high-speed Internet Lease Line connection may

be made available at all quarries/depots. Arrangements may also be made for online monitoring of the sand quarrying, Centre for Assessing Real-Time Sand Mining (CARS) that could be located at the office of the Project Director in Chennai.

- The live streaming of the videos shall be monitored at a Centralised control room and the data shall be stored in the Server for future references. A robust Customer Care may also be functional 24 x 7 at the Control Room, to redress the grievance of the public.
- Drop gates shall be installed at the entry and exit points of all quarries/depots.
- Display boards shall be erected in local vernacular language at sand quarry/depot site, in the nearest village by which sand transportation will be carried and at the entrance of the village road from the main road.
- The concerned authority of PWD shall call for e-tender to select the contractors for loading/raising of sand at the quarry site, transporting contractors to transport sand from the quarry site to depots and loading/maintenance contractors at depots.
- Sand shall be loaded in the quarries in the PWD tendered GPS fitted vehicles and online transmit permit shall be issued by the competent authorities in PWD to the transporting vehicles to transport sand from the quarry to depots.
- On the arrival of the sand shunting vehicles from quarry to the depot, an online authentication shall be done to confirm the arrival of the

appropriate quantity of sand mentioned in the transport permit into the depot.

- The loading of sand from the depots shall be carried out by booking through the online portal "www.tnsand.in" as done presently. Online transit passes will also be issued to the loaded vehicles which could be verified by using an Android app "TNSand Investigator".
- During operation of the quarries, the PWD officers shall ensure that at no point in time, the depth of quarry exceeds 1 m depth from the river bed level and quarrying is done in a uniform manner over the entire mining area to avoid overexploitation and formation of pits at fixed places.
- Proper registers may be maintained at the entry and exit points of the sand quarry/depot sites and a Loading Register may be made available during inspection. An Inspection Register and a Complaint Register may be made available at the sand quarry/depot site.
- The functioning time of quarries/depots shall be from 7.00 AM to 6.00 PM. No sand transporting vehicles to be parked inside the quarry/depot site during night time.
- A copy of the approved mining plan may be kept at the quarry site for ready reference.
- Photographs and sketch showing the pit dimensions, depth etc. may be recorded every week and maintained in the sand quarry. The Executive Engineer, PWD may inspect each sand quarry on a weekly basis and ensure that mining activities are taking place within the approved boundaries/depth.

- The sand quarrying activity shall be stopped if the entire quantity is quarried even before the expiry of the sand quarry lease period and the same shall be mentioned by the PWD authorities.
- The Taluk Level Taskforce shall inspect the quarries every fortnight, as per G.O. (Ms) No. 135 of Industries Department, dated 13.11.2009 and record the status of the compliance in the registers maintained at the sand quarry site.
- The Taluk Level Task Force has to submit its inspection report to the District Level Task Force chaired by the District Collector. The District Level Task Force has to be convened every month to discuss cases of illegal quarrying. An Environmentalist from reputed State / Central Institution and a legal expert on environmental matters may be part of the District Level Task Force. The District Level Task Force shall also dispose of the petitions on illegal sand quarrying after due enquiry and scrutiny, and pass orders within a period of two months from the date of receipt of the complaint. If any person is aggrieved with the orders passed by the District Level Task Force, an appeal may be preferred before the Appellate Forum.
- The District Collector shall take necessary steps to strengthen the existing District and Taluk Level Committees and act on the complaints received, if any, on illegal sand quarrying and take strict remedial measures to rectify the same in a time-bound manner. The District Level Task Force may send its monthly report to the Appellate Forum formed as per G.O. (Ms) No. 27 of Industries Dept. dated 17.02.2015.
- The Appellate Forum shall hear the appeals filed against the orders passed by the District Level Task Force. The Appellate Forum comprises

of the Secretaries to Government from Industries Department, Public Works Department, Revenue Department, Environment and Forests Department, Commissioner of Geology and Mining and an Expert from a reputed Government Institution.

- The Appellate Forum may convene once in 2 months to deliberate on the reports from the District Level Task Force and shall dispose of the appeals made by the petitioners aggrieved with the orders passed by the District Level Task Force.
- Periodical Capacity building and sensitization of PWD officials on the environmental and legal aspects of sand quarrying may be made mandatory. Continuous training and awareness programs shall be scheduled and conducted by IIT/Anna University for the PWD staff to keep themselves aware of the best practices in this field. It may be ensured that the enforcement officials from the Departments of Revenue, Police, Geology and Mining and Transport in the districts where quarries are situated are given adequate training and capacity building on their duties and responsibilities with respect to inspection of sand quarries and sand transporting vehicles at specified time intervals.
- No blasting shall be carried out any point in time.
- It is the obligation of the Public Works Department to run the quarry in an environmentally friendly and ecologically sustainable manner.
- The Hon'ble High Court-appointed Monitoring Committee shall inspect the sand quarries periodically and submit a report to the Hon'ble High Court.

- The PWD should explore/take necessary steps to introduce Mining Surveillance System (MSS) in line with MSS evolved by the Indian Bureau of Mines and Bhaskaracharya Institute for Space Applications and Geo-informatics (BISAG).

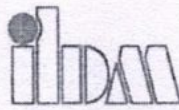
### **III. STEPS TO BE FOLLOWED AFTER EXECUTION:**

- A Judicious mine closure plan may be formulated once the quarry is closed after exhaustion of the quantity of sand.
- Reclamation works may be factored into the contract agreement and strict monitoring by the PWD officials may be initiated to scrupulously follow up the mine closure plan.
- It may be ensured that the total quantity of sand permitted in the EC shall not be exceeded in any case.
- After the exhaustion of the quantity of sand, the sheds constructed at the quarry site may be removed. All the roads and pathways may be levelled so that there is no obstruction for the normal flow in the river.
- All the records/registers may be carefully maintained by the PWD for future reference.



**ANNUAL REPORT**  
**River Sand Mining in Kerala: 2023-2024**

(As per the Judgment of Hon'ble National Green Tribunal, Principal Bench, ND in  
OA No.360/2015, 456, 726/2018 and others Case dated 26.02.2021)



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**August 2024**

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### EXECUTIVE SUMMARY

Hon'ble National Green Tribunal, Principal Bench, ND in the Judgment dated 26.02.2021 vide OA No.360/2015, 456, 726/2018 and Others, ordered to take strict action against illegal, unscientific mining of sand in the country. The Hon'ble NGT has directed all States/UTs to publish their Annual Reports covering actions taken against illegal sand mining and such annual reports need to be furnished to MoEF&CC by 30<sup>th</sup> April every year giving status till 31<sup>st</sup> March. In this context, the meeting held by the Chief Secretary, Government of Kerala on 20.04.2021 decided to entrust the Institute of Land and Disaster Management (ILDm), Thiruvananthapuram with the task of preparing the Annual Report in consultation with the Commissioner of Land Revenue and the Department of Environment. Therefore, ILDM has prepared a detailed questionnaire, collected relevant data from all districts, and prepared the Annual Report for the year 2023-2024.

Sand Mining in Kerala is controlled and regulated by the provisions of the Kerala Protection of River Banks and Regulations on Removal of Sand Act 2001. River sand mining has been completely handled by the State Government since 2001 and no portion of the river in the State is leased out to any private parties for sand mining. A three-tier decentralized system functions in the State to protect river banks and regulate river sand mining. The State High-Level Committee (SHLC) at the State level chaired by the Revenue Minister, the District Expert Committee (DEC) at the District level chaired by the District Collector, and the Kadavu Committee at the Panchayat/Municipality/ Corporation level are the statutory monitoring systems functions in the State. Sand Mining is done by Kadavu Committees with statutory powers under the supervision of the District Expert Committee (DEC) headed by the District Collector. The District Expert Committee is reconstituted in all 14 districts as per G.O (Rt) No.133/2024/RD dated 13.06.2024 and SRO No.518/2024. Apart from this, Taluk Level Special Squads are formed and they monitor illegal sand mining 24x7 at the Taluk level. Similarly, there is a Sub-Division Level Squad function to prevent illegal sand mining activities. Station House Officers (SHOs) of the Police Department are vigilant against illegal sand mining activities in their jurisdiction.

River Sand Mining has not been done in Kerala since 2016 for want of Environmental Clearance. The government of Kerala has entrusted CSIR-National Institute of Interdisciplinary Sciences and Technology (NIIST), with the task of preparing District Survey Report (DSR) for 11 districts in the State as part of obtaining Environmental Clearance. The DSRs of Malappuram, Thrissur, Palakkad, and Kollam Districts were approved by the State Environment Impact Assessment Authority (SEIAA). Officers of the Revenue Department not below the rank of Village Officer and Police Officers not below the rank of Station House Officer are empowered to seize vehicles, tools, and implements used in illegal mining and transportation of sand, including sand. The State Government has increased the penalty for illegal sand mining from Rs.25000/- to Rs 5 Lakh and the per day charges for continuous contravention from Rs. 1000/- to Rs.5000/- per day through the Kerala River Bank Protection and Regulations on Removal of Sand (Amendment) Act-2022. There were 327 vehicles seized against the illegal transporting of sand in Kerala from 01.04.2023 to 31.03.2024. There were 204 vehicles released this year after levying a fine. An amount of Rs. 1.96 Crore was remitted to the River Management Fund as a penalty amount levied against vehicles used in illegal sand mining. Against illegal sand mining, 425 cases were registered and an amount of Rs. 9.61 Lakh was remitted to River Management Fund from the sale of illegally mined sand after seizure and confiscation. The total penalty and fine amount remitted to River Management Fund during 2023-2024 was Rs 2.056 Crore. The existing enforcement and monitoring mechanisms were reviewed by the Chief Secretary in the high-level meeting held on 14.09.2023 and 05.02.2024.

## Chapter 1 Introduction

The river is a complex system of flowing water draining specific land areas, among the most important geomorphic features and a prime source of fresh water. Rivers face multiple environmental issues due to different forms of anthropogenic activities, of which sand mining is the most critical. Illegal sand mining without taking care of the environment is more rampant than legally regulated mining. This chapter provides an overview of the rivers of Kerala, the current sand mining scenario, and existing regulations and mechanisms to control and prevent illegal sand mining in the State.

### 1.1 Rivers of Kerala

Kerala is well blessed with 41 west-flowing and 3 east-flowing rivers (Fig. 1). The length of the river differs from 16 km (Majewaram River) to 244 km (Periyar). The drainage basin area ranges from 52 km<sup>2</sup> (Ramapuram River) to 6186 km<sup>2</sup> (Bharatapuzha). Together with their tributaries and distributaries, these rivers are crucial for maintaining the State's biophysical environment as they flow through highlands, midlands, and lowlands across the State. Keralites' culture, beliefs, social harmony, and economic progress are closely linked with the rivers. The main uses of river water in the State are for domestic, agricultural, and industrial purposes and the generation of hydel power.

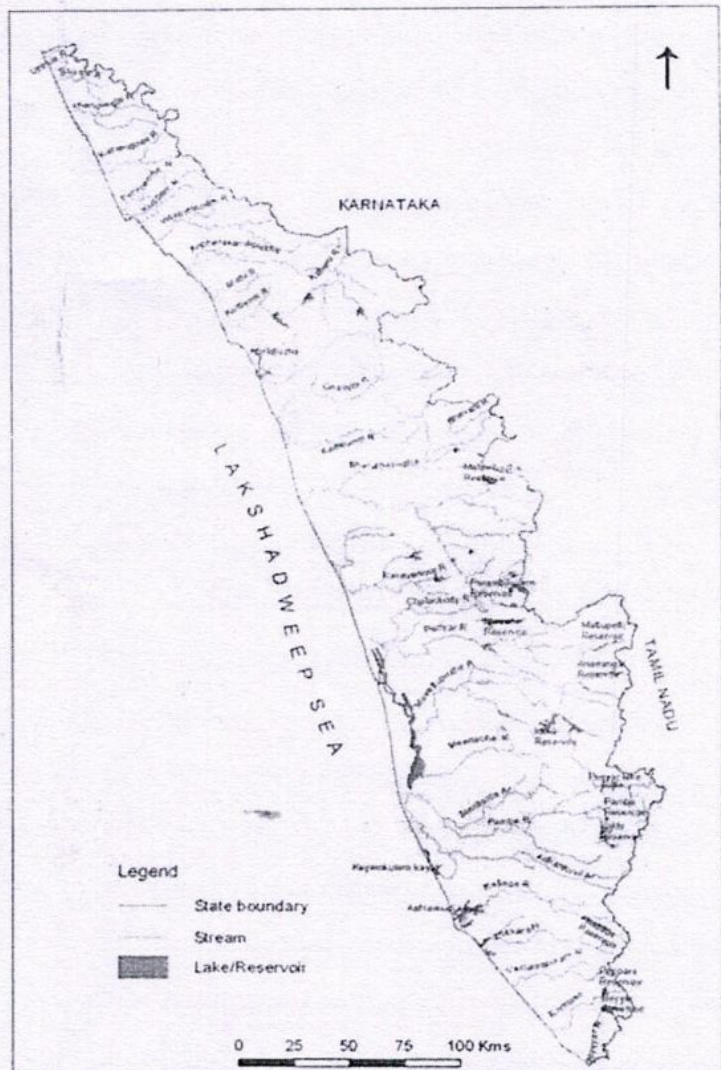


Fig. 1 Rivers of Kerala

## 1.2 River Sand Mining in Kerala

River sand mining in Kerala is controlled, monitored, and carried out solely by the State Government. No portion of the river in the State is given on lease for sand mining by private persons. River sand mining is regulated through the provisions of the Kerala Protection of River Banks and Regulation of Removal of Sand Act 2001 (amended in 2013) and Rules 2002, the binding guidelines of MoEF&CC, and the directives of the Hon'ble NGT and the Hon'ble Supreme Court. The Hon'ble Supreme Court's judgment in Deepak Kumar Vs State of Haryana in 2012 and the provisions of EIA Notification 2006 and its Amendments are strictly followed in the State. Guidelines were also issued by the State Government for obtaining environmental clearance for river sand mining as per circular No. P3/248/18/RD dated 15.11.2018 in the context of the EIA notification 2006 and sustainable sand mining management guidelines of MoEFCC-2016.

*River bed sand mining from rivers is not being done in the State of Kerala since 2016 for want of Environmental Clearance.* Sand mining was done till 2015 based on the Sand Audit reports prepared based on Section 9b & 29 of the Kerala Protection of River Banks and Regulation of Removal of Sand Act 2001 (KPRBRRSA-2001) and subsequent Environmental Clearance (EC) from the State Environment Impact Assessment Authority (SEIAA) vide EC No.571/ SEIAA/ K1/ 4230/ 2014 Dated. 20.04.2015 & 17.12.2015.

## 1.3 Sand Mining Monitoring and Management

Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 envisages a three-tier decentralized system to protect river banks and regulate river sand mining in the State. The State High-Level Committee (SHLC) at the State level chaired by the Revenue Minister, District Expert Committee (DEC) at the District level chaired by the District Collector, and Kadavu Committee at the Panchayat/Municipality/Corporation level are the statutory monitoring systems function in the State.

### 1.3.1 State High-Level Committee (SHLC)

The State High-Level Committee is the apex committee constituted as per Section 2A of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 (KPRBRRSA-2001). This is a multi-departmental committee headed by Revenue Minister with the following members.

- i) The secretary to Government in charge of the Revenue Department: Convener

- ii) Law Secretary: Member
- iii) The Commissioner of Land Revenue: Member
- iv) Director of the National Centre for Earth Science Studies: Member
- v) Director, Institute of Land and Disaster Management: Member
- vi) One Additional Director General of Police to be nominated by the Government: Member
- vii) Chief Engineer of the Irrigation Department to be nominated by the Government: Member
- viii) Two Environmental Scientists to be nominated by the Government: Members
- ix) Two Environmentalists to be nominated by the Government: Members

The present State High-Level Committee (SHLC) is re-constituted as per G.O (P) 14/2017/RD dated 23.12.2017. The State High-Level Committee meetings chaired by the Revenue Minister were held on 19.09.2023, 21.02.2024, 26.02.2024, and 15.03.2024.

### 1.3.2 District Expert Committee (DEC)

The District Expert Committee (DEC) is the district-level committee that functions as per Section 3 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001. DEC comprises the following members.

- The District Collector -Ex-officio;
- A representative nominated by the Government from among the members of the District Panchayat representing any area abutting any river of the district;
- The District Labour Officer-Ex-officio;
- The Superintendent of Police in charge of Law and Order in the district - Ex-officio;
- The Deputy Director of Panchayat-Ex-officio;
- A Municipal Chairman/Chairperson from among the Chairman/ Chairpersons or the Municipal Councils abutting any river in the district-to be nominated by the Government;
- Two persons from among the Presidents of the Grama Panchayath abutting any river in the district-to be nominated by the Government;
- One President from among the Presidents of the Block Panchayats abutting any river in the district-to be nominated by the Government;
- A Hydrologist-to be nominated by the Government;
- One Executive Engineer of the Irrigation Department working in this district;
- An engineer not below the rank of an Executive Engineer of the Kerala Water Authority working in the district -to be nominated by the Government:

- Three environmentalists associated with river protection activities- to be nominated by the Government;
- An Engineer (Roads and Bridges) of the Public Works Department, not below the rank of an Executive Engineer working in the district to be nominated by the Government
- The Geologist/District Officer, Department of Mining and Geology-Ex-officio;
- One Divisional Forest Officer-to be nominated by the Government.
- Revenue Divisional Officer or Revenue Divisional Officers having jurisdiction in the district.
- Three persons to be nominated by the Government from among the registered organisation of sand-removing workers of the district;
- Tahasildars of all the Taluks in the district and the Additional Tahasildars having jurisdiction concerning the regulation of sand removal in the district.

The District Collector is the chairman of DEC and the Revenue Divisional Officer (RDO) in charge of the headquarters is the convener of DEC. The DEC shall be met at least once in three months.

As per G.O (Rt) No.133/2024/RD dated 13.06.2024 and SRO No.518/2024, the District Expert Committee of all 14 Districts in the State was reconstituted.

#### 1.3.2.1 Powers and Functions of the District Expert Committee (DEC)

The District Expert Committee (DEC) has the following statutory powers and functions as per Section 9 of Kerala Protection of River Banks and Regulations on Removal of Sand Act - 2001.

- (a) To identify the Kadavu or riverbank in a district in which; sand removal may be permitted;
- (b) To fix the total quantity of sand that can be removed from a Kadavu or river bank giving due regard to the guidelines of expert agencies like the National Centre for Earth Science Studies and Centre for Water Resources Development and Management or other agencies in the sector, as may be specified by the Government from time to time;
- (c) To control the transportation of sand from a Kadavu or river bank to another area;
- (d) To close a Kadavu or river bank opened for sand removal;
- (e) To ensure the protection of river banks and keep them free from encroachment

- (f) To consider the opinion of the Kadavu Committee and take suitable measures to achieve the objectives of KPRBRRSA-2001.
- (g) To ensure that the Kadavu Committees of the District are performing their powers and functions conferred on them by this Act;
- (h) To advise the Government on the measures to protect the biophysical environmental system of the river banks;
- (i) To recommend to the Government the necessity to ban sand removal from any river or Kadavu during any season of the year;
- (j) To carry out the Directions given by the Government, from time to time;
- (k) To exercise such other powers and perform such other duties as are conferred on it by this Act and rules made thereunder;
- (l) To advise on any other matter to carry out the provisions of KPRBRRSA-2001.

