2025 INSC 1025

REPORTABLE

IN THE SUPREME COURT OF INDIA
CIVIL APPELLATE JURISDICTION

CIVIL APPEAL NO. 8055 OF 2022

UNION TERRITORY OF J & K (PREVIOUSLY STATE OF JAMMU & KASHMIR) & ANR. ...APPELLANT(S)

VERSUS

RAJA MUZAFFAR BHAT & ORS. ...RESPONDENT(S)

WITH

CIVIL APPEAL NO. 68 OF 2023

WITH

CIVIL APPEAL NO. OF 2025
@ DIARY NO(S). 1007 OF 2025

J U D G M E N T

Contents

1. Introduction of the issue:

1. In *State of UP v. Gaurav Kumar*[1], we have declared that a valid and subsisting District Survey Report[2] is mandatory for grant of environmental clearance[3] for sand mining. We have also annulled certain environmental clearances, even though recommended by District Expert Appraisal Committee[4] and granted by District Level Environment Impact Assessment Authority[5], on the basis that a 'draft DSR' is untenable[6] in law. In this appeal we take a step further. District Survey Reports are prepared under para 7(iii) of EIA notification dated 15.01.2016[7] following the mandatory procedure laid down in Appendix X read with Sustainable Sand

[1] 2025 SCC OnLine SC 1069.
[2] Hereinafter, "DSR".
[3] Hereinafter, "EC".
[4] Hereinafter, "DEAC".
[5] Hereinafter, "DEIAA".
[6] State of UP v. Gaurav Kumar, 2025 SCC OnLine SC 1069.
[7] Issued under Environment (Protection) Act, 1986.

Mining Management Guidelines, 2016[8] and Enforcement and Monitoring Guidelines for Sand Mining, 2020[9]. The purpose and objective of preparing such District Survey Report is to scientifically locate the place for sand mining after *calculation of annual rate of replenishment for allowing mining in the area.*

2. Just as forest conservation requires assessment of tree growth rate before permitting timber harvesting to ensure that felling of trees does not exceed tree growth, a replenishment study enables us to take an informed decision as to whether sand mining can be permitted without degrading the rivers' natural balance. Importance of *replenishment study* is explained in the Sand Mining Guidelines 2020 as follows:

> "*The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessive 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."*[10]

[8] Hereinafter, Sand Mining Guidelines, 2016.
[9] Hereinafter Sand Mining Guidelines, 2020.
[10] Guidelines formulated under Section 23C of MMDR Act, 1957.

3. It is, therefore, compelling to hold that a DSR is valid and tenable only when a proper *replenishment study* is conducted.

2. Factual Background:

4. The facts germane to the issue, and necessary for disposal of these appeals are as follows: The project proponent submitted three proposals for undertaking mining activities in (i) Block 1, Driegam Bridge Downstream, Shaliganga Nallah Bed Mining Project, (ii) Block-2 Banderpora Upstream, Shaliganga Nallah Bed Mining Project and (iii) Block 4, Panzam Bridge to Trumbi Bridge (Lalgam) Downstream. The J&K UT Expert Appraisal Committee ("J&K UT EAC" hereinafter) in its 81st meeting dated 03.01.2022 discussed the said proposals and rejected the same, particularly on grounds that the proposed area of extraction is already over-exploited and is depleted due to heavy illegal mining. It also noted that the DSR prepared for the concerned district was not formulated as per guidelines as the same needs revision for including replenishment data.

5. In the meanwhile, the project proponent received '*Fit for Mining Certificate*' for Blocks 1, 2 and 4 from the Geology and Mining Department on 05.02.2022.

6. Following certification of mining department, the project proponent submitted its second proposal. Having considered the said proposal in its 87th meeting on 02.03.2022, the J&K UT EAC recommended the project for grant of EC. While recommending grant of EC, the J&K UT EAC clearly recorded and reiterated that DSR is not being formulated as per the guidelines.

7. Accepting the recommendations of the EAC, the State Environment Impact Assessment Authority[11] granted EC to the project proponent on 19.04.2022. While granting the EC, SEIAA restricted the depth of mining to maximum of 1 meter in view of "*non-availability of replenishment data"* in the DSR.