### 1.3.3 Kadavu Committee (KC)

The Kadavu Committees are the panchayat level statutory committees to control and monitor sand mining, functions as per Section 4 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 with the following members.

- (a) The President of the Grama Panchayat or the Chairman/Chairperson of the Municipality of the concerned Kadavu-Ex-officio;
- (b) The Secretary of the Grama Panchayat or the Secretary of the Municipality of the area- Ex-officio,
- (c) The Assistant Labour Officer of the area-Ex-officio;
- (d) The Grama Panchayat Member or the Municipal Councillor of the area-Ex-officio;
- (e) The Assistant Engineer of Irrigation Department having jurisdiction in the area-Ex officio;
- (f) The Assistant Engineer, (Roads and Bridges) of the Public Works Department having jurisdiction in the area-Ex-officio;
- (g) The Assistant Engineer of the Kerala Water Authority having jurisdiction in the area-Ex-officio;
- (h) The Village Officer having jurisdiction in the area-Ex-officio;
- (i) Three Environmentalists to be nominated by the District Collector.
- (j) Three persons to be nominated by the District Collector from among the registered organizations of sand-removing workers of the said area.

The President of the concerned Grama Panchayat or the Chairman/Chairperson of the Municipality is the Chairman of the Kadavu Committee and the Secretary of the Grama Panchayat or Municipality shall be the Convenor of the Kadavu Committee.

#### **1.3.3.1 Powers and Functions of the Kadavu Committee (KC)**

The Kadavu Committees have the following powers and functions as per Section 11 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001

- (a) The suitability of the Kadavu or river bank for sand removal;
- (b) The quantity of sand that may be removed from a particular Kadavu;
- (c) The additional measures to be taken for protection of the Kadavu or river bank;
- (d) The necessity to ban sand removal during any season of the year;
- (e) To recommend to the Grama Panchayats and the Municipalities for publication of list of country boats used for and labourers engaged in sand removal operations;
- (f) To carry out the instructions issued by the Government and the District Expert Committees, from time to time;
- (g) Advise on any other matter to carry out the provisions of KPRBRRSA -2001

#### **1.3.4 Land Revenue Commissioner (LRC)**

Land Revenue Commissioner (LRC) is the Authorized Officer to exercise overall supervision of the implementation of the provisions of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 and Rules 2002. LRC is assisted by an officer, not below the rank of Joint Land Revenue Commissioner entrusted by the Government for the purpose.

#### **1.4 General Conditions for the Sand Removal Operations in a Kadavu**

Following general conditions are stipulated for the removal of sand from a Kadavu in Section 12 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001

- (1) The Grama Panchayat or the Municipality concerned shall, before carrying out the sand removal operation obtain passes from the Geology Department which shall issue them on the recommendation of the District Expert Committee for a period of one month in advance, on payment of royalty as provided for in the law applicable for the payment of royalty.
- (2) No sand removal operation shall be carried out in a Kadavu before 7 a.m. and after 4 p.m.
- (3) The Grama Panchayat or Municipality concerned shall subject to the other provisions of this Act and the rules made thereunder, make necessary arrangements to carry out the sand removal operations.

- (4) Removal of sand shall be permitted only from the riverbed and no sand removal operation shall be done within 15 meters of the river bank.
- (5) No sand removal operation shall be carried out within a distance of 500 meters from any bridge or any irrigation project or pumping station of water supply projects or check dams or from their retaining wall or the venue of any religious or cultural activities conducted on river bank or the sandbank in river or in part of the river.
- (6) The vehicle for loading sand shall be parked at a distance of at least 25 meters from the river bank, and no vehicle shall be brought to the river bank for loading,
- (7) No sand removal shall be done in a Kadavu or riverbank in excess of the quantity fixed by the District Expert Committee.
- (8) No 'Kollivala' pole scooping or any mechanized method shall be carried out in the sand removal operation.
- (9) No sand removal shall be done where there is likelihood of saline water mixing with river water
- (10) No sand removal shall be done in a river or in any river bank where Government have expressly prohibited the same by general or special order.
- (11) The sand removal operations in a Kadavu and transportation of such sand shall be carried out, only subject to such conditions and restrictions, as may be prescribed.

#### **1.5 Squad Activity to Prevent Illegal Sand Mining**

Taluk Level Special Squads function in all taluks of Kerala and they monitor illegal sand mining 24x7 at the taluk level. There is Sub-Division Level Squad also engaged in preventing illegal mining activities. Station House Officers (SHOs) of the Police Department are vigilant against illegal sand mining activities in their jurisdiction. Vehicles used for illegal transportation of sand are being taken into custody by the squad concerned.

## *Chapter 2*

### **Sand Auditing**

The procedure to evaluate the process of sand mining in a river or part of the river after a specific period of mining to maintain the overall environmental quality of the river is Sand Auditing. The objectives of the work are: (a) To minimize the negative impacts of sand mining, (b) To maximize the health and functions of the river. Sand Auditing is a mandatory scientific exercise to be conducted in rivers once in three years as per Section 29 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 and Rule 30 of KPRBRRS Rules-2002. This chapter covers the methodology adopted for conducting Sand Auditing and its current status.

#### **2.1 Selection of River Stretch for Sand Auditing**

- i) MoEFCC Sustainable Sand Mining Management Guideline 2016 restricting the river width leaving a distance of 3 m from the river bank or 10% width of the river whichever is less for mining (p.15) shall not bode well for the Kerala rivers, as most of the rivers in Kerala have steep to vertical river banks which are unstable.
- ii) Water spread area in the river is also varying in the summer and rainy seasons.
- iii) Kerala Protection of River Banks and Regulation of Removal of Sand Act, 2001 states that sand deposits within 15 m from the riverbank should not be mined (Section 12(4))
- iv) In order to maintain the river bank stability of the reasonable slope, 8-10 m distance, concomitant to the river bank height, toward the river from either bank has to be left untouched without mining. Hence, a minimum river width of 40 m is suggested as suitable for sand mining stretches.
- v) River stretch falling within the cadastral limit with a minimum width of 40 m (bank to bank) and exhibiting a depositional morphology but excluding forest lands and Coastal Regulation Zone (CRZ) has been identified suitable for sand auditing.

#### **2.2 Three Phases in Sand Auditing**

Phase I - Resource estimation - A realistic estimation of the sand resource in a given stretch

Phase II- Resource allocation - Sustainable level of sand mining Phase

III- Performance evaluation - Evaluation of the performance of mining activities during the period of auditing

### 2.2.1 Phase I - Resource Estimation

- 1) Mapping of the river channel and associated natural/physical features (riparian vegetation, sand bars, pools, eroded banks) and manmade structures (bridges, protective embankments, dams) on a suitable scale. This aspect is already covered during the river bank mapping.
- 2) Division of the river channel into segments based on natural and administrative considerations. Natural consideration means the identification of the segment of the river channel where sand deposits are likely to be seen. It should exclude the swift-flowing mountainous segments and segments with continuous rocky bottom. The segments of the stream with significant tidal influence should also be avoided to prevent saline water ingress.
- 3) Estimation of the sand resource in the river channel using suitable methods –pitting, coring, and spiking (shallow seismic surveys in river stretch with sufficient depth and width to run the equipment, resistivity surveys in dry river beds, etc. are not suggested as it needs a higher level of technical input)
- 4) Field surveys for sand auditing should be carried out during the dry season (February - May).
- 5) Take a cross-section across the river at an interval of two times the width of the river or 100 m, whichever is less using a leveling equipment (Dumpy level, Auto Level, Theodolite, Total station, etc.) from a permanent Bench Mark (BM).
- 6) Every cross-section must be surveyed between two documented endpoints from the permanent Bench Mark (BM). GPS reading of both endpoints must be recorded. Set back a distance of 3m or 10% of the width of the river whichever is more on either bank will be left intact. All the elevations of the cross-section including the setback points should be referenced to Bench Mark (BM).
- 7) The interval between adjacent sand depth probing points within a cross-section should be 10 m or less depending on the size and morphology of sand accumulation in the river segment under investigation. A minimum of five intersection points has to be ensured in each cross-section.
- 8) Cross-sections should also be taken at the boundary of local bodies and Kadavus.
- 9) BenchMark (BM) of every cross-section should be permanent structures/permanently documented sites and it should not be any temporary objects like trees, rocks, etc. In the absence of permanent structures, new stones may be erected at least every 200m on one of the banks and GPS reading of the point should be given. BM location should be documented with

- of influence). Adding up the segment-wise volumes gives the resource for the entire river/Panchayat.
- 16) If the variation in the volume of sand between adjacent cross-sections is more than 50 %, cross-sections have to be taken in between. An in-between cross-section is justified due to the greater variation in the sand between adjacent cross-sections.
  - 17) The volume of sand available at each cross-section from above summer water level, up to 1m depth, up to 2 m depth from summer water needs to be computed separately.
  - 18) Deduct the sand deposit available in prohibited areas mentioned in Box-1.
  - 19) Cadastral map showing the river channel and adjacent plots, roads, village boundary, panchayat boundary, cross-section location, BM location, significant landmarks, existing sand mining kadavus, bathing ghats, bridges, check dams, regulators, pumping stations, water intake points, sand deposits, ecologically sensitive areas, sites of cultural/religious significance and sand mining proposed sites should be prepared and attached with the sand audit report.

**Box-1 Prohibited areas as per the Kerala Protection of River Banks and Regulation of Removal of Sand Act, 2001 & MoEFCC Guidelines on Sustainable Sand Mining, 2016**

1. No sand removal operation shall be done within 15 m of the river bank
2. No sand removal operation shall be done within a distance of 500 m from any bridges or any irrigation project or pumping station of water supply projects or check dams or from their retaining wall or the venue of any religious or cultural activities conducted on the river bank or the sand bank in river or in part of the river.
3. No sand removal shall be done where there is likelihood of saline water mixing with river water.
4. No sand removal shall be done in a river or in any river bank where Government have expressly prohibited the same by general or special order.
5. Notified biological hot spots and sensitive areas
6. Reaches with placers and other economic minerals
7. River reaches critically affected by bank sliding/slumping/bank erosion
8. Any other reach that need protection as decided by experts

Latitude and Longitude, position on the river bank, BM number, survey number, village name, and panchayat, photograph of both the BMs and cross-section site should also be attached. Elevation of the point/structure used for BM with respect to the ground level should also be clearly indicated. The top of survey stones in adjacent survey plots can be used as BM for taking cross-sections. BM level should be linked to MSL. A connection between BMs should be established through fly levels in the field.

- 10) The deepest point in every cross-section (Thalweg) should be measured and indicated in the illustration. A longitudinal profile connecting the Thalweg of entire cross-sections needs to be attached with the sand audit report.
- 11) Ascertain the summer water level in the river for each cross-section after linking (the water level of the river in the cross-section) with the groundwater level in the nearby/surrounding well/wells as far as possible. The depth/redline of sand extraction is fixed as follows: (a) If the lean summer water table in the nearby wells is at par or below the lean season water level in the river channel, then the water level in the river is deemed as the redline., (b) If the lean summer water table in the nearby wells is above the lean season water level in the river channel, the water level in the wells is deemed as the redline. In areas where canal water recharges the wells, these criteria need to be applied with appropriate modification. Latitude and longitude of the wells along with photograph and survey number/house number must be documented.
- 12) Note the thickness of the sand bed at each point by pitting, coring or spiking. The thickness of the sand bed up to 2 m depth from the summer level is to be obtained for computational purposes. However, actual river bed character and composition need to be recorded for every cross-section without fail. Depth up to 2 m has been fixed for computational purposes in view of the very precarious sand availability in Kerala Rivers.
- 13) Estimation of the mineable quantity of sand in the river channel. The mineable quantity of sand means the resource up to the redline (Point 11).
- 14) The length of the zone of influence of each cross-section is the sum of half the distance between the previous cross-section and the subsequent cross-section. eg zone of influence of cross-section no 31 is the sum of half the distance between 31 & 30 and 31 & 32.
- 15) Estimate the volume of sand up to 2 m from the water level in the river during lean flow for each segment (multiply the cross-sectional area of sand in each cross-section with the length

11	Muvattupuzha	Ernakulam	G O (MS) No. 490/15/RD 23.09.2015
12	Periyar	Idukki & Ernakulam	G O (MS) No. 232/15/RD 06.06.2015
13	Chalakydy	Thrissur	G.O (Ms) No. 111/17/RD 10.04.2017
14	Karuvannur	Thrissur	G O (MS) No. 488/15/RD 23.09.2015
15	Kechery	Thrissur	G O (Rt) No. 1471/2022/RD 31.03.2022
16A	Bharatapuzha Stretch-I	Palakkad & Thrissur	G.O (Rt) No.1906/2020/RD 25.05.2020
16B	Bharatapuzha Stretch-II	Palakkad & Thrissur	G.O (Rt) No.2882/2020/RD 16.09.2020
16C	Bharatapuzha Stretch-III	Palakkad & Malappuram	G.O (Rt) No.874/2020/RD 28.02.2020
17	Gayathripuzha	Palakkad	G.O (Rt) No.2978/2020/RD 30.09.2020
18	Kadalundi	Malappuram	G O (MS) No. 226/15/RD 06.06.2015
19	Chaliyar	Malappuram & Kozhikode	G O (MS) No. 114/16/RD 12.02.2016
20	Kuttiyadi	Kozhikode	G O (MS) No. 227/15/RD 06.06.2015
21	Kabani	Wayanad	G O (MS) No. 236/15/RD 06.06.2015
22	Anjarakandy	Kannur	G O (MS) No. 489/15/RD 23.09.2015
23	Perumba	Kannur	G.O (Rt) No.1905/2020/RD 25.05.2020
24	Valapatanam	Kannur	G.O (Ms) No.431/18/RD 15.11.2018
25	Mahe	Kannur	G.O (MS) No.384/2019/RD 24.12.2019
26	Sreekandapuram	Kannur	G.O (Rt) No.2222/2020/RD 18.06.2020
27	Vallithod	Kannur	G.O (Rt) No.3647/2021/RD 01.11.2021
28	Chandragiri (Part-1)	Kasargod	G O (MS) No. 228/15/RD 06.06.2015
29	Chandragiri (Part-2)	Kasargod	G.O (Rt) No.2223/2020/RD 18.06.2020
30	Uppala	Kasargod	G.O (Rt) No.1183/2020/RD 19.03.2020
31	Mogral	Kasargod	G.O (Rt) No.2851/2020/RD 11.09.2020
32	Shiriya and Yalkana	Kasargod	G.O (Ms) No.2364/19/RD 24.08.2019

### 2.3.1 Post-Flood Sand Auditing

In the context of the massive flood that happened in Kerala in 2018, the Government decided to Sand Audit a repeat of six flood-affected rivers as per G.O (MS) No. 254/2019/RD dated 24.01.2019. Post-flood Sand Audit of 6 flood-affected rivers was completed during 2019-2023 (Table 2).

### 2.2.2 Phase II - Resources Allocation

Allocating river sand for mining is based on the 'Sustainable Sand Mining Management Guidelines 2016' notified by the Ministry of Environment, Forest and Climate Change, Government of India in 2016.

### 2.2.3 Phase III - Performance evaluation of sand resource accounting

- Evaluation of the performance of sand mining activities during the period of Sand Auditing for the entire river or part.
- It is based on actual lowering (La) of the river bed with regard to expected lowering (Le) of river bed.
- Ideally, La and Le values must be the same
- When there is un-authorized mining  $La > Le$
- Actual lowering is obtained from cross-section measurements across the river over a period of sand auditing
- The expected river bed lowering is the permitted quantity of sand to be mined divided by the area of the segment.
- Quantity of sand mined without permit = Area x La- permitted quantity y Efforts to restore the balance of the river system

### 2.3 Present Status of Sand Auditing

Sand Audit of 32 rivers has been completed from 2012 to 2024. Details of rivers and government orders approving the Sand Audit are given in Table 1.

Table 1 List of Rivers in which Sand Audit Completed

Sl No	River	District	Government Order Approving Sand Audit Report
1	Neyyar	Thiruvananthapuram	G O (MS) No. 235/15/RD 06.06.2015
2	Karamana	Thiruvananthapuram	G O (MS) No. 317/16/RD 24.05.2016
3	Vamanapuram	Thiruvananthapuram	G O (MS) No. 234/15/RD 06.06.2015
4	Ithikkara	Kollam	G O (Rt) No. 2043/2023/RD 30.05.2023
5	Kallada	Kollam	G O (MS) No. 230/15/RD 06.06.2015
6	Kulathupuzha	Kollam	G.O. (MS) No. 67/2017/RD 04/03/2017
7	Achankovil	Pathanamthitta	G.O (Ms) No. 350/2017/RD 21.10.2017
8	Pamba	Pathanamthitta	G O (MS) No. 231/15/RD 06.06.2015
9	Manimala	Pathanamthitta & Kottayam	G.O (Rt) No.3749/2020/RD 30.11.2020
10	Meenachil	Kottayam	G O (MS) No. 316/16/RD 24.05.2016

Table 4 List of rivers in which Sand Mining Banned for Three Years

Sl No	River	District
1	Neyyar	Thiruvananthapuram
2	Karamana	Thiruvananthapuram
3	Vamanapuram	Thiruvananthapuram
4	Ithikkara	Kollam
5	Kallada	Kollam
6	Meenachil	Kottayam
7	Karuvannur	Thrissur
8	Chalakydy	Thrissur
9	Kechery	Thrissur
10	Gayathripuzha	Palakkad & Thrissur
11	Kabani	Wayanad
12	Kuttiyadi	Kozhikode
13	Vallithode	Kannur
14	Anjarakandy	Kannur
15	Chandragiri (Part-I)	Kasargod

The data generated through Sand Auditing is crucial in preparing District Survey Reports (DSR). Ministry of Environment Forest and Climate Change (MoEF&CC), Government of India has recommended the Auditing of Rivers for DSR preparation as per Enforcement and Monitoring Guidelines on Sand Mining (2020) citing the example of Sand Audit of Rivers conducted in Kerala (EMGSM-2020, page no.15).