8. *Challenge to the grant of EC*: Aggrieved by the issuance of EC dated 19.04.2022, *person interested in environment*, respondent no. 1 filed an appeal before the National Green Tribunal[12] primarily impugning the grant of EC on the grounds that;

> *"i. The Environmental Clearances dated 19.04.2022 were granted without taking into account the grounds on which the previous proposals of the project proponent were rejected and continued to grant Environmental Clearances without due consideration of the same;*
>
> *ii. Violation of Rule 4(iv) of Jammu and Kashmir Minor Mineral Concession, Storage, Transportation of Minerals and Prevention of Illegal Mining Rules, 2016 which prohibits any minor mineral concession being granted within a distance of 25 meters of any embankment;*

[11] Hereinafter, "SEIAA".
[12] Hereinafter, "Tribunal".

> *iii. The Environmental Clearances have been granted despite the District Survey Report not being prepared in line with the Guidelines, as noted by JKEAC;*
>
> *iv. Violations of conditions of the Environmental Clearances dated 19.04.2022 by the project proponent who undertook certain activities strictly prohibited under the Environmental Clearance."*
>
> (emphasis supplied)

9. The Tribunal, vide the order impugned before us allowed the appeal and set aside the EC dated 19.04.2022 finding it to be violative of environmental norms. Thus, the present appeals.

3. The Legal and Regulatory Regime:

10. The significance of mining for economic development, particularly in relation to industries involved in infrastructure development, energy, cement etc has long been recognised. In exercise of its legislative competence, Parliament enacted the Mines and Minerals (Development and Regulation) Act, 1957[13], for development and regulation of mines and minerals in the country. This legislation is, however, not concerned with safeguarding environmental interests. For that purpose, we have the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, and the Environment

[13] Hereinafter, "MMDR Act".

(Protection) Act, 1986, as well as policy measures such as the National Mineral Policies of 2008 and 2019.

4. The Environment (Protection) Act:

11. The Environment (Protection) Act, 1986 is a comprehensive legislation enacted with the object of protecting and improving the environment. Under Sections 3 and 5 of the Act, the Central Government is empowered to take all such measures as may be necessary for the purpose of preventing, controlling and abating environmental pollution.

5. EIA Notifications 1994:

12. In exercise of the powers conferred under Sections 3 and 5, MoEF&CC issued the Environment Impact Assessment (EIA) Notification, 1994[14], which marked a significant shift in environmental governance by making prior environmental clearance mandatory for specified categories of industrial and development projects, including mining. The Notification laid down a procedural framework for assessing the likely environmental impact of proposed projects, mandating submission of detailed information, public consultation, and mitigation plans. Schedule I

[14] Hereinafter, "1994 Notification".

to the Notification listed 29 categories of projects requiring prior approval, with Item 20 expressly covering mining activities. Thus, the legislative intent was clear; no mining activity, whether new, expanded, or modernised could proceed without rigorous environmental scrutiny and express prior clearance from the competent authority.

6. The Environment Impact Assessment Notification, 2006:

13. The regulatory framework underwent further consolidation with the issuance of the EIA Notification dated 14.09.2006[15]. The 2006 Notification introduced a more elaborate, decentralised, and categorised approach to environmental appraisal. It classified projects into Category A and Category B, based on their potential environmental impact and scale, with Category A projects requiring clearance at the Central level and Category B projects at the State level, through the SEIAA. Para 2 of the 2006 Notification reads as under;

> ***2. Requirements of prior Environmental Clearance (EC)****:- The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category 'A' in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category 'B' in the said Schedule, before any construction work, or preparation of land*

[15] Hereinafter, "2006 Notification".

by the project management except for securing the land, is started on the project or activity:

(i) All new projects or activities listed in the Schedule to this notification;

(ii) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernization;

(iii) Any change in product - mix in an existing manufacturing unit included in Schedule beyond the specified range.

14. Para 5, 6 and 7 gives a detailed procedure for grant of prior EC. Further, Para 8 talks about the final stage of grant or rejection of prior EC. Para 9 deals with the tenure and validity of an EC while Para 10 provides for post grant monitoring. The Appendix III enumerates the generic structure of an EIA application and its essentials. Over the course of years, this EIA Notification, 2006 underwent various amendments further strengthening the EC norms and laying down of detailed procedure thereto.

7. Decision of this Court in Deepak Kumar v. State of Haryana:

15. While the statutory framework under the Environment (Protection) Act, 1986 and the EIA Notification of 2006 laid down the procedural architecture for environmental clearance, judicial intervention became necessary to address persisting regulatory lapses, particularly in the context of sand mining. A seminal instance of such intervention is found in *Deepak Kumar v. State of*

Haryana[16], wherein the Supreme Court examined the legality of mining leases granted in the State of Haryana without prior environmental appraisal. This Court deprecated the practice of issuing auction notices for minor mineral extraction without first conducting scientific studies to assess the environmental impact. Emphasising the need for a precautionary approach, the Court underscored that no mining activity, however minor, could be permitted without an environmental clearance based on a proper *replenishment study* and sustainable extraction limits. This decision reaffirmed the necessity of grounding regulatory approvals in scientific analysis, and has since served as a judicial benchmark in ensuring that mining activities are aligned with environmental safeguards. This Court held as under:

> "*8..... Sand mining on either side of the rivers, upstream and instream, is one of the causes for environmental degradation and also a threat to the biodiversity. Over the years, India's rivers and riparian ecology have been badly affected by the alarming rate of unrestricted sand mining which damage the ecosystem of rivers and the safety of bridges, weakening of riverbeds, destruction of natural habitats of organisms living on the riverbeds, affects fish breeding and migration, spells disaster for the conservation of many bird species, increases saline water in the rivers, etc.*
>
> *9. Extraction of alluvial material from within or near a streambed has a direct impact on the stream's physical habitat characteristics. These characteristics include bed elevation, substrate composition and stability, instream roughness elements, depth, velocity, turbidity, sediment transport, stream discharge and temperature. Altering these habitat characteristics can have deleterious impacts on both instream*

[16] (2012) 4 SCC 629. Hereinafter, "*Deepak Kumar*".

biota and the associated riparian habitat. The demand for sand continues to increase day by day as building and construction of new infrastructures and expansion of existing ones is continuous thereby placing immense pressure on the supply of the sand resource and hence mining activities are going on legally and illegally without any restrictions. Lack of proper planning and sand management cause disturbance of marine ecosystem and also upset the ability of natural marine processes to replenish the sand.

10. We are expressing our deep concern since we are faced with a situation where the auction notices dated 3-6-2011 and 8-8-2011 have permitted quarrying, mining and removal of sand from instream and upstream of several rivers, which may have serious environmental impact on ephemeral, seasonal and perennial rivers and riverbeds and sand extraction may have an adverse effect on biodiversity as well. Further, it may also lead to bed degradation and sedimentation having a negative effect on the aquatic life. The rivers mentioned in the auction notices are on the foothills of the fragile Shivalik Hills. Shivalik Hills are the source of rivers like Ghaggar, Tangri, Markanda, etc. River Ghaggar is a seasonal river which rises up in the outer Himalayas between Yamuna and Satluj and enters Haryana near Pinjore, District Panchkula, which passes through Ambala and Hissar and reaches Bikaner in Rajasthan. River Markanda is also a seasonal river like Ghaggar, which also originates from the lower Shivalik Hills and enters Haryana near Ambala. During monsoon, this stream swells up into a raging torrent, notorious for its devastating power, as also, River Yamuna.

11. We find that it is without conducting any study on the possible environmental impact on/in the riverbeds and elsewhere the auction notices have been issued. We are of the considered view that when we are faced with a situation where extraction of alluvial material within or near a riverbed has an impact on the river's physical habitat characteristics, like river stability, flood risk, environmental degradation, loss of habitat, decline in biodiversity, it is not an answer to say that the extraction is in blocks of less than 5 ha, separated by 1 km, because their collective impact may be significant, hence the necessity of a proper environmental assessment plan.

* * *

25. Quarrying of river sand, it is true, is an important economic activity in the country with river sand forming a crucial raw material for the infrastructural development and for the construction industry but excessive instream sand and gravel mining causes the degradation of rivers. Instream mining lowers the stream bottom of rivers which may lead to bank erosion. Depletion of sand in the streambed and along coastal areas causes the deepening of rivers which may result in destruction

of aquatic and riparian habitats as well. Extraction of alluvial material as already mentioned from within or near a streambed has a direct impact on the stream's physical habitat characteristics.