Table 2 List of Post-flood Sand Audit Reports Approved by Government

Sl No	River	District	Government Order Approving Sand Audit Report/Remarks
1	Pamba	Pathanamthitta	G O (Rt) No. 1858/2020/RD 25.05.2020
2	Muvattupuzha	Ernakulam & Kottayam	G O (Rt) No. 945/2020/RD 05.03.2020
3	Periyar	Ernakulam & Idukki	G O (Rt) No. 1685/2020/RD 04.05.2020
4	Kadalundi	Malappuram	G O (Rt) No. 2246/2020/RD 22.06.2020
5	Chaliyar	Malappuram & Kozhikode	G O (Rt) No. 794/2020/RD 25.02.2020
6	Ithikkara	Kollam	GO(Rt)No.2043/2023/RD 30.05.2023

#### 2.4 Key Recommendations of Sand Audit Reports

Restricted Sand Mining Permitted subject to Environmental Clearance is recommended for the 16 Rivers by Sand Auditing (Table 3). As the mineable sand deposits are not available, sand mining is banned for three years in 15 rivers (Table 4)

Table 3 List of rivers with sand mining potential stretches

Sl No	River	District
1	Kulathupuzha	Kollam
2	Achankovil	Pathanamthitta
3	Pamba	Pathanamthitta
4	Manimala	Pathanamthitt & Kottayam
5	Periyar	Idukki & Ernakulam
6	Muvattupuzha	Ernakulam & Kottayam
7A	Bharatapuzha Stretch-I	Palakkad & Thrissur
7B	Bharatapuzha Stretch-II	Palakkad & Thrissur
7C	Bharatapuzha Stretch-III	Palakkad & Malappuram
8	Kadalundi	Malappuram
9	Chaliyar	Malappuram & Kozhikode
10	Perumba	Kannur
11	Valapatanam	Kannur
12	Sreekandapuram	Kannur
13	Mahe	Kannur
14	Uppala	Kasargod
15	Mogral	Kasargod
16	Shiriya-Yalkana	Kasargod
17	Chandragiri (Part-II)	Kasargod

regard. The draft DSRs submitted by CSIR-NIIST were published on the website of the District concerned for 30 days for Public Consultation. Newspaper advertisements were given to inform the public about the Public Consultation process and Sub-Divisional Committees were formed comprising (i) Sub-Divisional Magistrate, (ii) Officers from (a) Irrigation Department, (b) State Pollution Control Board, (c) Forest Department, d) Geology or Mining Officer to examine the sand mining potential sites included in the DSR. Revised DSRs thus prepared after the Public Consultation were submitted to SEIAA for approval. DSR of Malappuram, Palakkad, Thrissur, and Kollam Districts were approved by SEIAA (Table 5).

Table 5 Status of DSR Preparation in Kerala

Sl. No	Particulars	No. of Districts	Districts
1	No. of DSRs initiated	11	-
2	No. of DSRs approved by SEIAA	04	Malappuram, Palakkad Thrissur & Kollam
3	No. of DSRs under the consideration of SEIAA	02	Kannur & Kasargod
4	No. of DSRs under Public Consultation and SDC Inspection in the District	02	Pathanamthitta & Ernakulam
5	No. of DSRs with no potential sand mining sites	03	Kozhikode, Kottayam & Idukki

The draft DSRs of the Kannur and Kasargod Districts were evaluated by SEAC and DSR of Pathanamthitta and Ernakulam Districts are under the public consultation phase. The district-wise status of DSR preparation is given in Table 6.

Table 6 District-wise status of DSR Preparation

SI No.	District	Status of DSR Preparation
1	Malappuram	<ul style="list-style-type: none"> <li>Received SEIAA approval as per Letter No. 3162/A1/2021/SEIAA dated 10.01.2024.</li> <li>Final DSR published on the Website of District &amp; ILDM</li> </ul>
2	Thrissur	<ul style="list-style-type: none"> <li>Received SEIAA approval as per Letter No.</li> </ul>

*Chapter 3***Actions to Control Illegal Sand Mining (2023-2024)**

Hon'ble National Green Tribunal, Principal Bench, ND in the Judgment dated 26.02.2021 vide OA No.360/2015, 456, 726/2018 and others, ordered to take strict action against illegal, and unscientific mining of sand in the country. The Tribunal has directed all States/UTs to evolve appropriate comprehensive monitoring mechanisms with designated accountable officers, grievances redressal mechanism, envisaging strict action against violators, including assessment and recovery of compensation for the violators, seizure of vehicles, and review at high levels in the State.

Sand Mining in Kerala is controlled and regulated by the provisions of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001. River sand mining is completely handled by the State Government since 2001 and no portion of the river in the State is leased out to any private parties for sand mining. Sand Mining is done by Kadavu Committees with statutory powers under the supervision of the District Expert Committee (DEC) headed by the District Collector. In this context, the meeting held by the Chief Secretary on 20.04.2021 reviewed the compliance status of the Judgment of Hon'ble NGT in OA No.360/2015, 456, 726/2018, and other cases regarding the illegal and unscientific mining of sand from the rivers. The meeting decided to strengthen the existing system based on the directions of the Hon'ble NGT. The following steps are taken from 1<sup>st</sup> April 2023 to 31<sup>st</sup> March 2024.

**3.1 Preparation of District Survey Report (DSR)**

As per the Order of Hon'ble NGT dated 26.02.2021 in OA 360/2015 and connected cases, the District Survey Report (DSR) is to be prepared by the experts accredited by the National Accreditation Board of Education and Training/ Quality Control Council of India (NABET/QCI) in terms of O.M. of MoEF & CC dated 16.03.2010. Verification of DSR by the District Magistrate and evaluation by the SEAC and approval of SEIAA are also necessary.

The Government of Kerala has approved the proposal of CSIR-National Institute of Interdisciplinary Sciences and Technology (CSIR-NIIST), Thiruvananthapuram, the only NABET-accredited institute in Kerala on the mining sector for the preparation of District Survey Report (DSR) as per G.O (Rt) No.694/2022/RD dated 14.02.2022. Accordingly, an M.O.U has been signed between the Commissioner, Land Revenue, and CSIR-NIIST on 20.04.2022 in this

### 3.3 Procedures for Seizure and Release of Vehicles Involved in Illegal Mining

As per Rule 27 of Kerala Protection of River Banks and Regulations on Removal of Sand Rules 2002, the Procedure for confiscation of vehicles used for illegal mining and transporting of sand is as follows:

(1) The Police or Revenue officials shall seize the vehicle used for transporting sand in violation of the provisions of the KPRBRRSA-2001 and the Rules 2002.

(2) In the case of seizure of the vehicle under sub-section (1), a mahazar shall be prepared in the presence of two witnesses regarding the vehicle and one copy of the same shall be given to the person possessing the vehicle at the time of seizure and on copy to the District Collector.

(3) *The vehicle may be returned if the owner of the vehicle or the possessor remits an amount towards River Management Fund equal to the price fixed by the District Collector with fine within seven days of seizure.*

As per Rule 28 of Kerala Protection of River Banks and Regulations on Removal of Sand Rules 2002, the procedure for the Sale of the vehicle seized is as follows:

(1) The District Collector shall consider every objection submitted within seven days of seizure of any vehicle under Rule 27 and the decision of the District Collector thereon shall be final.

(2) In the case of sale of the vehicle under sub-section (1), if the fine and amount under subsection (3) of Section 27 of these rules has not been remitted, the District Collector shall sell the vehicle by auction.

(3) The amount received from the auction under sub-section (2) shall be credited to the River Management Fund after deducting the expenditure of the auction.

As per the Order of NGT dated 26.02.2021 in OA 360/2015 and connected cases, the vehicles, equipment, and excavators seized against illegal sand mining based on clause 1 will be fined as provided below:

1. Vehicles/Equipments/Excavators with showroom value of more than ₹25 lacs and less than 5 years old. – Penalty: ₹4 Lacs.

3	Palakkad	3162/A1/2021/SEIAA dated 10.05.2024. • DSRs under revision before publication.
4	Kollam	
5	Kasaragod	• Evaluation by SEAC completed (16.04.2024 - 18.04.2024) and under Revision with CSIR-NIIST.
6	Kannur	
7	Pathanamthitta	• Draft DSR under Public Consultation and Inspection of Sub-Divisional Committee in the Districts
8	Ernakulam	
9	Kozhikode	• Potential sand mining sites are not available as per the draft DSR.
10	Idukki	
11	Kottayam	

### 3.2 Designated Officers for the Seizure of Sand, Vehicles, tools, and implements used for illegal sand mining and Penalty Provisions:

Section 23 of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001 (KPRBRRSA-2001) designates an officer from the Revenue Department not below the rank of Village Officer or a Police Officer not below the rank of a Station House Officer to seize tools, implements, loading equipment's, vehicles, and other articles used or intended to be used for illegal sand mining, including sand. Based on the direction of Hon'ble NGT, the meeting held by Chief Secretary on 18.02.2022 decided to explore the steps to amend Section 23 of KPRBRRSA-2001 by additionally designating Secretaries of Local Self Governments (LSGs) and Officers of Mining and Geology Department.

As per Section 20 of KPRBRRSA-2001, whoever contravenes any of the provisions of this Act or Rules made thereunder shall, on conviction be punished with imprisonment for a term which may extend to two years or with fine which may extend to twenty-five thousand rupees or with both and in case of continuing contravention with an additional fine which may extend to one thousand rupees for every day during which such contravention continues. Kerala Legislature has amended the above provision of Kerala Protection of River Banks and Regulations on Removal of Act-2001 in 12.12.2022 and increased the penalty amount against illegal sand mining from Rs.25000/- to Rs.5,00,000/- and additional fine amount for continued contravention from Rs.1000/- per day to Rs.5000/- per day.

4	Alappuzha	NIL
5	Kottayam	NIL
6	Idukki	08
7	Ernakulam	NIL
8	Thrissur	10
9	Palakkad	06
10	Malappuram	115
11	Kozhikode	16
12	Wayanad	01
13	Kannur	72
14	Kasargod	85
<b>Total</b>		<b>327</b>

### 3.3.2 Number of Cases Registered against Illegal Sand Mining:

As part of preventing illegal mining and transport of sand, 425 cases were registered in various districts of Kerala from 01.04.2023 to 31.03.2024. The maximum number of cases were registered in Malappuram (222) followed by Kasargod (91), and Kannur (64) Districts (Table 8).

Table 8 Number of Cases Registered against Illegal Sand Mining (01.04.2023 to 31.03.2024)

SI No	Name of District	Number of Cases Registered against Illegal Sand Mining from 01.04.2023 to 31.03.2024
1	Thiruvananthapuram	0
2	Kollam	3
3	Pathanamthitta	1
4	Alappuzha	NIL
5	Kottayam	NIL
6	Idukki	8
7	Ernakulam	NIL
8	Thrissur	10

2. Vehicles/Equipments/Excavators with showroom value of more than ₹25 lacs and more than 5 years but less than 10 years old. – Penalty: ₹3 Lacs

3. For the remaining Vehicles older than 10 years/Equipments/ Excavators which are otherwise legally permissible to be operated and not covered by Serial No. 1 and 2. Penalty: ₹2 Lacs

On repetition of the offense by the same vehicle/ equipment, an Order dated 05.04.2019 will be applicable (such vehicle or equipment will be released only on the payment of 50% of the showroom value). The option of release may be available for one month from the date of seizure and thereafter, the vehicles may be confiscated and auctioned. The Government of Kerala has increased the penalty amount against illegal sand mining through Kerala Protection of River Banks and Regulations on Removal of Sand (Amendment) Act-2022 from Rupees Twenty-Five Thousand to Rupees Five Lakh, and the additional fine for the continuous violation, from Rupees Thousand per day to Rupees Five Thousand per day.

The penalty amount collected is remitted to the River Management Fund maintained by District Collectors in Treasury Accounts and is being utilized for the restoration of the river environment as per the provisions of KPRBRRSA-2001 and Rules 2002 and the direction of Hon'ble NGT.

### 3.3.1 Number of Vehicles Seized (01.04.2023 to 31.03.2024):

As part of the enforcement and prevention of illegal sand mining, 327 vehicles were seized from different districts of Kerala from 01.04.2023 to 31.03.2024 (Table 7). The maximum number of vehicles were seized from Malappuram (115) followed by Kasargod (85), and Kannur (72) districts.

Table 7 Number of vehicles seized against illegal transport of Sand (01.04.2023 to 31.03.2024)

Sl No	Name of District	Number of Vehicles Seized from 01.04.2023 to 31.03.2024
1	Thiruvananthapuram	NIL
2	Kollam	03
3	Pathanamthitta	11

13	Kannur	39
14	Kasargod	57
<b>Total</b>		<b>204</b>

### 3.3.4 Amount of Fine Levied Against vehicles used in Illegal Sand Mining:

The amount of fine levied against vehicles used in illegal transport of sand in Kerala from 2023 to 2024 was Rs. 1.96 Crore. The fine amount collected is remitted to the River Management Fund maintained by the District Collector and the same will be utilized for river restoration and riverbank protection activities. The highest amount was collected from Malappuram (Rs.1.14 Crore) followed by Kasargod (40.01 Lakh), and Kannur (29.16 Lakh) Districts (Table 10).

Table 10 Amount of fine levied against vehicles used in illegal sand mining (01.04.2023 to 31.03.2024)

Sl No	Name of District	The amount of fine levied against vehicles seized against illegal sand mining from 01.04.2023 to 31.03.2024
1	Thiruvananthapuram	NIL
2	Kollam	NIL
3	Pathanamthitta	NIL
4	Alappuzha	NIL
5	Kottayam	NIL
6	Idukki	96,600/-
7	Ernakulam	NIL
8	Thrissur	1,74,200/-
9	Palakkad	5,70,500/-
10	Malappuram	1,14,04,844/-
11	Kozhikode	3,26,750/-
12	Wayanad	1,16,300/-
13	Kannur	29,16,000/-
14	Kasargod	40,01,000/-
<b>Total</b>		<b>1,96,06,194/-</b>

9	Palakkad	NIL
10	Malappuram	222
11	Kozhikode	25
12	Wayanad	1
13	Kannur	64
14	Kasargod	91
Total		425

### 3.3.3 Number of Vehicles Released:

Of the vehicles seized against illegal transport of sand over the years, 204 vehicles were released in Kerala after levying a fine amount as per Section 27 of Kerala Protection of River Banks and Regulations on Removal of Sand Act - 2001 during 2023-24. The maximum number of vehicles were released from Malappuram (84) followed by Kasargod (57), and Kannur (39) districts (Table 9).

Table 9 Number of vehicles released after levying penalty (01.04.2023 to 31.03.2024)

SI No	Name of District	Number of vehicles released from 01.04.2023 to 31.03.2024
1	Thiruvananthapuram	NIL
2	Kollam	NIL
3	Pathanamthitta	1
4	Alappuzha	Nil
5	Kottayam	NIL
6	Idukki	3
7	Ernakulam	NIL
8	Thrissur	5
9	Palakkad	14
10	Malappuram	84
11	Kozhikode	NIL
12	Wayanad	1

### 3.4 Scale of compensation for violations of the polluter pays principle

As per Section 23A of KPRBRRSA-2001, the sand seized shall not, for any reason, be released to any person, and the same shall be subjected to confiscation under sub-section (4). The sand confiscated under Sub-Section (4) shall be sold to Nirmithi Kendra or to 'Kalavara' at such rate, as may be fixed by the Public Works Department from time to time and such amount shall be remitted to the River Management Fund. The Government of Kerala has amended this provision through Kerala Protection of River Banks and Regulations on Removal of Sand (Amendment) Act-2022 as 'the value of the sand confiscated under sub-section (4) shall be fixed by the District Collector as directed by the Government from time to time and shall sell to various institutions or individuals through auction, by following the procedures'.

As per Order of NGT dated 26.02.2021 in OA 360/2015 and connected cases, **the Scale of compensation for violations is to be calculated based on the polluter pays principle and not a mere loss of royalty.** This requires taking into account the **value of the illegally mined material and the cost of restoration of the environment.** Computing a Simplified NPV (Net Present Value) for ecological damages approach is recommended by Hon'ble NGT. NPV is the total benefits from the activity of sand mining (as represented by the market value of the extracted amount) that are deducted from the total ecological costs.

No portion of the river is leased out in Kerala, and the mining of sand from the rivers is completely handled and monitored by the State Government. Illegal sand mining reported from the rivers is not from any designated and demarcated Kadavus or authorized sand mining sites. Thus the new norm will be implemented with wider deliberations.

#### 3.4.1 Amount of Fine Collected by the Sale/Auction of Sand Seized

The Sand seized against illegal sand mining will not be released in any case as per Section 23A of Kerala Protection of River Banks and Regulations on Removal of Sand Act-2001. An amount of Rs.9.61 Lakhs was collected through the sale of confiscated sand in Kerala from 2023 to 2024. This amount is remitted to the River Management Fund utilized for river restoration and conservation programmes. The maximum fine amount was collected from Kozhikode (9.22 Lakhs) District (Table 12).

### 3.3.5 Total Penalty Amount Remitted to River Management Fund (RMF)

An amount of Rs 2.056 Crore was remitted to River Management Fund as total penalty amount against illegal sand mining including the fine against vehicles seized (Section 27 of KPRBRRSA-2001) and the fine amount as per Section 20 of KPRBRRSA-2001 during 2023-2024. The maximum penalty amount was received from Malappuram (1.14 Crore) followed by Kasargod (40.01 Lakh), Kannur (29.16 Lakh), Kozhikode (12.49 Lakh), and Palakkad (5.70 Lakh) Districts (Table 11).

Table 11 Total penalty amount remitted to River Management Fund (01.04.2023 to 31.03.2024)

SI No	Name of District	Total Penalty Amount received as income to River Management Fund for the period from 1.04.2023 to 31.03.2024
1	Thiruvananthapuram	NIL
2	Kollam	NIL
3	Pathanamthitta	NIL
4	Alappuzha	NIL
5	Kottayam	NIL
6	Idukki	96,600/-
7	Ernakulam	22,420/-
8	Thrissur	174,200/-
9	Palakkad	5,70,500/-
10	Malappuram	1,14,04,844/-
11	Kozhikode	12,49,126/-
12	Wayanad	1,33,500/-
13	Kannur	29,16,000/-
14	Kasargod	40,01,000/-
<b>Total</b>		<b>2,05,68,190/-</b>

Deputy Commissioner/District Magistrate/Collector with Superintendents of Police and other related senior functionaries (District Forest Officer, District transport officer, Regional officer-SPCBs, Senior Officer of Irrigation Department, District Mining Officer) with one/two independent member nominated by the Commissioner concerned. The independent member shall be retired government official/teacher or ex-serviceman or ex-judiciary member.

The Government of Kerala vide G.O (MS) No.1443/2023/RD dated 1.04.2023 constituted the District Level Task Force to monitor sand mining activities in the districts with the following members:

- 1) District Collector: Chairman
- 2) Core Committee Members:
  - i) Additional District Magistrate: Convener
  - ii) District Police Superintendent
  - iii) Divisional Forest Officer
  - iv) District Panchayat Secretary
  - v) Head, District Pollution Control Board
  - vi) Head, District Fire Force
  - vii) Irrigation Executive Engineer
- 3) Executive Committee Members
  - i) Any Two Tahsildars from the District
  - ii) Any two Panchayat Secretaries of the District
  - iii) Any two Sub-Inspectors of Police of the District
  - iv) Officer from the Social Forestry Department of the District
  - v) Two Environmentalists of the District

District Level Task Force (DLTF) is formed in Malappuram (22.06.2023), Kollam (01.04.2024), Kozhikode (19.08.2023), Kasargod (15.03.2024) and Thiruvananthapuram (26.07.2023) districts.