26. We are of the considered view that it is highly necessary to have an effective framework of mining plan which will take care of all environmental issues and also evolve a long-term rational and sustainable use of natural resource base and also the bio-assessment protocol. Sand mining, it may be noted, may have an adverse effect on biodiversity as loss of habitat caused by sand mining will affect various species, flora and fauna and it may also destabilise the soil structure of river banks and often leaves isolated islands. We find that, taking note of those technical, scientific and environmental matters, MoEF, Government of India, issued various recommendations in March 2010 followed by the Model Rules, 2010 framed by the Ministry of Mines which have to be given effect to, inculcating the spirit of Article 48-A and Article 51-A(g) read with Article 21 of the Constitution."

(emphasis supplied)

8. Environment Impact Assessment Notification, 2016:

16. The observations made by this Court in *Deepak Kumar* (supra) laid down the jurisprudential foundation for requiring scientific scrutiny, particularly through District Survey Reports (DSRs) before permitting sand mining even at the local level. Recognising the ecological fragility of riverbeds and the unchecked nature of minor mineral extraction, the Central Government, in response to the said judgment, amended the EIA Notification of 2006 on 15.01.2016, to introduce a distinct regulatory framework for riverbed and sand mining. These amendments introduced specific procedures for cluster-based assessments and made *replenishment studies* integral to the clearance process. The

preamble to the amended Notification is instructive and enables us to understand the purpose, scope, and statutory contours of the DSR, which now forms the central point of scrutiny in the present case. The preamble is as follows:

> *"And whereas, in pursuance to the order of Hon'ble Supreme Court 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., prior environmental clearance has now become mandatory for mining of minor minerals irrespective of the area of mining lease;*
>
> *And whereas, as a result of the above said Order of Hon'ble Supreme Court, the number of cases which are now required to obtain prior environmental clearance has increased substantially;*
>
> *And whereas, the Hon'ble National Green Tribunal, vide its order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor minerals;*
>
> *And whereas, the State Governments have represented for streamlining the process of environmental clearance for mining of minor mineral;*
>
> *And whereas, the Ministry of Environment, Forest and Climate Change in consultation with State Governments has prepared Guidelines on Sustainable Sand Mining detailing the provisions on environmental clearance for cluster, creation of District Environment Impact Assessment Authority and proper monitoring of sand mining using information technology and information technology enabled services to track the mined out material from source to destination;*
>
> *Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments in the said notification, namely:-*
>
> *In the said notification,-*
>
> *(a) in paragraph 2, after the words "in the said Schedule", the following words shall be inserted, namely:- "and at District level, the District Environment Impact Assessment Authority (DEIAA) for matters falling under Category 'B2' for mining of minor minerals in the said Schedule";*

(b) after paragraph 3, the following paragraph shall be inserted…"

A. Establishment of District Level Environment Impact Assessment Authority (DEIAA) & District Expert Appraisal Committee (DEAC) under Para 3A:

17. As is evident from the above extracted portion of the preamble to the EIA Notification 2016, two bodies namely, the DEIAA and DEAC have been established by inserting Para 3A to the EIA Notification, 2006 for grant of EC to a newly introduced category (by amending para 2), called category B2.

B. New category called Category B2 for sandmining in districts was introduced through para 4(iv):

18. Paragraph 4 of the EIA notification 2006 relating to categorization of projects and activities was also amended and category B2 falling within the jurisdiction of the DEIAA, acting on the decision and recommendation of DEAC is introduced.

C. Preparation of District Survey Report (DSR) Introduced through Para 7(iii):

19. Para 7 of the EIA Notification 2006 is of utmost importance as it relates to the process of EC for new projects which comprises of four stages namely, screening, scoping, public consultation and appraisal respectively. Para 7(ii) relates to process for expansion or modernisation or change of project mix in existing projects. It is in

this paragraph relating to the process of EC in the EIA Notification 2006 that further amendment was made introducing sub-para (iii). Introduction of para 7(iii) for the first time contemplated, preparation of DSR for sand mining or river bed mining and mining of other minor minerals. Para 7(iii) now reads as under;

> "*7.* ***Stages in the Prior Environmental Clearance (EC) Process for New Projects***
>
> *(i) ….*
>
> *(ii) …*
>
> *(iii)* ***Preparation of District Survey Report for Sand Mining or River Bed Mining and Mining of other Minor Minerals****:*
>
> *(a) The prescribed procedure for preparation of District Survey Report for sand mining or river bed mining and mining of other minor minerals is given in Appendix X.*
>
> *(b)The prescribed procedure for environmental clearance for mining of minor minerals including cluster situation is given in Appendix XI."*