### **3.6 Enforcement of Monitoring Mechanism and Review by the Chief Secretary:**

The existing system of sand mining monitoring and enforcement was reviewed by the Chief Secretary in the high-level meeting held on 14.09.2023 and 05.02.2024. Principal Secretaries of Revenue, Law, Agriculture Departments, Member Secretary (Kerala State

Table 12 Amount of fine collected by the sale/ auction of sand seized

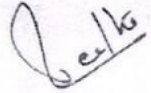
Sl No	Name of District	Amount of fine collected by the sale/ auction of sand seized against illegal sand mining from 01.04.2023 to 31.03.2024
1	Thiruvananthapuram	NIL
2	Kollam	NIL
3	Pathanamthitta	NIL
4	Alappuzha	NIL
5	Kottayam	NIL
6	Idukki	NIL
7	Ernakulam	22,420/-
8	Thrissur	NIL
9	Palakkad	NIL
10	Malappuram	NIL
11	Kozhikode	9,22,376/-
12	Wayanad	17,200/-
13	Kannur	NIL
14	Kasargod	NIL
<b>Total</b>		<b>9,61,996/-</b>

### 3.5 Formation of District Level Task Force (DLTF)

As per Section 9(c, d) of KPRBRRSA-2001 District Expert Committee (DEC) comprising officers of Revenue, Police, Water Resource, Hydrology, Mining and Geology, Local Self Government, Labour departments, and nominated environmentalists chaired by District Collector controls the mining and transportation of sand from a Kadavu or river bank to another area in the district. As per Section 11 of KPRBRRS Act-2001 Kadavu Committees shall supervise and monitor all activities of sand removal at the panchayat level.

As per the Order of NGT dated 26.02.2021 in OA 360/2015 and connected cases, State Government shall constitute a District Level Task Force (DLTF) under the Chairmanship of

Pollution Control Board), Chief Engineer (Irrigation), Director (Mining and Geology), Member Secretary (KCZMA), Land Revenue Commissioner, Director of Institute of Land and Disaster Management (ILD), were attended in these review meetings.



A.GEETHA IAS  
EXECUTIVE DIRECTOR  
ILD

.....

कार्यालय जिलाधिकारी सहारनपुर  
(खनन अनुभाग)

पत्रांक: 690/ख0अनु0/डी0एस0आर0/2024-25

दिनांक 05/07/2024

जिला सूचना विज्ञान अधिकारी  
सहारनपुर।

कृपया अवगत कराना है कि अपर निदेशक, भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0 खनिज भवन, लखनऊ के पत्र संख्या-24/डी0एस0आर0/2024 दिनांक 02.07.2024 द्वारा अवगत कराया गया है कि राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण (SEIAA) द्वारा अपने पत्र सं0 159/पर्या0/डी0एस0आर0/सहारनपुर/2024, दिनांक 07.06.2024 के माध्यम से कतिपय शर्तों के साथ प्रस्तावित डी0एस0आर0 का अनुमोदन प्रदान किया गया है जिसका कार्यवृत्त की छायाप्रति संलग्न कर राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण (SEIAA) के पत्र के शर्तानुसार आवश्यक कार्यवाही करने की अपेक्षा की गयी है।

उक्त पत्र के कम में अनुमोदित जिला सर्वेक्षण रिपोर्ट (DSR)/कार्यवृत्त को नियमानुसार पब्लिक डोमेन हेतु जिले की वेबसाईट (NIC) पर भी अपलोड किया जाना आवश्यक है।

अतः अनुमोदित जिला सर्वेक्षण रिपोर्ट (DSR)/कार्यवृत्त को नियमानुसार पब्लिक डोमेन हेतु जिले की वेबसाईट पर अपलोड करना सुनिश्चित करें।

अपर जिलाधिकारी (वि0/रा0)  
सहारनपुर।

प्रतिलिपि:—निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. निदेशक, भूतत्व एवं खनिकर्म निदेशालय उ0प्र0 खनिज भवन लखनऊ।
2. जिलाधिकारी महोदय सहारनपुर।

अपर जिलाधिकारी (वि0/रा0)  
सहारनपुर।

प्रेषक,

सदस्य सचिव,  
राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण, उ०प्र०  
विनीत खण्ड-१, गोमती नगर,  
लखनऊ।

सेवा में,

निदेशक,  
भूतत्व एवं खनिज निदेशालय, उ०प्र०  
खनिज भवन, लखनऊ।

पत्रांक 159/पवा०/डी०एस०आर०/सहारनपुर/2024

दिनांक 07 जून 2024

**विषय:** जिला सर्वेक्षण रिपोर्ट (डी०एस०आर०) के अनुमोदन के संबंध में।

महोदय,

कृपया उपर्युक्त विषयक अपने पत्र सं०-85/डी०एस०आर०, दिनांक 19-04-2024 का सन्दर्भ ग्रहण करना चाहे, जिसके साथ जनपद-सहारनपुर का ड्राफ्ट डी०एस०आर० मूल रूप में संलग्न कर आवश्यक कार्रवाई हेतु प्रेषित किया गया था।

जनपद-सहारनपुर की ड्राफ्ट डी०एस०आर० अप्रैजल हेतु राज्य स्तरीय पर्यावरण मूल्यांकन समिति (SEAC-1&2) की संयुक्त बैठक दिनांक 03-05-2024 को सूचीबद्ध था तथा जिसको राज्य स्तरीय मूल्यांकन समिति द्वारा कुछ शर्तों के साथ अनुमोदन हेतु संस्तुत किया गया। तदोपरान्त राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण (SEIAA) की 814वीं बैठक दिनांक 24-05-2024 में सहारनपुर की डी०एस०आर० अन्य शर्तों के अतिरिक्त इस शर्त के साथ अनुमोदित की गई कि:-

*SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in Lot.*

अनुरोध है कि खनन अधिकारी, सहारनपुर के ई०-मेल दिनांकित 03-06-2024 द्वारा प्रेषित इकाईयों को डी०एस०आर० में प्रतिस्थापित किया जाये।

भवदीय,

(संजीव कुमार सिंह)

सदस्य सचिव, एस०ई०आई०ए०ए०

## State Level Environment Impact Assessment Authority, Uttar Pradesh

### Directorate of Environment, U.P.

Vineet Khand-1, Gomti Nagar, Lucknow - 226 010

Phone : 91-522-2300 541, Fax : 91-522-2300 543

E-mail : doeuplko@yahoo.com

Website : www.seiaaup.com

### Minutes of the 814<sup>th</sup> Meeting of the State Level Environment Impact Assessment Authority, UP (SEIAA) held on 24-05-2024

The meeting of 814<sup>th</sup> State Level Environment Impact Assessment Authority, UP (SEIAA) was held on-line on 24.05.2024 the Directorate of Environment. The following were present in the meeting:-

1. Smt. Mamta Sanjeev Dubey
2. Shri Paras Nath
3. Shri Sanjeev Kumar Singh

Chairman, SEIAA, U.P  
Member, SEIAA, U.P  
Member Secretary, SEIAA, U.P

#### Agenda-A

#### 1. District Survey Report of Saharanpur.

SEIAA agreed with the recommendation of SEAC to approve the District Survey Report (DSR) of District- Saharanpur along with following conditions:-

1. Mining Department, UP is advised to develop a mechanism for issuing online Lol.
2. As per MoEFCC notification S. O. 141(E) dated 15.01.2016- The District Survey Report shall be prepared for each minor mineral in the district separately. Hence, DSR for each minor mineral should be submitted separately.
3. The study for mineral availability and its finding should be uploaded on District website.
4. SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in Lol.

#### **Nodal Officer**

#### **SEIAA, UP**

MoM prepared by Secretariat in consultation with  
Chairman & Members on the basis of decisions  
taken by SEIAA during the meeting

(Smt. Mamta Sanjeev Dubey)  
Chairman  
SEIAA


( Sanjeev Kumar Singh)  
Member-Secretary  
SEIAA


(Paras Nath)  
Member  
SEIAA





**UPDATED**  
**DISTRICT SURVEY REPORT (D.S.R.) – SAHARANPUR**  
**(River Bed Mining) – YEAR-2022**

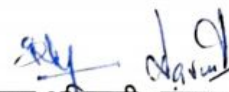
As per MoEF&CC Notification No. S.O. 141(E) Dated 15-Jan-2016, S.O. 3611 (E) dated 25-July-2018, Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining -2020.


  
 प्रभागीय निदेशक,  
 सामाजिक वानिकी प्रभाग, सहारनपुर


  
 अधिशाषी अभियंता,  
 सिंचाई निर्माण खण्ड, सहारनपुर

  
 अधिशाषी अभियंता,  
 लोक निर्माण विभाग, सहारनपुर

  
 क्षेत्रीय अधिकारी,  
 उ० प्र० प्रदूषण नियंत्रण बोर्ड,  
 सहारनपुर

  
 खान अधिकारी / संयुक्त  
 निदेशक खनन,  
 सहारनपुर

  
 उपजिलाधिकारी  
 बेहट/ नुकड़  
 सहारनपुर

  
 अपर जिलाधिकारी  
 (वि०/रा०), सहारनपुर

  
 जिलाधिकारी, सहारनपुर



## Contents of Report

<b>1.</b>	<b>Introduction</b>
<b>2.</b>	<b>Overview of Mining Activity in the District</b>
<b>3.</b>	<b>List of Mining Leases in the District with location, area and period of validity</b>
<b>4.</b>	<b>Details of Royalty or Revenue received in last three years</b>
<b>5.</b>	<b>Detail of Production of Sand or Bajri or minor mineral in last three years</b>
<b>6.</b>	<b>Process of Deposition of Sediments in the rivers of the District</b>
<b>7.</b>	<b>General Profile of the District</b>
<b>8.</b>	<b>Utilization Pattern in the district: Forest, Agriculture, Horticulture, Mining etc.</b>
<b>9.</b>	<b>Physiography of the District</b>
<b>10.</b>	<b>Rainfall: month-wise</b>
<b>11.</b>	<b>Geology and Mineral Wealth.</b>



12.	(a) District wise detail of river or stream and other sand source; (b) District wise availability of sand or gravel or aggregate resources; (c) District wise detail of existing mining leases of sand and aggregates.
13.	Drainage system with description of main rivers
	Salient Features of Important Rivers and Streams
14.	Mineral Potential
15.	Annual Deposition



## 1. Introduction

On January 15th 2016, Ministry of Environment, Forest and Climate Change, Government of India issued a notification and in which Para 7(iii) (a) and Annexure X purpose and structure of District Survey Report has been discussed. District Survey report (DSR) will be prepared in every district for each minor mineral. The District Survey Report will guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. The purpose of District Survey report (DSR) "Identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area". The District Survey report (DSR) will contain mainly data published



and endorsed by various departments and websites about Geology of the area, Mineral wealth details of rivers, Details of Lease and Mining activity in the District along with Sand mining and revenue of minerals. This report also contains details of Forest, Rivers, Soil, Agriculture, Road, Transportation and climate etc.

Further MoEF&CC has issued two Guidelines Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining - 2020 and guided that "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provision of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020" shall prevail.

Further the Hon'ble National Green Tribunal Principal Bench vide its order dated 30.05.2022 in O.A. No. 403/2022 (I.A. No. 133/2022) has directed District



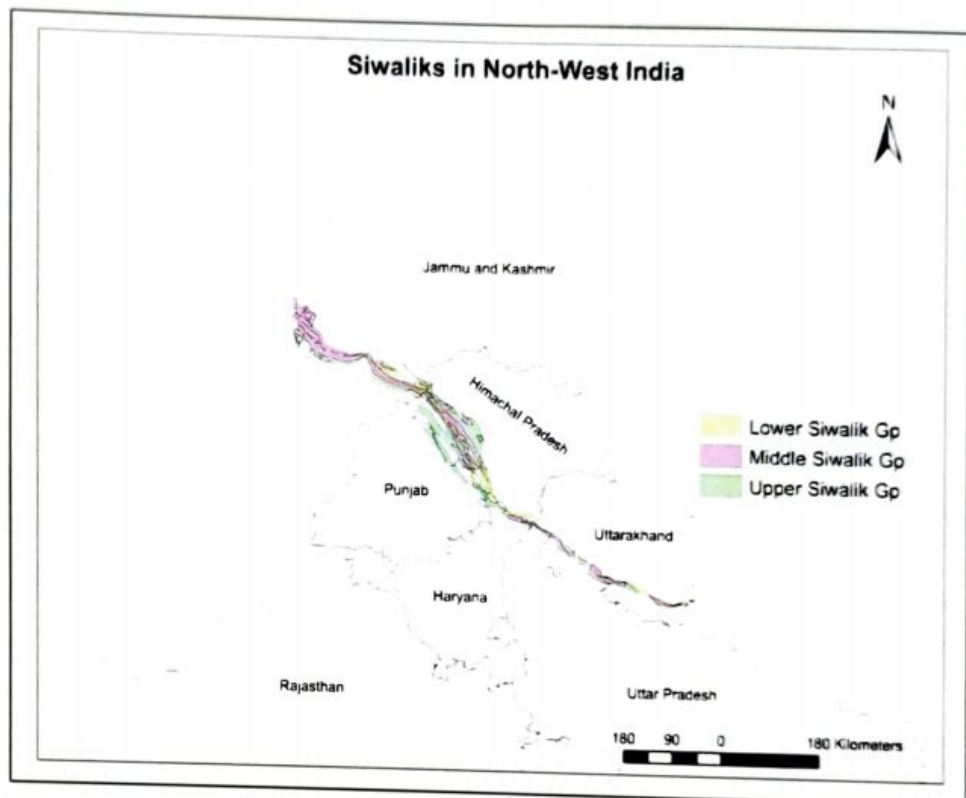
**Administration to complete replenishment study and update D.S.R.**



## 2. Overview of Mining Activity in the District

The Himalayas is the younger most mountain system of the world

which can be divided into the greater Himalayas, the lesser Himalayas and the outer Himalayas depending



on the average elevations (*Burrard & Hayden, 1907; Wadia, 1944*).

The outer Himalayas or the southernmost foothills of the Himalayas, ranging from elevations of 600-1200 m are also referred as the 'Siwaliks' (*Bose, 1972; Burrard & Hayden, 1907; Wadia, 1944*).

These hills are distributed parallel to the Himalayan hills from the Brahmaputra valley to the Potwar Plateau of Pakistan (*Krishnan, 1943*) and cover the Indian states



of Jammu and Kashmir, Punjab, Himachal Pradesh, Haryana, Uttarakhand, Uttar Pradesh and Assam (Yadav, Panwar, Arya, & Mishra, 2015).

Total of 22 leases have been identified in the District out of which 16 are located on the bank of Yamuna River which is a perennial river and has source of origin from catchment area of Shivaliks. The region has limited potential except river bed materials as Sand / Bajri / Boulders are only main exposed minerals.

Mineral potential has been observed in six rivers namely Yamuna , Badkala Ra, Badshahibagh Rao, Gaisara Rao, Kaluwala and Khairawali Ra .

Depending on the market availability the minor mineral mainly R.B.M. is sourced by local crushers and screening plants and supplied to local and nearby markets.



### 3. List of Mining Leases in the District with location, area and period of validity

Sl. No	Tehsil	River	Village	Gata No. / Khand No. / Zone No.	Area (ha.)	Pillar	Latitude	Longitude	Annual Production (cum)	Period of Validity (lease deed period)
1	Behat	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	A	30° 19' 21.41" N	77° 38' 26.35" E	69750.00	15/06/2020 to 14/06/2025
						B	30° 19' 17.62" N	77° 38' 30.56" E		
						C	30° 19' 13.68" N	77° 38' 25.07" E		
						D	30° 19' 17.44" N	77° 38' 20.78" E		
2	Behat	Yamuna	Bartha Korsi	Gata No. - 1	36.000	A	30° 14' 00.94" N	77° 31' 13.91" E	756000.00	01/04/2021 to 31/03/2026
						B	30° 14' 16.50" N	77° 31' 24.43" E		
						C	30° 14' 13.69" N	77° 31' 31.19" E		
						D	30° 14' 19.59" N	77° 31' 37.85" E		
						E	30° 14' 37.10" N	77° 31' 40.80" E		
						F	30° 14' 39.19" N	77° 31' 36.25" E		
						G	30° 14' 26.08" N	77° 31' 29.05" E		
						H	30° 14' 09.19" N	77° 31' 02.18" E		
3	Behat	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1, 19 & 22	4.200	A	30° 15' 20.64" N	77° 40' 42.10" E	94500.00	06/10/2020 to 05/10/2025
						B	30° 15' 20.54" N	77° 41' 00.42" E		
						C	30° 15' 17.98" N	77° 41' 01.84" E		
						D	30° 15' 17.71" N	77° 40' 42.89" E		
4	Behat	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	A	30° 15' 52.04" N	77° 39' 22.56" E	197500.00	09/02/2021 to 08/02/2026
						B	30° 15' 51.84" N	77° 39' 27.43" E		
						C	30° 16' 06.24" N	77° 39' 31.26" E		
						D	30° 16' 07.18" N	77° 39' 25.07" E		
5	Behat	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laot 38	24.290	A	30° 11' 00.90" N	77° 29' 25.83" E	437247.00	03.01.2022 to 02.01.2027
						B	30° 11' 12.98" N	77° 29' 12.21" E		
						C	30° 11' 24.95" N	77° 29' 26.28" E		
						D	30° 11' 21.79" N	77° 29' 29.68" E		
						E	30° 11' 20.39" N	77° 29' 33.03" E		
						F	30° 11' 18.64" N	77° 29' 33.83" E		
						G	30° 11' 17.01" N	77° 29' 34.70" E		
						H	30° 11' 14.93" N	77° 29' 32.91" E		
						I	30° 11' 09.54" N	77° 29' 31.35" E		
						J	30° 11' 03.46" N	77° 29' 29.55" E		
6	Behat	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050	A	30° 21' 36.45" N	77° 36' 05.61" E	138462.00	20/06/2020 to 19/06/2025
						B	30° 21' 29.62" N	77° 36' 00.26" E		
						C	30° 21' 37.95" N	77° 35' 50.38" E		
						D	30° 21' 41.71" N	77° 36' 02.50" E		
7	Behat	Gaisara Rao	Rahena	Gata No. 179/2	3.750	A	30° 19' 56.17" N	77° 36' 33.21" E	67500.00	06/06/2020 to 05/06/2025
						B	30° 19' 52.90" N	77° 36' 33.93" E		
						C	30° 19' 50.54" N	77° 36' 20.87" E		
						D	30° 19' 53.90" N	77° 36' 20.01" E		
8	Nukur	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863, 864, 865, 866, 867, 871, 872, 888, 889, 406, 407	52.63	A	30° 1' 20.61" N	77° 17' 23.68" E	947368.00	16/11/2019 to 15/11/2024
						B	30° 1' 24.58" N	77° 17' 15.45" E		
						C	30° 1' 32.77" N	77° 17' 19.87" E		
						D	30° 1' 42.25" N	77° 17' 24.49" E		
						E	30° 1' 41.34" N	77° 17' 31.04" E		
						F	30° 1' 52.02" N	77° 17' 39.09" E		
						G	30° 1' 54.80" N	77° 17' 51.61" E		
						H	30° 1' 56.88" N	77° 17' 52.96" E		
						I	30° 2' 2.71" N	77° 18' 5.82" E		
						J	30° 1' 59.86" N	77° 18' 8.25" E		
						K	30° 1' 57.85" N	77° 18' 7.25" E		
						L	30° 1' 58.76" N	77° 18' 5.82" E		
						M	30° 1' 57.46" N	77° 18' 4.89" E		
						N	30° 1' 57.00" N	77° 18' 1.96" E		
						O	30° 1' 53.50" N	77° 18' 0.53" E		
						P	30° 1' 47.64" N	77° 17' 52.52" E		



						Q	30° 1'42.10"N	77°17'46.53"E		
						R	30° 1'32.38"N	77°17'39.44"E		
						S	30° 1'27.11"N	77°17'31.55"E		
9	Behat	Khairawali Ra	Sherpur Pelon	403 . 404/1 . 405 . 406/1 . 416/2 . 421/1 . 422/2 . 423/2 . 424/2 . 429 and 431	6.475	A	30°16'35.16"N	77°39'44.44"E	77700.00	
						B	30°16'32.34"N	77°39'51.41"E		
						C	30°16'21.11"N	77°39'36.26"E		
						D	30°16'22.11"N	77°39'34.41"E		Vacant
10	Behat	Kaluwala	Kaluwala Pahadipur	119/1 . 120/1 . 192/1 . 193/1 . 125/4	14.900	A	30°12'08.76"N	77°45'37.77"E	178800.00	
						B	30°12'06.03"N	77°45'42.25"E		
						C	30°12'00.52"N	77°45'38.93"E		
						D	30°11'40.91"N	77°45'32.39"E		
						E	30°11'41.72"N	77°45'25.51"E		
						F	30°12'02.80"N	77°45'33.06"E		
11	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	A	30°16'27.80"N	77°32'46.96"E	322200.00	
						B	30°16'34.01"N	77°32'47.53"E		
						C	30°16'42.58"N	77°32'53.94"E		
						D	30°16'43.84"N	77°32'58.19"E		
						E	30°16'50.96"N	77°32'47.76"E		
						F	30°16'46.69"N	77°32'43.28"E		
						G	30°16'39.98"N	77°32'41.04"E		
						H	30°16'36.08"N	77°32'33.91"E		
12	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	A	30°15'51.33"N	77°32'21.84"E	248400.00	
						B	30°15'58.45"N	77°32'08.63"E		
						C	30°15'45.65"N	77°32'03.15"E		
						D	30°15'41.84"N	77°32'13.01"E		
13	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	A	30°15'24.84"N	77°31'57.01"E	234000.00	
						B	30°15'12.32"N	77°31'47.88"E		
						C	30°15'16.91"N	77°31'36.94"E		
						D	30°15'28.43"N	77°31'48.83"E		
14	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	A	30°16'14.92"N	77°32'39.76"E	172440.00	
						B	30°16'17.99"N	77°32'32.74"E		
						C	30°16'08.09"N	77°32'23.84"E		
						D	30°16'02.92"N	77°32'31.72"E		
15	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	A	30°16'02.98"N	77°32'30.74"E	282600.00	
						B	30°16'10.84"N	77°32'18.84"E		
						C	30°16'00.40"N	77°32'11.56"E		
						D	30°15'51.70"N	77°32'23.64"E		
16	Behat	Yamuna	Shahpur Bans Aehatmal	1/1	15.600	A	30°16'27.75"N	77°32'46.14"E	280800.00	
						B	30°16'16.01"N	77°32'38.50"E		
						C	30°16'20.43"N	77°32'28.70"E		
						D	30°16'35.53"N	77°32'33.20"E		
17	Behat	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700	A	30°15'25.77"N	77°31'57.79"E	318600.00	
						B	30°15'41.32"N	77°32'12.89"E		
						C	30°15'46.16"N	77°32'00.64"E		
						D	30°15'28.87"N	77°31'50.13"E		
18	Behat	Yamuna	Abutalibpur GarhAehatmal	1	37.000	A	30°14'41.78"N	77°31'38.30"E	666000.00	
						B	30°14'49.46"N	77°31'21.34"E		
						C	30°15'16.20"N	77°31'36.25"E		
						D	30°15'11.96"N	77°31'46.05"E		
19	Behat	Yamuna	Nuniyari Athmal - Khand Second	1/1/1	19.000	A	30°11'6.47"N	77°29'18.52"E	342000.00	
						B	30°11'4.27"N	77°29'16.54"E		
						C	30°10'59.70"N	77°29'14.05"E		
						D	30°10'55.77"N	77°29'10.53"E		
						E	30°10'46.29"N	77°29'4.02"E		
						F	30°10'39.87"N	77°29'0.42"E		
						G	30°10'46.96"N	77°28'51.89"E		
						H	30°10'51.56"N	77°28'56.26"E		
						I	30°10'49.46"N	77°28'58.83"E		
						J	30°11'2.30"N	77°29'11.12"E		
						K	30°11'7.26"N	77°29'5.46"E		
						L	30°11'12.52"N	77°29'11.64"E		
20	Behat	Yamuna	Aslampur Bartha - First	1/1M	36.600	A	30°13'45.87"N	77°31'09.07"E	658800.00	
						B	30°13'23.05"N	77°30'53.85"E		
						C	30°13'13.45"N	77°30'42.33"E		
						D	30°13'16.67"N	77°30'36.60"E		
						E	30°13'50.98"N	77°30'57.80"E		



21	Behat	Yamuna	Rasoolpur Urf Rasooli	I/I	34 000	A	30°12'17.09"N	77°30'18.81"E	612000.00	Vacant
						B	30°12'16.42"N	77°30'17.32"E		
						C	30°12'05.34"N	77°30'13.17"E		
						D	30°11'59.82"N	77°30'01.24"E		
						E	30°11'46.33"N	77°29'58.50"E		
						F	30°11'59.32"N	77°29'43.47"E		
						G	30°12'21.10"N	77°30'16.04"E		
22	Behat	Yamuna	Aslampur Bartha - Second	I/I M	28 160	A	30°13'04.93"N	77°30'44.59"E	506880.00	Vacant
						B	30°12'35.50"N	77°30'28.50"E		
						C	30°12'38.19"N	77°30'18.84"E		
						D	30°13'09.39"N	77°30'35.57"E		



#### **4. Details of Royalty or Revenue received in last three years.**

R.B.M. is a naturally occurring minor mineral in the district and has potential for serving the requirement of raw material for Government development projects, commercial and real estate as well as for individual needs and provides large scale direct and indirect employments.

Time to time identification of mineral exposure areas is required to control illegal mining and its safe extraction / removal is required to maintain the natural channel of rivers. Further the activity provides Royalty / Revenue to State Government.

Minerals- Minor mineral Sand, Bajri & Boulder in mixed state (also known is River Bed Material - R.B.M.) and some sand deposit areas are available in various river beds in district Saharanpur. The details of such areas has been provided in Chapter-2.

**Mineral Based industries.**

- (i) Stone Crushers**
- (ij) Screening Plants**



**Details of Royalty or Revenue received in last three years.**

<b>Financial Year</b>	<b>Revenue (In Laks)</b>
<b>2019-2020</b>	<b>3611.00</b>
<b>2020-2021</b>	<b>7488.00</b>
<b>2021-2022</b>	<b>6322.00</b>



## 5. Detail of Production of Sand or Bajri or minor mineral in last three years

- SAND

Financial Year	Production (in Cubic Meters)
2019-2020	1,99,136
2020-2021	5,17,270
2021-2022	7,17,625

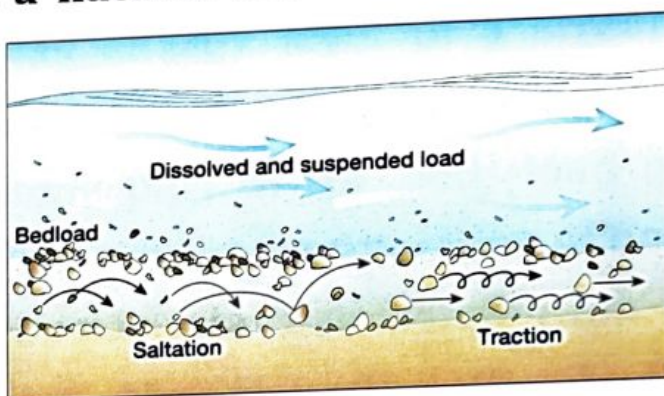
- Sand, Bajri & Boulder in mixed state (also known is River Bed Material – R.B.M.)

Financial Year	Production (in Cubic Meters)
2019-2020	2,46,950
2020-2021	4,94,796
2021-2022	9,07,789

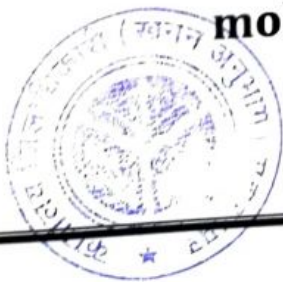


## 6. Process of Deposition of Sediments in the rivers of the District

The sediment of a river is commonly considered to be aesthetically displeasing and environmentally degrading. Conversely, part of the sediment (sand and gravel) may represent a natural resource for use by society. The potential usefulness of the sediment is enhanced when it is composed of particle sizes found in deposits on the river-bed that would be replenished by newly transported sediment after mining. As such, river deposits become renewable resources, periodically replaced by sediment transport in the river.



- **Bed-load Material:** The mixture of sediment that composes a streambed. Bed material is stationary, but particle size is important to sediment transport because as energy level of a stream increases, some bed-material particles are mobilized and become part of the bed-load or



suspended load.

- **Bed-load discharge:** A measure of the quantity (weight) of bed-load per unit time also referred to as bed-load-transport rate.
- **Bed Material:** The mixture of sediment that composes a streambed. Bed material is stationary, but particle size is important to sediment transport because as energy level of a stream increases, some bed-material particles are mobilized and become part of the bed-load or suspended load. In this report, composition of bed material is defined by particle-size distribution.
- **Suspended Sediment Material:** Usually small particles, suspended by turbulence of the flow or existing as colloids, and transported at about the same downstream velocity as the flowing water. Suspended sediment is distributed at all depths in flowing water.
- **Suspended-sediment load:** A general term referring to the quantity (weight) of suspended sediment in transport.
- **Suspended-sediment discharge:** A computed value of the quantity (weight) of suspended sediment per unit time, also referred to as suspended-



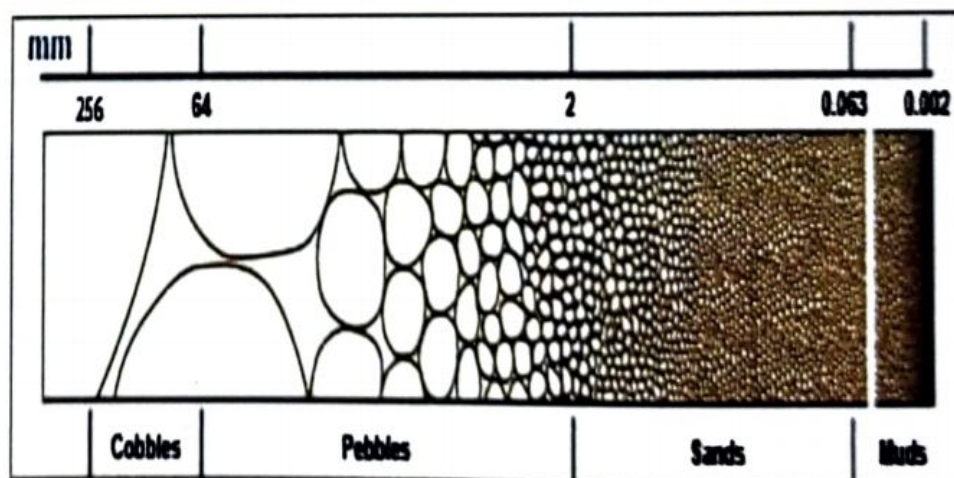
sediment transport rate.

- **Total sediment load:** The sum of bed load and suspended sediment load.
- **Total sediment discharge:** The sum of bed load discharge and suspended-sediment discharge.

District Saharanpur can be divided into three physiographic divisions, the structural hills, the upper piedmont plains or the Bhabar, and the Terai or the lower piedmont plains.

### Structural Hills:

The entire northern part of the district is formed structural



hills named Siwaliks. In this area the relief is high with steep and sharp hill slopes. The rugged topography of the area affords well for high run off. In the area the

upper and middle Siwaliks are encountered but the lower Siwaliks are missing. Lithologically the Siwaliks here are composed of sand stones, conglomerates, sand, clays and silts. There are several major and minor faults.

### **The Bhabhar:**

The second units lying just below the foothills of Siwalik locally called as Bhabhar, is characterized by boulders, pebbles, cobbles etc. with relatively dry terrains fringing. The Siwalik foot hills with gradient around 5 m/km. which is much higher than the southern plains.

Geologically the term Bhabhar is used to deposits formed along the foothill zone by coalescence of series of alluvial and talus cones, composed of heterogeneous materials ranging in texture from boulder, gravel to sand and silt. These Bhabhars in Saharanpur district are known as 'Dhar' covering mostly the 'Muzaffarabad' and 'SadauliQuadim' blocks.



### **The Tarai:**

Just south of Bhabar zone lies the 'Tarai' or the plains of piedmont plain. The plains sloping gradually by southward have around 1.5m/km. gradient. Lithologically, the area is characterized by coarse sand & gravel.

These plains are further divided into lower piedmont plains the older alluvial plains and the younger alluvial plains. The lower piedmont plains show flat to undulating plains with gradient towards southwest.

The older alluvial plains also show flat to undulating topography characterized by sediments brought by rivers Yamuna and Ganga.

The younger alluvial plains lie along river Yamuna exhibiting gently sloping and slightly undulating terrains. It comprises younger unconsolidated alluvial material of varying lithology consisting of fluvial land formed as paleo-channels, meanness scar and point bars. The younger alluvial plains also consist of sand



**bars flood plains and ravines along river Yamuna.**

*(source - CGWB NR, Lucknow Report on Aquifer Mapping & Management of Ground Water Resources, Saharanpur , Uttar Pradesh; J.P Gautam Scientist 'D')*



## 7. General Profile of the District

District Saharanpur is north-western part of Uttar Pradesh, lying between 29°34' and 30°24' N latitude and 77°07' and 77°58' E longitude falling within the survey of India toposheet nos. 53F and 53G. River Yamuna marks the western boundary of the district separating U.P. from adjoining state of Haryana. The extreme north-western part like beak structure touches with Sirmaur district of Himanchal Pradesh. In north lies Dehradun (Uttarakhand) and in the east it faces Haridwar district also being the part of Uttarakhand State. Muzaffar Nagar and Shamli districts marks southern boundary.

### Salient Features of the District -

<b>Geographical Area</b>	<b>3689 Sq/Km</b>
<b>Total Population (2011)</b>	<b>34,64,228</b>
<b>Tehsils</b>	<b>5 Tehsils (Behat, Saharanpur, Nakud, Rampur Maniharan &amp; Deo Band.)</b>



<b>Blocks</b>	<b>11 Blocks</b> <b>(Sadauli qadeem,</b> <b>Muzaffarabad, Puwarika,</b> <b>Ballia Kheri, Deoband,</b> <b>Sarsawan, Nagal, Nanuta,</b> <b>Nakud, Gangoh &amp; Rampur</b> <b>Maniharan.</b>
<b>Panchayat</b>	<b>113</b>
<b>Revenue Villages</b> <b>(201-2011)</b>	<b>1235</b>

**Saharanpur is primarily and agricultural district. Roughly 70% of the land is under agricultural use still the region is of little importance from the point of view of pastures. Agriculture plays an important role in the economy of the district. One significant feature is that even though the agricultural land for food crops has reduced in recent years the food production has increased considerably. The significance of commercial**

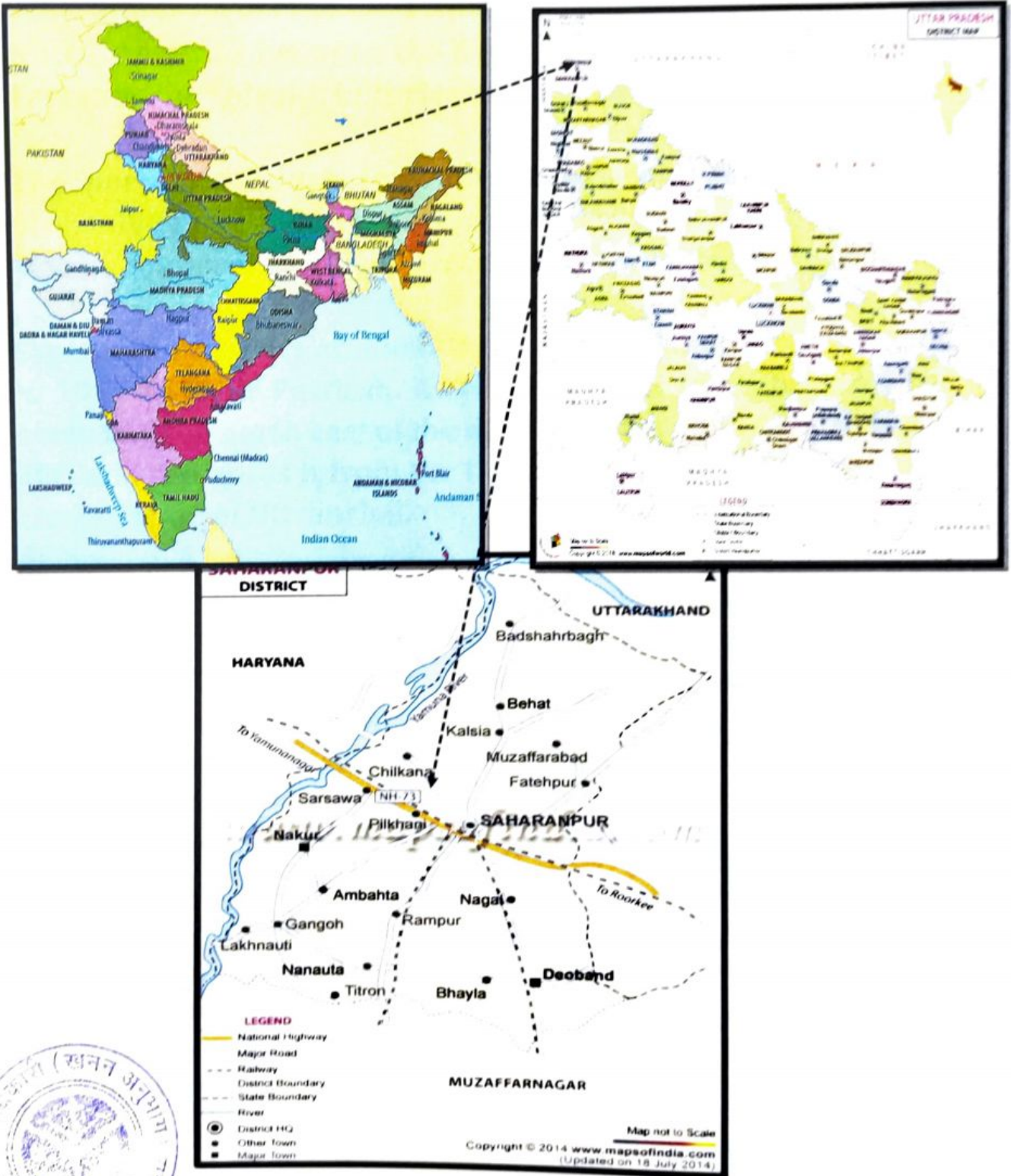


**crops have increased manifold as a consequence of sugarcane production.**

**The important food crops of the region are Wheat, Rice, Maize, Jawar, Bajara, sugarcane; oilseeds, cotton and jute are the main commercial crops**



### Location Map of District Saharanpur, Uttar Pradesh



## 9. Physiography of the District

Saharanpur forms the most northerly position of the Doab land which stretches between the holy rivers of the Ganges and the Yamuna, The Shivalik hills rise above it on the northern frontier.