D. Procedure for preparation of DSR introduced through Appendix X:

20. Procedure for preparation of the above referred DSR under para 7(iii) is laid down in great detail in Appendix X to the notification. Appendix X, apart from laying down the detailed procedure, also declares that the, "*District Survey Report shall form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The Report shall be updated once every five years.*" Appendix X is as follows;

"PROCEDURE FOR PREPARATION OF DISTRICT SURVEY REPORT

The main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following:

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 report shall have the following structure:

1. Introduction

2. Overview of Mining Activity in the District

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

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

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

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

7. General Profile of the District

8. Land Utilization Pattern in the district: Forest, Agriculture, Horticulture, Mining etc.

9. Physiography of the District

10. Rainfall: month-wise

11. Geology and Mineral Wealth

In addition to the above, the report shall contain the following:

(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.

A survey shall be carried out by the DEIAA with the assistance of Geology Department or Irrigation Department or Forest Department or Public Works Department or Ground Water Boards or Remote Sensing Department or Mining Department etc. in the district.

Drainage system with description of main rivers

***

Methodology adopted for calculation of mineral potential

The mineral potential is calculated based on field investigation and geology of the catchment area of the river or streams. As per the site conditions and location, depth of minable mineral is defined. The area for removal of the mineral in a river or stream can be decided depending on geo-morphology and other factors, it can be 50 % to 60 % of the area of a particular river or stream. For example in some hill States mineral constituents like boulders, river born Bajri, sand up to a depth of one meter are considered as resource mineral. Other constituents like clay and silt are' excluded as waste while calculating the mineral potential of particular river or stream.

The District Survey Report shall be prepared for each minor mineral in the district separately and its draft shall be placed in the public domain by keeping its copy in Collectorate and posting it on district's website for twenty one days. The comments received shall be considered and if found fit, shall be incorporated in the final Report to be finalised within six months by the DEIAA.

The District Survey Report shall form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The Report shall be updated once every five years."

(emphasis supplied)

21. The 2016 amendment also introduces Appendix XI in the context of preparation of DSR for sandmining or river bed mining of other minor minerals. The amendment also prescribes distinct procedure for EC for mining of minor minerals including cluster situation.

E. Challenge to the Notification 2016 the direction of NGT in Satendra Pandey's case:

22. Environmental concerns were expressed that the amendments brought about by the EIA notification 2016 did not translate into action the mandate of this Court's decision in

Deepak Kumar (supra). These concerns were considered by the NGT in *Satendra Pandey v. MoEFCC*[17] wherein the following directions were issued.

> *"22. For all these reasons, we direct that the procedure laid down in the impugned Notification be brought in consonance and in accord with the directions passed in the case of Deepak Kumar (supra) by (i) providing for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling under Category B-2 at par with Category B-1 by SEAC/SIEAA as well as for cluster situation wherever it is not provided; (ii) Form-1M be made more comprehensive for areas of 0 to 5 ha by dispensing with the requirement for Public Consultation to be evaluated by SEAC for recommendation of grant EC by SEIAA instead of DEAC/DEIAA; (iii) if a cluster or an individual lease size exceeds 5 ha the EIA/EMP be made applicable in the process of grant of prior environmental clearance; (iv) EIA and/or EMP be prepared for the entire cluster in terms of recommendation 5 (supra) of the Guidelines for the purpose of recommendations 6, 7 and 8 thereof; (v) revise the procedure to also incorporate procedure with respect to annual rate of replenishment and time frame for replenishment after mining closure in an area; (vi) the MoEF & CC to prepare guidelines for calculation of the cost of restitution of damage caused to mined-out areas along with the Net Present Value of Ecological Services forgone because of illegal or unscientific mining."*

9. The Sand Mining Guidelines and the Focus on Replenishment Study:

23. At this juncture, reference must be made to the Sustainable Sand Mining Management Guidelines 2016 and Enforcement and Monitoring Guidelines for Sand Mining 2020. They constitute binding directives for regulatory authorities, and their due observance is indispensable for safeguarding ecology and public interest.