The portion of Doab in which Saharanpur is situated was probably one of the first region of upper India occupied by the Aryans colonisers as they spread eastward from the Punjab.

Saharanpur district attained the status as Saharanpur division in 1997 of Uttar Pradesh. As regards its physical features the north and the north east of the district is surrounded by Shivalik hills and separates it from the Dehradun district in the recently created state of Uttranchal.

The river Yamuna forms its boundary in the west which separates it from Karnal and Yamunanagar districts of Haryana. In the East lies the district of Haridwar which was the part of district Saharanpur before 1989 and in the south lies the district Muzafarnagar.

At the time of the British Rule District Muzafarnagar was also a part of district Saharanpur. The district is in a rectangular shape and it lies between 29 degrees 34 minutes 45 seconds and 30 degrees 21 minutes 30 seconds north latitude and 77 degrees 9 minutes and 78 degrees 14 minutes 45 seconds east longitude. Its total area is 3860 square Kilometers.



The district presents many varieties of features and differs in general appearance than any other portion of the Doab and Gangetic plain as a whole. It is true that most of the area belongs to the upland Bangar which stretches in a continuous line up to Allahabad i.e. Junction of the two great rivers and on the either side is the broad and low lying valley full of swamps and back waters with wide open grass plains and Tamarisk jungle but in the north, There are the steep hills of Shivalik chain which appear in a far more marked form in Saharanpur than any other district of Uttar Pradesh while below the hills are to be seen in a modified form the prevailing characteristics of the Bhabar and Tarai region.

The main characteristics of the district can be divided into four parts.

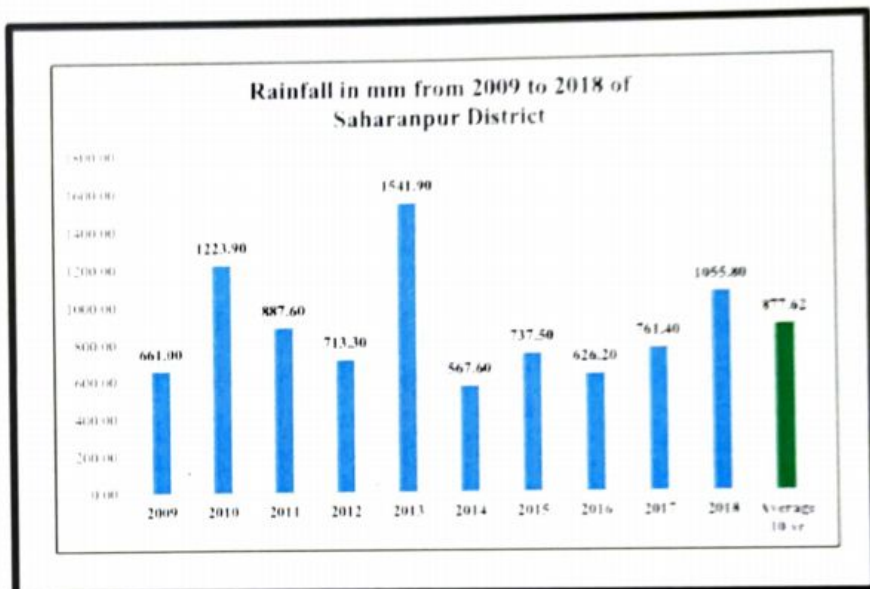
1. Shivalik Hill Tract
2. The Bhabar Land
3. Bangar Land
4. Khadar Land (Yamuna, Hindon)

Yamuna is the important river of the district. Apart from this Solani, Hindon, Ratmau, Nagdev have also played an important role in the physical reconstruction of the district. All the rivers of the district submerge either in Yamuna or in the Ganges.



## 10. Rainfall: Month Wise

The average annual rainfall (Year 1951-2000) in the district is 963.9 mm. About 80% of rainfall takes places from June to September. During monsoon surplus water is available for deep percolation to ground water. The climate is sub humid and it is characterized by general dryness except in the brief period during the monsoon season. Summer is hot and winter is pleasant cold season. There is a meteorological observatory at Meerut, which may be taken as representative of meteorological condition. May is the hottest month. The mean daily maximum temperature is about 40°C, mean daily minimum temperature is about 24°C and maximum temperature some time rises to 44°C. With the onset of southern monsoon by the end of June, there is appreciable drop in temperature. January is the coldest month with mean daily temperature at



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about 200C and mean daily minimum at 70C. The air is dry during the major parts of the year. In south-west monsoon season, the air is very humid and April and May are usually driest months. The mean monthly relative humidity is 67%. The mean wind velocity is 6.70 Km/h. The potential evapo- transpiration is 1545.90 mm.

#### Rainfall Data (mm) of Saharanpur District, U.P. (2009-2018)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2009	0.0	30.6	0.0	0.0	0.0	0.0	128.0	243.0	254.5	0.0	0.0	4.9	661.0
2010	8.3	20.0	0.0	0.0	19.3	28.3	462.0	285.3	399.7	0.0	0.0	1.0	1223.9
2011	0.0	32.7	13.3	9.0	64.0	295.7	191.7	154.9	126.3	0.0	0.0	0.0	887.6
2012	10.3	1.7	3.3	18.3	2.0	4.0	153.0	349.6	162.3	0.0	0.0	8.8	713.3
2013	93.4	163.1	0.0	0.0	0.0	311.0	376.0	434.7	67.0	72.0	0.0	24.7	1541.9
2014	65.0	52.2	32.3	9.4	12.7	20.0	147.0	67.3	107.0	32.7	0.0	22.0	567.6
2015	17	18	108	18.6	8.7	51.7	233.9	189.7	75.3	7.3	9.3	0	737.5
2016	0	5	18.3	5	58.7	46.9	275.7	204.3	8.3	4	0	0	626.2
2017	48.3	3.3	6.7	9.0	1.0	184.1	132.3	182.0	192.0	0.0	0.0	2.7	761.4
2018	2.0	10.3	3.7	15.3	11.3	113.9	449.7	262.5	151.1	34.3	0.7	1.0	1055.8
AVERAGE	24.4	33.7	18.6	8.5	17.8	105.6	254.9	237.3	154.4	15.0	1.0	6.5	877.6

#### Summary of Rainfall Data:-

Year / Duration	Average Annual Rainfall (mm)
(Year 1951-2000) - 50 years	963.90
(Year 2009-2018) - 10 years	877.62
(Year (2020))	973.10

(Source CGWB - Ground Water Year Book, Uttar Pradesh 2020-2021 released on December - 2021 and its past editions)



## 11. Geology and Mineral Wealth

Geologically, the area consists of sandstone, claystone and conglomerate of Siwalik Group of Pliocene to Early Pleistocene in age and unconsolidated sand, silt and clay represented by Older and Newer Alluvium of Middle Pleistocene to Holocene in age. Siwalik Group in this area is divisible into two formations i.e. Middle Siwalik consisting mainly of sandstone and Upper Siwalik consisting of conglomerate. The rocks of the Siwalik Group are folded and faulted and override the Alluvium along the Foot Hill Thrust (concealed). The Siwalik rocks have been recorded up to a depth 4170m. The Alluvium may be differentiated into Older Alluvium, consisting of oxidized (brown, yellow and khaki color) sediments, and Newer Alluvium comprising unoxidised (grey and khaki color) sediments. In Saharanpur district Varanasi Alluvium of Pleistocene age represents Older Alluvium. The Varanasi



Alluvium contains polycyclic sequence of micaceous sand, silt, and clay with occasional kankar layers. The Newer Alluvium of Holocene age is divisible into Fan Alluvium, Terrace Alluvium and Channel Alluvium. Fan Alluvium overlies the Varanasi Alluvium and comprises gravel beds and coarse sand with minor silt and clay. Sequence of gravel, sand and silt occupying Terrace along Ganga and Yamuna rivers, comprises constitute Channel Alluvium. Loose gravel, sand of point- and-channel-bars and sand-silt offlood plain, of rivers, constitute Channel Alluvium.

Geomorphologically, the terrain of Saharanpur lying between Ganga and Yamuna rivers is differentiated into Low Structural Hills, to the north, and Ganga plain, to the south. Low Structural Hills (sub-Himalaya), constituting a narrow zone with elevations of 500m to 1000m above mean sea level trend NW -SE, has high drainage density and ruggedness index. The Ganga plain lying to the south contains Upland and Lowland. The Upland with elevations of 200m to 500m above



mean sea level slopes southward, occupies interfluves and is divisible into Varanasi Plain and Alluvial Fan. Alluvial Fan can be distinguished into a northern rugged, gravelly ground with straight incised streams, commonly known as Bhabhar, and a southern undulating, silty ground with shallow sluggish streams, generally known as Tarai. The Tarai merges with Varanasi Plain.

The ground of Varanasi Plain is silty to sandy with relict fluvial features. The Lowland, separated from Upland by 5 to 25 m bluffs, contains one to two levels of Terrace Plain and Channel Plain. Riverbed and its flood plain make Channel Plain.

In Saharanpur resources of land and water are in Ganga and Yamuna drainage basins. Ganga and Yamuna originate from Himalaya and are gravelly to sandy, braided, snow fed and perennial rivers. Spring and groundwater fed streams/rivers originating from foothills are Solani, Hindon, Sahansra Rao, Ratmau Rao, Budhi, Yamuna, Kali and Krishnai.



Surface water -streams, Tals and canals (Ganga and Yamuna channel systems)- and groundwater found in sand layers (aquifers) sustain domestic and irrigation needs. Groundwater occurs in a four-tier aquifer system under water table and confined conditions.

Aggregate/construction material is excavated from Channel Alluvium, Fan Alluvium deposit and upper Siwaliks. River water of major rivers is tamed and utilized for human sustenance.

Alluvium, Alluvial Fan and sub-Himalaya belt of soft to moderately hard sedimentaries constitute geotechnical provinces of Saharanpur. Bhabhar part of the Fan is not suitable for settlement. Landslides in hills, gully erosion in Bhabhar, bank erosion by Ganga and Yamuna in Floods affecting terraces are hazards of Saharanpur district.

## **DISTRICT RESOURCE MAP – GEOLOGY AND MINERALS**






12.	(a) District wise detail of river or stream and other sand source; (b) District wise availability of sand or gravel or aggregate resources; (c) District wise detail of existing mining leases of sand and aggregates.
13.	Drainage system with description of main rivers Salient Features of Important Rivers and Streams
14.	Mineral Potential
15.	Annual Deposition


*In compliance to Serial Number 12, 13, 14 & 15 the pre-monsoon and Post-Monsoon-2022 replenishment study report of District Saharanpur has been prepared in con conformity to Enforcement & Monitoring Guidelines for Sand Mining -2020.*


*The summarized results of replenishment study for the period of Pre and Post- Monsoon, 2022 is as under:-*








  
 प्रभागीय निदेशक,  
 सामाजिक वानिकी प्रभाग, सहारनपुर


  
 अधिशाषी अभियंता,  
 सिंचाई निर्माण खण्ड, सहारनपुर

  
 अधिशाषी अभियंता,  
 लोक निर्माण विभाग, सहारनपुर

  
 क्षेत्रीय अधिकारी,  
 उ० प्र० प्रदूषण नियंत्रण बोर्ड,  
 सहारनपुर

   
 खान अधिकारी / संपुक्त  
 निदेशक खनन  
 सहारनपुर

  
 उपजिलाधिकारी  
 बेहट/ नुकड़  
 सहारनपुर

  
 अपर जिलाधिकारी  
 (वि०/रा०), सहारनपुर

  
 जिलाधिकारी, सहारनपुर



## Annexure-4

Item No.1

(Court No. 2)

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH**

Original Application No. 403/2022  
(I.A. No.133/2022)  
(By Video Conferencing)

Daljeet Singh

Applicant

Versus

State of Uttar Pradesh &amp; Ors.

Respondents

Date of hearing: 30.05.2022

**CORAM: HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER  
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER**

Applicant: Mr. Ajit Sharma & Mr. Mayank Aggarwal, Advocates

**ORDER**

1. The applicant has filed present applicant under Section 14 read with Section 18 of the National Green Tribunal Act, 2010 seeking following reliefs:

- a. Issue directions to the State of Uttar Pradesh to conduct a replenishment Study of all rivers in District Saharanpur, U.P. and prepare a fresh District Survey Report in compliance with vc the EMGSM 2020 after duly considering the results of the Replenishment Study;*
- b. Quash and set-aside the District Survey Report for District Saharanpur prepared in 2017 in violation of the MoEF Notification dt.15.01.2016, the SSMG 2016 and other applicable laws;*
- c. Issue directions quashing and declaring the amended District Survey Report, 2021 dt. 03.12.2021 and all consequent actions for auction and/or grant of mining leases in District Saharanpur, U.P. as illegal, arbitrary, null and void being issued in violation of EMGSM 2020, MoEF Notification dt 15.01.2016, SSMG 2016 and other applicable laws and mandatory guidelines; and/or*
- d. Issue an ex-parte ad-interim stay on the amended District Survey Report, 2021 dt. 03.12.2021;*

*e. Direct and restrain the State of Uttar Pradesh from auction and/or grant of mining leases in District Saharanpur, U.P. and further restrain the Respondents from granting mining leases in pursuance of the impugned District Survey Report during the pendency of the present Original Application; and/or*

*f. Direct Respondents to pay the costs of the present Application to the Applicant; and*

*g. Pass any other order that this Hon'ble Tribunal may deem fit."*

2. The applicant has submitted that DSR 2021 has been issued by District Magistrate, Saharanpur on 03.12.2021 for mining of minor mineral RBM in District Saharanpur, Uttar Pradesh. Hon'ble Supreme Court vide order dated 10.11.2021 passed in Civil Appeal No. 3661-3662 titled as State of Bihar Vs. Pawan Kumar reiterated the need and importance of DSR and directed strict adherence to the procedure and parameters laid down in EMGSM, 2020 for preparation of the DSR. The impugned DSR 2021 has been issued without complying with mandatory requirement of conducting replenishment study by the State Government. The respondent has issued tender for conducting of replenishment study in District Saharanpur on 01.01.2022. The impugned DSR is liable to be set aside also because the mining area is inter-district Yamuna Nagar and Saharanpur and inter-state Haryana and Uttar Pradesh and DSR 2021 has been prepared without complying with the procedure provided under point no. 9.03 of EMGSM, 2020. No mining lease can be granted in District Saharanpur, Uttar Pradesh in pursuance of impugned DSR 2021 before completion of replenishment study and updation of DSR.

3. We have heard learned Counsel for the applicant and gone through the relevant record.

4. The averments made in the petition raise substantial questions relating to environment arising out of the implementation of the enactments specified in Schedule-I to the National Green Tribunal Act, 2010 and illegality of the proposed action of the respondents.
5. Let notices be issued to respondents requiring them to file replies specifically responding to all material averments made in the application within two months.
6. The applicant is directed to take requisite steps for service of notices on the respondents and file affidavit regarding the same by email at [judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) within seven days.
7. List for further consideration on 26.08.2022.
8. In the meanwhile no lease shall be granted and also no mining shall be commenced in any of the mining sites in District Saharanpur, Uttar Pradesh before completion of replenishment study, updation of DSR and grant of environmental clearance/CTE/CTO on the basis thereof in accordance with SSMG, 2016 and EMGSM, 2020.
9. A copy of this order along with copy of application and documents sent therewith be sent to respondents no. 3, 4, 6, 8, 9 and 10.

Arun Kumar Tyagi, JM

Dr.Afroz Ahmad, EM

May 30, 2022  
O.A. No. 403/2022  
AG

Item No. 07

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI**

**(By Hybrid Mode)**

Original Application No. 403/2022  
(I.A. No. 133/2022, I.A. No. 13/2023 &  
I.A. No. 19/2023)

Daljeet Singh

Applicant

Versus

State of Uttar Pradesh &amp; Ors.

Respondent(s)

Date of hearing: 25.01.2023

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON  
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER  
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: Mr. Ajit Sharma, Advocate for Applicant

Respondent(s):

Mr. Mukesh Verma, Advocate for the Mining Department, State of  
UP  
Ms. Priyanka Swami, Advocate for SEIAA, UP

**ORDER**

1. Grievance in this application is against submission of District Survey Report dated 03.12.2021 by the District Magistrate, Saharanpur to the Director, Geology and Mines, U.P. Main ground against the said report is that it has been submitted without replenishment study of the river in terms of Enforcement & Monitoring Guidelines for Sand Mining, 2020 (EMSGM, 2020).

2. Vide order dated 30.05.2022, notice was issued and interim injunction was granted against grant of any mining lease before completing replenishment study.

3. Reply has been filed by the Mining Department, U.P to the effect that replenishment study had been conducted prior to the Draft Survey Report for Saharanpur River Bed Mining 2022. The DSR is at draft stage and is yet to be finalized.

4. In view of above, no further order is necessary.

The application is disposed of. All IAs also stand disposed of.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

January 25, 2023  
Original Application No. 403/2022  
(I.A. No. 133/2022, I.A. No. 13/2023 &  
I.A. No. 19/2023)  
AB

कार्यालय जिलाधिकारी सहारनपुर  
(खनन अनुभाग)

पत्रांक: 1223 / ख0अनु0 / ई निविदा-कमेटी / 2021

दिनांक 02/05/ अप्रैल, 2022

कार्यालय आदेश

जनपद सहारनपुर में अधिकांश खनन क्षेत्र युमना नदी में स्थित हैं। सभी उपखनिज के खण्ड एक दूसरे से सटे हैं जिसकी संख्या 16 है, तथा खैरावली रॉ, बादशाही बाग रॉ, बडकला रॉ, गैसरा रॉ, कालूवाला रॉ में 06 उपखनिज के क्षेत्र उपलब्ध हैं। सभी नदियां साथ ही आरा पास ही स्थित जिसमें कुल उपखनिज के खनन क्षेत्रों की संख्या 22 है। नदी तल में उपलब्ध 22 खनन क्षेत्रों ग्राम अकरवपुर वांस अहतमाल, आराजी लेवही अहतमाल व मसूदपुर गढ़ अहतमाल, शहजादपुर वांस अहतमाल, अलाउद्दीनपुर वांस अहतमाल, महमूदपुर नगली अहतमाल, शाहपुर वांस अहतमाल, अयुतालिबपुर गढ़ अहतमाल, नित्यानन्दपुर अहतमाल व सैदमौहम्मदपुर गढ़ अहतमाल, शेरपुर पेलों, कालूवाला पहाड़ीपुर नुनियारी अहतमाल खण्ड-द्वितीय, असलमपुर बरथा रसूलपुर उर्फ रसूली असलमपुर बरथा, नुनियारी अहतमाल खण्ड-प्रथम, फैजाबाद खण्ड-प्रथम व फैजाबाद खण्ड -द्वितीय की पुनः पूर्ति अध्ययन (Replenishment Study) कराये जाने हेतु उपखनिज बालू, बजरी बोल्टर (मिश्रित अवस्था में), RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश-2016 और एमओईएफएंडसीसी द्वारा प्रकाशित रेत खनन-2020 के लिए प्रवर्तन और निगरानी दिशा निर्देशों के अन्तर्गत उक्त क्षेत्रों की पुनः पूर्ति अध्ययन (Replenishment Study) किये जाने के निर्देश प्राप्त हुए हैं।

जनपद-सहारनपुर में नदी तल में उपलब्ध बालू, बजरी, बोल्टर (मिश्रित अवस्था में) RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश -2016 और MoEF&CC द्वारा प्रकाशित Enforcement & Monitoring Guideline For Sand Mining-2020 के निर्देशों के अन्तर्गत क्षेत्रों का पुनः पूर्ति अध्ययन (Replenishment Study) हेतु जिला स्तर पर अपर जिलाधिकारी (वि0/रा0) की अध्यक्षता में प्रभागीय वनाधिकारी अथवा (नामित अधिकारी), लोक निर्माण विभाग व सिंचाई विभाग से संबंधित अधिशासी अभियन्ता एवं क्षेत्रीय अधिकारी, उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड, खान अधिकारी जनपद सहारनपुर को जनपद में उपलब्ध 22 क्षेत्रों की पुनः पूर्ति अध्ययन (Replenishment Study) किये जाने हेतु निम्न समिति का गठन किया जाता है:-

- |  |           |
|--|-----------|
| 1. अपर जिलाधिकारी (वि0/रा0), सहारनपुर                          | (अध्यक्ष) |
| 2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर             | (सदस्य)   |
| 3. अधिशासी अभियन्ता, सिंचाई निर्माण खण्ड, सहारनपुर             | (सदस्य)   |
| 4. अधिशासी अभियन्ता, लोक निर्माण विभाग, सहारनपुर               | (सदस्य)   |
| 3. क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, सहारनपुर | (सदस्य)   |
| 4. खान अधिकारी, सहारनपुर                                       | (सदस्य)   |

उक्त समिति पुनः पूर्ति अध्ययन (Replenishment Study) को अन्तिम रूप प्रदान कर अपनी संस्तुति सहित जिलाधिकारी के समक्ष प्रस्तुत करेगी।

जिलाधिकारी  
सहारनपुर

पत्रांक व दिनांक:- उपरोक्तानुसार।

प्रतिनिधि-निम्नलिखित को सूचनार्थ एवं अग्रिम कार्यवाही हेतु प्रेषित।

1. अपर जिलाधिकारी (वि0/रा0), सहारनपुर।
2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर।
3. अधिशासी अभियन्ता, सिंचाई निर्माण खण्ड, सहारनपुर।
4. अधिशासी अभियन्ता, लोक निर्माण विभाग, सहारनपुर।
5. क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, सहारनपुर।
6. खान अधिकारी, सहारनपुर।

जिलाधिकारी  
सहारनपुर

# Annexure-6

## POST-MONSOON REPLENISHMENT STUDY RESULTS

### TABLE No. - PM/001

PRE-MONSOON - 2022 RESULT										POST MONSOON RESULT				Replenished Quantity		Expected Life of Mine (in Years)		
Sl / Nonoperative	Teshil	Minor Mineral	River	Village	Gata/Khandl/Zone	Area (in Ha.)	Max Elevation	Min Elevation / Zero Level	Elevation Difference	DRONE REPORT - Reserve	Max Elevation	Min Elevation / Zero Level	Elevation Difference	DRONE REPORT - Reserve	Replenishment	Avg. New Height	Expected Life of Mine (in Years)	
1	Nonoperative	Behat	R.B.M.	Khurvali Ra	Sherpur Pelon	403, 404/1, 405, 406/1, 416/2, 421/1, 422/2, 423/2, 424/2, 429 and 431	6.475	375.859	360.100	15.759	229913	377.840	360.109	17.731	206339	66426	1.03	3.81
2	Nonoperative	Behat	R.B.M.	Kaluwala	Kaluwala Pahadpur	119/1, 120/1, 192/1, 193/1, 125/4	14.900	385.520	358.833	26.687	359485	385.730	359.112	26.610	489924	130439	0.88	2.74
3	Nonoperative	Behat	R.B.M.	Yamuna	Akbarpur Bans Acharnal	1	17.900	319.090	307.100	11.990	248739	319.057	308.100	10.957	734189	483430	2.71	2.28
4	Nonoperative	Behat	R.B.M.	Yamuna	Anaz Jevad, Acharnal and Missoolpur Garh Acharnal	1 and 1	13.800	313.546	302.000	11.546	412595	319.036	302.818	16.218	532136	119541	0.87	2.14
5	Nonoperative	Behat	R.B.M.	Yamuna	Shechhadpur Bans Acharnal	1	13.000	310.605	301.990	8.615	383857	312.585	302.563	10.022	572385	188528	1.45	2.45
6	Nonoperative	Behat	R.B.M.	Yamuna	Alauddingpur Bans Acharnal	1/1	9.580	311.562	303.990	7.572	145022	312.715	303.99	8.725	480573	335551	3.50	2.79
7	Nonoperative	Behat	R.B.M.	Yamuna	Mehnoodpur Nangli Acharnal	1	15.700	319.060	303.100	15.960	528459	319.259	303.237	16.022	709508	181049	1.15	2.51
8	Nonoperative	Behat	R.B.M.	Yamuna	Shadpur Bans Acharnal	1/1	15.600	320.461	306.980	13.481	351410	321.442	306.286	15.156	495837	144427	0.93	1.77
9	Nonoperative	Behat	R.B.M.	Yamuna	Nityandpur Acharnal and Said-mohammadpur Acharnal	1 and 1na	17.700	311.392	296.859	14.533	593005	311.403	297.159	14.244	921464	328459	1.86	2.89
10	Nonoperative	Behat	R.B.M.	Yamuna	Ahucalibpur Garh Acharnal	1	37.000	307.806	298.200	9.606	1217817	308.291	297.116	11.175	2201614	983797	2.66	3.31
11	Nonoperative	Behat	R.B.M.	Yamuna	Nunyari Acharnal - Khand Second	1/1/1	23.200	288.593	281.874	6.719	519716	290.173	281.874	8.299	745130	225414	0.97	1.78
12	Nonoperative	Behat	R.B.M.	Yamuna	Astampur Bartha - First	1/1/1	36.600	306.747	292.100	14.647	1250795	309.568	292.056	17.512	1665116	414321	1.13	2.53
13	Nonoperative	Behat	R.B.M.	Yamuna	Rasoolpur Dh Rasooli	1	34.000	295.824	286.839	8.985	897564	298.059	286.839	11.220	1262495	364931	1.07	2.06
14	Nonoperative	Behat	R.B.M.	Yamuna	Asampur Bartha - Second	1/1/1	28.160	300.106	288.120	11.986	726618	300.668	289.023	11.645	952019	225401	0.80	1.88
1	Operative	Behat	R.B.M.	Barkshubhagh Rao	Miyapur Rooppur	Gata No. 14/1	3.100	394.662	388.980	5.682	92993	395.331	389.971	5.360	99888	6895	0.22	2.69
2	Operative	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000	302.492	292.200	10.292	173732	303.601	292.200	11.401	874358	700626	1.95	1.35
3	Operative	Behat	R.B.M.	Barkhala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1, 19 & 22	4.200	377.000	368.000	9.000	143893	377.380	367.496	9.884	158576	14683	0.35	3.15
4	Operative	Behat	R.B.M.	Khurvali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	355.000	349.000	6.000	206037	355.444	349.38	6.064	218664	12627	0.18	2.60
5	Operative	Behat	R.B.M.	Yamuna	Nunyari Acharnal	Gata No. - 1/1/1, Lam 38	24.290	294.000	284.000	10.000	607313	296.203	284.652	11.551	966952	359639	1.48	2.21
6	Operative	Behat	R.B.M.	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No. - 03	8.050	356.665	345.100	11.565	195089	358.565	345.816	12.749	266664	71575	0.89	2.76
7	Operative	Behat	R.B.M.	Gaisara Rao	Rahena	Gata No. 179/2	3.750	357.739	351.120	6.619	111795	357.431	351.681	5.750	119047	7252	0.19	2.65
8	Operative	Nukur	Sand	Yamuna	Dhikan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863, 864, 865, 866, 867, 871, 872, 888, 889, 406, 407	52.630	276.669	261.100	15.569	26767	278.005	261.100	16.905	782116	755349	1.44	0.83

Total Study Area (in ha.) **422.635**

\* all outcrop/elevated contours of set upto 1 meter above the Min recorded elevation to record Net Reserves

प्रभाकर/निदेशक, सारनगर (सदस्य) *06/11/2022*

अभिषेक/अभिधी, सारनगर (सदस्य) *06/11/2022*

अशिशु/अभिधी, सारनगर (सदस्य) *06/11/2022*

शैली/अभिधी, सारनगर (सदस्य) *06/11/2022*

सोन/अभिधी, सारनगर (सदस्य) *06/11/2022*

अपर/अभिधी, सारनगर (अध्यक्ष) *06/11/2022*

वित्त/अभिधी, सारनगर (सदस्य) *06/11/2022*

**POST-MONSOON REPLENISHMENT STUDY RESULTS**  
**TABLE No. - PM/001**

PRE-MONSOON - 2022 RESULT										POST MONSOON RESULT			Replenished Quantity		Expected Life of Mine (in Years)			
Sl.	Operative / Nonoperative	Teshil	Minor Mineral	River	Village	Gate/Khand/Zone	Area (in Ha.)	Max Elevation	Min Elevation /Zero Level	Elevation Difference	DRONE REPORT - Reserve	Max Elevation	Min Elevation /Zero Level	Elevation Difference	DRONE REPORT - Reserve	Replenishment	Avg. New Height	Expected Life of Mine (in Years)
1	Nonoperative	Behat	R.B.M.	Khurwah Ra	Shepur Pelon	403, 404/1, 405, 406/1, 416/2, 421/1, 422/2, 423/2, 424/2, 429 and 431	6.475	375.859	360.100	15.759	229913	377.840	360.109	17.731	296339	66426	1.03	3.81
2	Nonoperative	Behat	R.B.M.	Kalwaha	Kalwaha Pahadpur	119/1, 120/1, 192/1, 193/1, 125/4	14.900	385.520	358.833	26.687	359485	385.730	359.12	26.610	489924	130439	0.88	2.74
3	Nonoperative	Behat	R.B.M.	Yamuna	Akbarpur Bans Acharnal	1	17.900	319.090	307.100	11.990	248739	319.057	308.100	10.957	734189	485450	2.71	2.28
4	Nonoperative	Behat	R.B.M.	Yamuna	Arazi Jevadi Acharnal and Masoodpur Gah Acharnal	1 and 1	13.800	313.546	302.000	11.546	412595	319.036	302.818	16.218	532136	119541	0.87	2.14
5	Nonoperative	Behat	R.B.M.	Yamuna	Shehadpur Bans Acharnal	1	13.000	310.605	301.990	8.615	383857	312.585	302.563	10.022	572385	188528	1.45	2.45
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9	Nonoperative	Behat	R.B.M.	Yamuna	Nirvanandpur Acharnal and Said-mohammadpur Acharnal	1 and 1na	17.700	311.392	296.859	14.533	593005	311.403	297.159	14.244	921464	328459	1.86	2.89
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11	Nonoperative	Behat	R.B.M.	Yamuna	Nunpur Ahmal - Khand Second	1/1/1	23.200	288.593	281.874	6.719	519716	290.173	281.874	8.299	745130	225414	0.97	1.78
12	Nonoperative	Behat	R.B.M.	Yamuna	Aslampur Bartha - First	1/1/M	36.600	306.747	292.100	14.647	1250795	309.568	292.056	17.512	1665116	414321	1.13	2.53
13	Nonoperative	Behat	R.B.M.	Yamuna	Rasoolpur Lift Rasooli	1	34.000	295.824	286.839	8.985	897564	298.059	286.839	11.220	1262495	364931	1.07	2.06
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1	Operative	Behat	R.B.M.	Badshahbagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	394.662	388.980	5.682	92993	395.331	389.971	5.360	99888	6895	0.22	2.69
2	Operative	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000	302.492	292.200	10.292	173732	303.601	292.200	11.401	874358	700626	1.95	1.35
3	Operative	Behat	R.B.M.	Badshah Ra	Haudapur Hindwala	Khand No / Gata No. - 8/1, 19 & 22	4.200	377.000	368.000	9.000	143893	377.380	367.496	9.884	158576	14683	0.35	3.15
4	Operative	Behat	R.B.M.	Khurwah Ra	Shepur Pelon	Gata No. - 378/2 & 379/2	7.000	355.000	349.000	6.000	206037	355.444	349.38	6.064	218664	12627	0.18	2.60
5	Operative	Behat	R.B.M.	Yamuna	Nunpur Acharnal	Gata No. - 1/1/1 Laa 38	24.290	294.000	284.000	10.000	607313	296.203	284.652	11.551	966952	359639	1.48	2.21
6	Operative	Behat	R.B.M.	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No. - 03	8.050	356.665	345.100	11.565	195089	358.565	345.816	12.749	266664	71575	0.89	2.76
7	Operative	Behat	R.B.M.	Gausara Rao	Rahena	Gata No. 179/2	3.750	357.739	351.120	6.619	111795	357.431	351.681	5.750	119047	7252	0.19	2.65
8	Operative	Nukur	Sand	Yamuna	Dhukkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863, 864, 865, 866, 867, 871, 872, 888, 889, 406, 407	52.630	276.669	261.100	15.569	26767	278.005	261.100	16.905	782116	755349	1.44	0.83
Total Study Area (in ha.)							422.635											

\* all outcrop/dewaxed contours of set upto 1 meter above the Min recorded elevation to record Net Reserves

प्रशासक निदेशक,  
सहायक प्रशासक, सहायक निदेशक,  
(सदस्य)

अधिकाारी,  
सहायक निदेशक,  
(सदस्य)

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सहायक निदेशक,  
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सहायक निदेशक,  
(सदस्य)

अधिकाारी,  
सहायक निदेशक,  
(सदस्य)

अधिकाारी,  
सहायक निदेशक,  
(सदस्य)

## Annexure-7

## State Level Environment Impact Assessment Authority, Uttar Pradesh

## Directorate of Environment, U.P.

Vineet Khand-1, Gomti Nagar, Lucknow - 226 010

Phone : 91-522-2300 541, Fax : 91-522-2300 543

E-mail : docuplko@yahoo.com

Website : www.sciaaup.com

**Minutes of the 685<sup>th</sup> Meeting of the State Level Environment Impact Assessment Authority, UP (SEIAA) held on 31.12.2022**

The meeting of 685<sup>th</sup> State Level Environment Impact Assessment Authority, UP (SEIAA) was held on-line on 31.12.2022 at the Directorate of Environment. Dr. Rajeev Garg, Chairman SEIAA did not participate and the following were present in the meeting:-

- |                           |                              |
|---------------------------|------------------------------|
| 1. Shri Paras Nath        | Member, SEIAA, U.P           |
| 2. Shri Ajay Kumar Sharma | Member Secretary, SEIAA, U.P |

685<sup>th</sup> State Level Environment Impact Assessment Authority, UP (SEIAA) meeting was convened and conducted in reference to the letter no. 1591/81-7-2022 dated 26-12-2022 of Department of Environment Forest and Climate Change, UP.

**Discussion on Validity Extension of ECs of Sand/morrum/river bed material mining based on the replenishment study as per Hon'ble NGT order.**

SEIAA gone through the letter of DGM, UP letter no1368/M-228/2017 khananniti (VIII) dated 27-12-2022, letter no.1381/M-228/2017 khananniti (VIII) dated 30-12-2022 addressed to MS SEIAA in which it is mentioned as follows ..... "प्रदेश के विभिन्न जनपदों में स्थित नदी तल के बालू/मोरम के खनन क्षेत्रों के replenishment Study का कार्य भारत सरकार की संस्था सी०एम०पी०डी०आई० द्वारा पूर्ण कर लिया गया है।" SEIAA also gone through the E-mail dated 31-12-2022 of DGM UP and progress statement on the scientific sand replenishment study being carried out by CMPDI vide letter no- CMPDI/BDD/E-760656/I-16525 dated 30-12-2022 for 26 districts (25+1) and Rivers- Ken, Betwa, Yamuna, Gandak Ghaghra, Ganga, Tauns Bhaghain Son, Rapti, Paisuni, Dahsan Mangour, UR. Saprar, Sukhanai, Belan.

SEIAA agrees to extend the validity of the ECs of the concerned leases (of Districts Chitrakoot, Fatehpur, Kaushambi, Hamirpur, Jalaun, Jhansi, Sonebhadra, Shaharanpur, shamli, Baghpat, Ghaziabad, G.B. Nagar, Prayagraj, Mirzapur, Chanduli, Faizabad, Ambedkarnagar, Gorakhpur, Santkabir nagar, Siddharth Nagar, Gonda, Basti, Bahraich, Kanpur Nagar, Kanpur Dehat, Banda ) for the period of one year, if the reported production is equal to or less than the production capacity mentioned in original/valid ECs. In case the proponent/DGM aspires to mine additional mineral (Based on the replenishment report) then the proponent has to submit a fresh application. It will be the responsibility of the Mining Department to ensure that no

A

Minutes of the 685<sup>th</sup> Meeting of the SEIAA held on 31 .12.2022

mining is carried out beyond the quantity mentioned in the replenishment study report validated by mining department.

Rest all the conditions mentioned in the original EC shall remain same.

SEIAA opined that details of leases shall be provided by the Mining department at the earliest and secretariat shall place the details before SEIAA in the Next Meeting.

Assistant Nodal/Nodal Officer  
SEIAA, UP

MoM prepared by Secretariat in consultation with  
Chairman & Members on the basis of decisions  
taken by SEIAA during the meeting



(Ajay Kumar Sharma)  
Member-Secretary  
SEIAA

(Paras Nath)  
Member  
SEIAA

## Annexure-8

Item No. 07

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI****(By Hybrid Mode)**Original Application No. 403/2022  
(I.A. No. 133/2022, I.A. No. 13/2023 &  
I.A. No. 19/2023)

Daljeet Singh

Applicant

Versus

State of Uttar Pradesh &amp; Ors.

Respondent(s)

Date of hearing: 25.01.2023

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON  
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER  
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: Mr. Ajit Sharma, Advocate for Applicant

Respondent(s): Mr. Mukesh Verma, Advocate for the Mining Department, State of  
UP  
Ms. Priyanka Swami, Advocate for SEIAA, UP**ORDER**

1. Grievance in this application is against submission of District Survey Report dated 03.12.2021 by the District Magistrate, Saharanpur to the Director, Geology and Mines, U.P. Main ground against the said report is that it has been submitted without replenishment study of the river in terms of Enforcement & Monitoring Guidelines for Sand Mining, 2020 (EMSGM, 2020).