[17] 2018 SCC OnLine NGT 2388.

A. Sustainable Sand Mining Management Guidelines, 2016:

24. The 2016 guidelines are based on the principle that unregulated sand mining is unsustainable and must be controlled. Compliance with existing and future laws is mandatory rather than optional. Leaseholders should be allowed to self-regulate, provided they demonstrate adherence to legal requirements. However, if self-regulation proves ineffective, stricter enforcement and monitoring will be necessary, with penalties imposed in accordance with the law. Additionally, environmental protection and public well-being must be prioritized, ensuring that natural resources are utilized responsibly to contribute positively and sustainably to the economy. The prime objective of the said Guidelines is to ensure that sand mining is done in an environmentally sustainable and socially responsible manner. The purpose and object of the guidelines is declared as under:

> *"Sustainable Development is built on three pillars - environmental, social and economic. Sustainable development cannot be achieved if the environment is protected but poverty is prevalent in a significant part of the population. Similarly, sustainable development cannot be achieved through inappropriate economic growth, if it undermines the environment in which people and businesses exists. These Guideliness support that fundamental concept, promoting environmental protection, limiting negative physiological, hydrological and social impacts under pinning sustainable economic growth.*
>
> *Sand and gravel have long been used as aggregate for construction of roads and building. Today, the demand for these materials continues to rise. In India, the main sources of sand*

are river flood plain, coastal sand, paleo channel sand, and sand from agricultural fields.

River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost. River sand mining can damage private and public properties as well as aquatic habitats. Excessive removal of sand may significantly distort the natural equilibrium of a stream channel.

Removing sediment from the active channel bed in river interrupt the continuity of sediment transport through the river system, disrupting the sediment mass balance in the river downstream and induces channel adjustments (usually incision) extending considerable distances (commonly one kilometer or more) beyond the extraction site.

The magnitude of the impact basically depends on the magnitudes of the extraction relative to bed load sediment supply and transport through the reach. Implementation of the principles and processes outlined in this Guidelines will limit the negative externalities of sand and gravel mining."

25. Explaining the method and manner by which sustainable sand and gravel mining are to be undertaken, the guidelines provide that:

The broad principle on which any sustainable sand mining Guidelines / policy can be based is that river/ natural resources must be utilized for the benefit of the present and future generation, so river resources should be prudently managed and developed. The preparation of District Survey Report is an important initial step.

The Processes under the Guidelines:

(a) Identification of areas of aggradation / deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited. Use of satellite imagery for identifying areas of sand deposit and quantity be done.

(b) Calculation of annual rate of replenishment and allowing time for replenishment after mining in area.

(c) Identifying ways of scientific and systematic mining.

(d) Identifying measures for protection of environment and ecology.

(e) Determining measures for protection of bank erosion.

(f) A bench mark (BM) with respect to mean sea level (MSL) should be made essential to in mining channel reaches (MCR). Below which no mining shall be allowed.

(g) Identifying steps for conservation of mineral.

(h) Permanent gauging facilities (for discharge and sediment both) should be made compulsory for the sites having excessive mining in consultation with Central Water Commission or any competent State Agency.

(i) Implementing safeguards for checking illegal and indiscrete mining.

Following the above processes, to begin with it is important to prepare a survey document mapping the status of sand sources in a district. This survey should be conducted and report be prepared for each district. Though it is an acceptable fact that rivers cut across districts and States and every river is an ecosystem in itself. But, keeping in view the fact that the district is the most established unit of administration at which this kind of survey, planning and monitoring can be ensured effectively, it is proposed that every district will prepare this document taking the river stretch in that district as an ecological unit and inventorising other sources of sand in the district.

(emphasis supplied)

26. As per the 2016 Guidelines, the preparation of DSR is essential for (i) identification of areas of aggradation/deposition where mining can be allowed, (ii) calculation of annual rate of replenishment, (iii) identifying ways of scientific and systematic mining, (iv) implementing safeguards in place to ensure the mining carried out is sustainable. The scope of the DSR should include detailed information for each district, covering rivers, streams, and other sand sources, along with the availability of sand, gravel, and aggregate resources. It must also provide data on existing mining

leases for these materials. Additionally, the classification of mining areas should distinguish between sections of rivers, streams, and other sources that are suitable for sand and aggregate extraction and those where such activities are strictly prohibited. It is further provided that such survey document shall be prepared in the district based on direct and indirect benefits of mining and identification of the potential threats to the river/stream beds in the district.

B. Enforcement and Monitoring Guidelines for Sand Mining, 2020:

27. While the 2016 guidelines focus on management of sand mining in the country, it was felt that there is a compelling need to provide guidelines for effective enforcement and also prescribe regulatory method for monitoring. With this objective, the Enforcement and Monitoring Guidelines for Sand Mining 2020 were issued. In paragraph 4, the 2020 guidelines provide the method of identification of possible sand mining source and preparation of the DSR and highlight that "*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.*"

"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/LoI. 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."

28. The 2020 Guidelines lay special emphasis on the necessity to undertake replenishment study. It is provided thereunder that;

"***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

5.2.1 Physical Survey of the field by the conventional method

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

5.2.3 Accuracy Assessment of Aerial Data

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.*"

10. Need for replenishment study:

29. From the foregoing analysis, it is apparent that in light of Guidelines, 2016 and the Guidelines, 2020, the absence of a replenishment study renders a DSR fundamentally defective. These guidelines categorically require that any assessment of mineable mineral quantity must be premised on scientific estimation of replenishment rates, failing which the DSR lacks the foundational data necessary to determine sustainable extraction limits.

30. Over the past two decades, environmental statutory and regulatory law in India has undergone significant evolution, particularly in response to the challenges posed by unregulated and unsustainable sand mining. Recognizing the adverse ecological impacts of such activities, successive legal and policy frameworks have progressively tightened the requirements for environmental compliance. In order to appreciate the present controversy, it was necessary to retrace the legal trajectory. Recently, this Court has discussed, in detail, the legal regime surrounding the preparation, nature, scope and importance of DSR in *Gaurav Kumar* (supra). However, the focal point for present discussion is the value that must be appended to *replenishment study* before EC is granted to mining operations.

31. Demand for construction-grade sand is growing at a tremendous rate and it is said that the world is expected to run out of this resource by 2050. Construction-grade sand, can be found in aquatic environments, such as rivers and is a provisioning ecosystem service. Even under controlled circumstances, the practice of extracting sand from the riverbed and banks impacts the environment. In the physical environment, the primary effects are riverbed widening and lowering. In the biological environment, the overarching effect is a reduced biodiversity and stretches from the aquatic and shoreline flora and fauna to the whole floodplain area.[18] Due to easy access, river sand and gravel have been used extensively in construction projects. Depending on the mining operation method as well as morphologic and hydraulic characteristics of the river, sand mining may cause bed and bank erosion or other negative consequences for the river eco-system. It is, therefore, necessary to conduct appropriate studies, including that of replenishment to explore sustainable and cost-effective methods for river mining.[19]

[18] E.S. Rentier, L.H. Cammeraat, The Environmental Impacts of River Sand Mining, Science of the Total Environment, Vol. 838, Part I, 2022.
[19] Hamed Haghnazar, *et al* - Evaluation of infilling and replenishment of river sand mining pits, Environmental Earth Sciences, Vol. 79 (14), 2020.

32. Without a proper study of the existing position of the riverbed and its sustainability for further sand mining, grant of environmental clearances would be detrimental for the ecology. It has therefore been held that a detailed study leading to a preparation of the *replenishment report* is an integral part of the DSR. If the DSR becomes the foundation for consideration of an application for environmental clearance, then it is compelling to ensure replenishment studies are undertaken in advance and the report forms an integral part of the DSR.

33. In view of the existing legal regime that mandates preparation of *replenishment report* in a scientific manner and such a report forming an integral part of the District Survey Report, we hold that a District Survey Report without a proper replenishment study is equally untenable.

11. Application of law to the facts of the present case.

34. We will now consider the facts of the present case in light of the existing legal regime as applicable to sand mining. The Union Territory of Jammu & Kashmir, Department of Geology and Mining is said to have prepared the DSR of all the districts during the year 2017-18 as per the MoEF&CC notification. The National Highway Authority of India awarded a contract to the project proponent on

30.03.2021 for construction of a 4-lane bypass/ring road around Srinagar City. By its letter dated 07.05.2021, it directed the department to grant permission for mining at the identified sites to the project proponent to enable it to undertake the project. The Government also directed the project proponent to apply for permission under Rule 91 of the J&K Minor Mineral Concession, Storage, Transportation of Minerals and Prevention of Illegal Mining Rules, 2016. The Government reserved the four mineral blocks for the project proponent to excavate, develop and utilise the mineral. The project proponent in turn applied for environment clearances (EC) for extraction of sand and gravel in the 3 blocks.