2. Vide order dated 30.05.2022, notice was issued and interim injunction was granted against grant of any mining lease before completing replenishment study.

3. Reply has been filed by the Mining Department, U.P to the effect that replenishment study had been conducted prior to the Draft Survey Report for Saharanpur River Bed Mining 2022. The DSR is at draft stage and is yet to be finalized.

4. In view of above, no further order is necessary.

The application is disposed of. All IAs also stand disposed of.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

January 25, 2023  
Original Application No. 403/2022  
(I.A. No. 133/2022, I.A. No. 13/2023 &  
I.A. No. 19/2023)  
AB

## Annexure-9

Item No. 03 &amp; 04

(Court No. 1)

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI**

(By Video Conferencing)

Original Application No. 140/2021

(With report dated 31.03.2022)

Raj Kumar

Applicant

Versus

State of U.P. &amp; Ors.

Respondent(s)

**WITH**

Original Application No. 141/2021

Ramkaran Karn

Applicant

Versus

State of U.P. &amp; Ors.

Respondent(s)

Date of hearing: 06.05.2022

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON  
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER  
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: Mr. Vanshdeep Dalmia, Advocate

Respondent: Dr. Roshan Jacob, Secretary, Geology & Mining with Mr. Pradeep Misra,  
Advocate for the State of Uttar Pradesh & UPPCB**ORDER**

1. Grievance in these two identical applications is against illegal mining. In O.A. No. 140/2021, mining is in the submerged water area at Gata No. 28 (Part) and 29, Khand No. 1, village Kanwara, District Banda, UP by M/s Durge Trading Company and in O.A. No. 141/2021 it is in the submerged water area at Gata No. 2/4, 2/23, 2/24 and 2/28, Khand No. -4, village-Bendakhadar, District Banda, UP by Ashish Kumar Gautam,

S/o Suresh Kumar Gautam. Common stand in both the matters is that the mining is in violation of Sustainable Sand Mining Management Guidelines (SSMMG), 2016 and Enforcement and Monitoring Guidelines for Sand Mining (EMGSM), 2020 and binding orders of this Tribunal, including order dated 30.05.2017 in O.A. No. 78/2015 (CZ) reported in 2017 SCC OnLine NGT 1097, holding as follows: -

***“In the light of the above, we answer the question that has been referred to us that no river sand mining is permitted in the submerged area in accordance with the Sustainable Sand Mining Guidelines 2016 alternatively in so far as the issue whether it can be permitted in the submergence areas is concerned our answer to the same is that in submergence area which may be a wider area than the one actually submerged as a submergence area would encompass the full reservoir level of the river or the high flood level of the river recorded by in any case where the mineral is exposed and not in stream such sand mining in accordance with the Sand Mining Guidelines 2016 and the conditions imposed in the environmental clearance may be carried out.”***

2. Further order of this Tribunal relied upon by the applicants is order dated 26.02.2021 in O.A. No. 360/2015, NGT Bar Association v. Virender Singh (State of Gujarat) and other connected matters. Therein, on exhaustive review of the issues relating to sand mining, this Tribunal has issued directions, including the mechanism for enforcement of environmental norms, inter-alia as follows:-

“1to26..xxx.....xxx.....xxx

**27. We direct all the States/UTs to strictly follow the SSMG-2016 read with EMGSM-2020 reinforced by mechanism for preparation of DSRs (in terms of directions of this Tribunal dated 14.10.2020 in Pawan Kumar, supra and 04.11.2020 in Rupesh Pethe, supra), Environment Management Plans, replenishment studies, mine closure plans, grant of EC (in terms of direction dated 13.09.2018 in Satendra Pandey, supra), assessment and recovery of compensation (as per discussion in Para 25), seizure and release of vehicles involved in illegal mining (in terms of order dated 19.02.2020 in Mushtakeem, supra), other safeguards against violations, grievance redressal, accountability of the designated officers and periodical review at higher levels. As already noted,**

**EMGSM-2020 contemplates extensive use of digital technology, including remote sensing.**

**28. We further direct that periodic inspection be conducted by a five-members Committee, headed and coordinated by the SEIAA and comprising CPCB (wherever it has regional office), State PCB and two expert members of SEAC dealing with the subject. Where CPCB regional office is not available, if MoEF&CC regional office is available, its Regional Officer will be included in the Committee. Where neither CPCB nor MoEF&CC regional office exists, Chairman, SEIAA will tie up with the nearest institution of repute such as IIT to nominate an expert for being included in the Committee. Such inspection must be conducted at least thrice for each lease i.e. after expiry of 25% the lease period, then after 50% of the period and finally six months before expiry of the lease period for midway correction and assessment of damage, if any. The reports of such inspections be acted upon and placed on website of the SEIAA. Every lessee, undertaking mining, must have an environment professional to facilitate sustainable mining in terms of the mining plan and environmental norms. This be overseen by the SEIAA. Environment Departments may also develop an appropriate mobile App for receiving and redressing the grievances against the sand mining, including connivance of the authorities and also a mechanism to fix accountability of the concerned officers. Recommendations of the Oversight Committee for the State of UP quoted earlier may be duly taken into account.**

**The mechanism must provide for review at the level of the Chief Secretary at least once in every quarter, in a meeting with all concerned Departments in the State. The Chief Secretary UP may ensure further action in the light of the report of the Oversight Committee.**

**Similarly, at National level, such review needs to be conducted atleast once in a year by the Secretary, Environment in coordination with the Secretaries Mining and Jalshakti Ministries the CPCB."**

3. It is submitted that no steps are being taken by the State of UP for compliance of directions of this Tribunal.
4. Vide order dated 02.07.2021 on consideration of the matter, the Tribunal directed Additional Chief Secretary, Mining, UP to furnish a report about the compliance status including the status of DSR and replenishment studies for Banda District and also in-stream mining in submerged water and monitoring mechanism.

5. The matter was last considered on 08.03.2022 and finding that no response was being filed by the Additional Chief Secretary, Mining, Uttar Pradesh, the Tribunal directed personal appearance of the ACS, Mining by V.C. and also directed the District Magistrate and State PCB to file a factual report. If anything, adverse was noticed, the PP was to be put to notice of these proceedings.

6. In pursuance of above, the ACS, Mining, UP is present in person by V.C. and report has been filed by the District Officer, Banda on 31.03.2022 as follows:

“xxx .....xxx.....xxx

10. *That for Environmental impact assessment (E.I.A.) study ministry of environment and forest and climate change (MoEF&CC) has propounded Sustainable sand mining management guidelines 2016 and enforcement and monitoring guidelines for sand mining 2020. In compliance of this Guidelines Government of Uttar Pradesh has issued a Government order no 790(1)/86-2020 dated 01.06.2020. As per this Government order, Government of Uttar Pradesh has constituted a team of officials of Department of Geology and Mining, Revenue Department, Forest Department and Irrigation Department, who give recommendation for any new area to be included or any change in D.S.R.(District survey report). Till November 2022 a total of 296 areas has been added in District survey report (D.S.R.) in different districts of Uttar Pradesh.*

*That in district Banda after proper study of replacement of Sand/Morrum on the areas the District Survey Report' (herein after referred as DSR) was prepared and loaded on District Administration Portal and objection of the public domain were also invited and after considering the objection the DSR finalised by the committee constituted by the Government of Uttar Pradesh on 23.11.2017.*

11. *That in Compliance of Hon'ble NGT order dated 02.07.2021 OA no. 140/2021 Raj Kumar Versus State of UP and OA no. 141/2021 Ram Karan karn Versus State of UP, D.M Banda has authorised C.M.P.D.I (Central mine planing and Design Institute limited), a public sector enterprise of Government of India to do the replenishment study of rivers flowing in district Banda on dated 28.10.2021 C.M.P.D.I has started the replenishment study of rivers of banda district and the work is on progress. Its report will be soon provided to the hon'ble NGT.*

The copy of the order of D.M Banda dated 11.10.2021 and consent letter of C.M.P.D.I dated 19.10.2021 being annexed herewith as Annexure No.1, to this compliance report.

12. That if the bid found to be highest and satisfactory per cubic metre then a letter of intent is issued in favour of such bidder and thereafter, the applicant should obtain approval on its mining plan and environmental clearance from the competent authority and thereafter the mining lease is executed in his favour.
13. That in the lease deed, the following terms are specifically mentioned:-
  - i. The mining operations are to be carried only up to the depth of 3 metres, or up to the water level, whichever is less;
  - ii. The safety zone should be worked out;
  - iii. The mining operations will be done in accordance with the scheme mentioned in the Mining Plan;
  - iv. The lessee will be bound to obey the terms and conditions of the environmental clearance;
  - v. The mining will be done after sun-rise till sun-set;
  - vi. In the monsoon season, no mining will be done;
  - vii. Heavy machinery and Suction Machines will not be used for excavation of the mineral;
  - viii. No temporary bridge or hinderance will be created in the flow of river water during the lease period;
  - ix. That the Central Government framed Sustainable Sand Mining Management Guidelines 2016 with object of managing un-controlled sand mining in India.
14. That the Ministry of Environment, Forests & Climate Change, Government of India also framed Enforcement and monitoring Guidelines for Sand Mining in January 2020.
15. That list of mining leases, granted in District Banda for excavation of sand & morrum, at present, is being annexed herewith as Annexure No.2, to this compliance report.
16. That at the time, total 17 mining leases are in operation in Banda district and they have proper environmental clearances, as well as the consent issued by UPPB Lucknow under the provisions of "Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention Control of Pollution) Act, 1981."
17. That in compliance of the order dated 26.02.2021, passed by this Hon'ble Tribunal in O.A. No.360 of 2015 (National Green Tribunal Bar Associations. Veerendra Singh (State of Gujarat & others), 5 members Committee has been constituted by the District Officer, Banda, vide office order No.2892/Khanij-30 Banda, dated 14.12.2021. In the said Monitoring Committee, the members as under:

1. Divisional Forest Officer, Banda Chairman
2. Mines Officer/Mines Inspector/ Surveyor, Mines Department, Banda Member
3. Executive Engineer, Irrigation & Water Resources department, Banda- Member
4. Concerned Tehsildar Member
5. Regional Officer, Pollution Control Board, Banda Member Secretary.

A copy of the said office order dated 14.12.2021 issued by the District Officer, Banda, is being annexed herewith as Annexure No.3, to this compliance report.

18. That the said Enforcement Committee is regularly watching the mining activities of 17 areas and if any lessee is found to violate the above mentioned terms and conditions, then after issuing the notice, necessary proceedings are initiated against him.
19. That in the Headquarters, Lucknow, as well as in the districts, Surveillance Systems have also been installed for prevention of over-loading of minerals, as well as without transit passes, and due to this so many electronic challans are automatically created and served on the lessees for recovery of Government dues of such mineral.
20. That this Hon'ble Tribunal has also directed for submission of the status report of the following sand, morrum areas

S. No.	Area	Status
a)	Khand No.1 Village Kanwara, Banda M/s Durga Trading Co.	mining activities are not being done by the lessee due to preparation of approach road
b)	Khand No.4 Village Banda Khadar, District Banda Ashish Kumar Gautam, S/o Shri Suresh Kumar Gautam	matter is pending before the Hon'ble Supreme court. (Ravi kumar vs State of U.P. Dairy No. 3177/2022) No mining activities are being done.

7. A report has also been filed on 06.04.2022 by the Geology and Mining Department, UP which is by and large similar to the report of the District Officer, Banda referred to above.
8. We have heard learned Counsel for the Applicants and interacted with the ACS present in person by VC.

9. We find that replenishment study as required under the SSMG-2016 and EMGSM-2020 has not been undertaken prior to the auction in terms of para 5.1 of the EMGSM, 2020 which is reproduced below:

#### **"5.0 REPLENISHMENT STUDY**

*The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessing sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverine regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on instream biota and riparian habitats. It is assumed that the riparian habitat disturbance is minimum if the replenishment is equal to excavation for a given stretch. Therefore, to minimize the adverse impact arising out of sand mining in a given river stretch, it is imperative to have a study of replenishment of material during the defined period.*

#### **5.1 Generic Structure of Replenishment Study**

*Initially replenishment study requires four surveys. The first survey needs to be carried out in the month of April for recording the level of mining lease before the monsoon. The second survey is at the time of closing of mines for monsoon season. This survey will provide the quantity of the material excavated before the offset of monsoon. The third survey needs to be carried out after the monsoon to know the quantum of material deposited/replenished in the mining lease. The fourth survey at the end of March to know the quantity of material excavated during the financial year. For the subsequent years, there will be a requirement of only three surveys. The results of year-wise surveys help the state government to establish the replenishment rate of the river. **Based on the replenishment rate future auction may be planned.***

*The replenishment period may vary on nature of the channel and season of deposition arising due to variation in the flow. Such period and season may vary on the geographical and precipitation characteristic of the region and requires to be defined by the local agencies preferable with the help of the Central Water Commission and Indian Meteorological Department. The excavation will, therefore, be limited to estimated replenishment estimated with consideration of other regulatory provisions."*

10. With regard to the allegation of instream mining in submerged water, it has been orally stated by the ACS that no such instream mining is permitted. However, in the reports filed before this Tribunal, no such statement has been made on behalf of the State.

11. Accordingly, the ACS, Mining, UP has fairly stated that replenishment study will be conducted prior to auctions in future and with regard to the current leases, ongoing replenishment study will be expedited. In the light thereof, the leases will be renewed, if necessary. Such studies for all Districts in UP will be completed by December 31, 2022 and for Banda by June 30, 2022. She has further stated that the allegation of instream mining will be verified and if found true, the same will be discontinued.

12. In view of above, let the Replenishment studies be completed by credible institutions, following due procedure, in accordance with para 5 of EMSG, 2020. Further, no mining be permitted till replenishment studies are completed beyond the schedule laid down above. The State may ensure that the Regulatory authorities are adequately equipped and capable to assess quantities of mined material. With regard to instream mining, it may be ensured that the machineries permitted or used otherwise comply with "Semi mechanised" mining operations in true sense. In all mining potential districts, environmental damage assessment be carried out and annual assessment reports placed in public domain on the websites of the Mining Department as well as the PCB. Compliance of SSMG, 2016 and EMGSM, 2020 and earlier directions of this Tribunal may be ensured by an effective monitoring mechanism.

The applications are disposed of accordingly.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

May 06, 2022  
Original Application No. 140/2021  
Original Application No. 141/2021  
DV

## Annexure-10

16

**[Sections 5 to 13] not to apply to minor minerals.**

14. The provisions of sections 5 to 13 (inclusive) shall not apply to quarry leases, mining leases or other mineral concessions in respect of minor minerals.

**Power of State Governments to make rules in respect of minor minerals**

15. (1) The State Government may, by notification in the Official Gazette, make rules for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals and for purposes connected therewith.
- (1A) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:-
- (a) the person by whom and the manner in which, applications for quarry leases, mining leases or other mineral concessions may be made and the fees to be paid therefor;
  - (b) the time within which, and the form in which, acknowledgement of the receipt of any such applications may be sent;
  - (c) the matters which may be considered where applications in respect of the same land are received within the same day;
  - (d) the terms on which, and the conditions subject to which and the authority by which quarry leases, mining leases or other mineral concessions may be granted or renewed;
  - (e) the procedure for obtaining quarry leases, mining leases or other mineral concessions;
  - (f) the facilities to be afforded by holders of quarry leases, mining leases or other mineral concessions to persons deputed by the Government for the purpose of undertaking research or training in matters relating to mining operations;
  - (g) the fixing and collection of rent, royalty, fees, dead rent, fines or other charges and the time within which and the manner in which these shall be payable;
  - (h) the manner in which the rights of third parties may be protected (whether by way of payment of compensation or otherwise) in cases where any such party is prejudicially affected by reason of any prospecting or mining operations;

- (i) the manner in which the rehabilitation of flora and other vegetation, such as trees, shrubs and the like destroyed by reasons of any quarrying or mining operations shall be made in the same area or in any other area selected by the State Government (whether by way of reimbursement of the cost of rehabilitation or otherwise) by the person holding the quarrying or mining lease;
  - (j) the manner in which and the conditions subject to which, a quarry lease, mining lease or other mineral concession may be transferred;
  - (k) the construction, maintenance and use of roads, power transmission lines, tramways, railways, aerial ropeways, pipelines and the making of passage for water for mining purposes on any land comprised in a quarry or mining lease or other mineral concession;
  - (l) the form of registers to be maintained under this Act;
  - (m) the reports and statements to be submitted by holders of quarry or mining leases or other mineral concessions and the authority to which such reports and statements shall be submitted;
  - (n) the period within which and the manner in which and the authority to which applications for revision of any order passed by any authority under these rules may be made, the fees to be paid therefor, and the powers of the revisional authority; and
  - (o) any other matter which is to be, or may be prescribed.
- (2) Until rules are made under sub-section (1), any rules made by a State Government regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals which are in force immediately before the commencement of this Act shall continue in force.
- (3) The holder of a mining lease or any other mineral concession granted under any rule made under subsection (1) shall pay royalty or dead rent, whichever is more in respect of minor minerals removed or consumed by him or by his agent, manager, employee, contractor or sub-lessee at the rate prescribed for the time being in the rules framed by the State Government in respect of minor minerals:

Provided that the State Government shall not enhance the rate of royalty or dead rent in respect of any minor mineral for more than once during any period of three years.

# Annexure-11

## State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.

Vineet Khand 1, Gomti Nagar, Lucknow - 226 010

Phone : 91-522-2300 541, Fax : 91-522-2300 543

E-mail : docupkoe@yahoo.com

Website : www.seiaaup.com

### Minutes of the 814<sup>th</sup> Meeting of the State Level Environment Impact Assessment Authority, UP (SEIAA) held on 24-05-2024

The meeting of 814<sup>th</sup> State Level Environment Impact Assessment Authority, UP (SEIAA) was held on-line on 24.05.2024 the Directorate of Environment. The following were present in the meeting:-

- |                             |                              |
|-----------------------------|------------------------------|
| 1. Smt. Mamta Sanjeev Dubey | Chairman, SEIAA, U.P         |
| 2. Shri Paras Nath          | Member, SEIAA, U.P           |
| 3. Shri Sanjeev Kumar Singh | Member Secretary, SEIAA, U.P |

#### Agenda-A

#### 1. District Survey Report of Saharanpur.

SEIAA agreed with the recommendation of SEAC to approve the District Survey Report (DSR) of District- Saharanpur along with following conditions:-

1. Mining Department, UP is advised to develop a mechanism for issuing online Lol.
2. As per MoEFCC notification S. O. 141(E) dated 15.01.2016- The District Survey Report shall be prepared for each minor mineral in the district separately. Hence, DSR for each minor mineral should be submitted separately.
3. The study for mineral availability and its finding should be uploaded on District website.
4. SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in Lol.

Nodal Officer

SEIAA, UP

M/M prepared by Secretariat in consultation with Chairman & Members on the basis of minutes taken by SEIAA during the meeting

(Smt. Mamta Sanjeev Dubey)  
Chairman  
SEIAA

( Sanjeev Kumar Singh)  
Member-Secretary  
SEIAA

(Paras Nath)  
Member  
SEIAA