35. The Jammu & Kashmir Expert Appraisal Committee by its order dated 03.01.2022 initially rejected the proposal for environmental clearance (EC). However, when the project proponent received *fit for mining* certificate from the department on 05.02.2022, the project proponent re-applied for grant of environmental clearance and the same was granted by J&K Expert Appraisal Committee by its order dated 02.03.2022. The committee specifically recorded that the District Survey Report is not formulated as per guidelines and therefore it needs revision for including the *replenishment data*. In our opinion, the J&K EAC committed a serious error in proceeding further with the DSR once

it realised that it is not formulated as per the MoEF&CC Notification 2016 and 2016 and 2020 Sand Mining Guidelines and also when the *replenishment data* is not complete. Further, the half-hearted approach adopted by the J&K EAC is evident from its final recommendation for grant of EC with *validity of only three years from the date of commencement of the mining operations duly certified by the District Mineral Officer concerned with intimation to the JKEIAA and JKPCB in view of non-availability of replenishment data.*

36. The J&K Environment Impact Assessment Authority granted the environment clearance on 19.04.2022. The environment clearance was made subject to the following conditions.

> *"The Environment clearance is subject to Revision of mining plan in terms of Section 4.3(r) of Enforcement Monitoring Guidelines for Sand Mining-2020, issued by Ministry of Environment, Forests and Climate Change where-under the area of 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. Mining depth be restricted to max. 1m in aggregate and bulk density of 2.0 be adopted for calculating mineral production subject to maximum production of 34800MT, in view non-availability of replenishment data in the DSRs."*

37. It is unfortunate that J&K EIAA compromised with regulatory integrity by granting the environment clearances (EC) on the basis of a DSR without a *replenishment report*. The compromise sought to be achieved by permitting the project proponent to go ahead

with a "*restricted mining depth of maximum 1 meter and bulk density of 2.0 for production of the mineral and supplying it to maximum production of 34800 mt in view of non-availability of replenishment data*" is unacceptable. The illegality committed by the J&K EAC in so recommending is accentuated with the J&K EIAA in granting EC. This is how regulatory failure occurs.

38. We have already indicated that the respondent no.1 challenged the grant of environment clearance before the NGT. By the order impugned before us, the NGT allowed the appeal. We are in complete agreement with the following findings of the NGT:

> *"159. Learned Counsel appearing for PP also argued that mining activities only upto one meter depth was allowed and it takes care of absence of DSR and replenishment study but when questioned, could not show any provision where under if mining for one meter depth is allowed, in such a case requirement of preparation of DSR or replenishment study can be dispensed with. In fact, under EIA 2006 as amended by notifications dated 15.01.2016 and 25.07.2018, there is no exception in respect of preparation of DSR and the same thing has been reiterated in SSMG-2016 and EMGSM-2020.*
>
> *160. Non-preparation of DSR as per guidelines and absence of replenishment study is a fact which has not been disputed before us by Learned Counsel appearing for PP. Stand taken by respondent 1 and 4 in the written reply submitted before us also does not show anything otherwise."*

39. In view of the above discussion, we have no hesitation in upholding the decision of the NGT and dismissing the civil appeals of the UT of J&K, the NHAI and also that of the project proponent.

40. This takes us to issue no. 3, which relates to the allegation that project proponent has violated the J&K Minor Mineral Concession, Storage, Transportation of Minerals and Prevention of Illegal Mining Rules, 2016. The Tribunal came to the conclusion that there is no evidence of such violation. As there is no cross appeal, this issue need not detain us any further.

41. Insofar as issues 4 and 5 are concerned, the allegation is that the project proponent has used heavy machines like JCB etc. for excavation. It is alleged by respondent no.1, a person interested in environment conservation, that the activity is in violation of condition no. 53 of the EC. The condition is as follows:

> *"53. Mining shall be done manually minimally supported by semi-mechanized methods. Heavy machinery like JCBs, Excavators/L&T hydraulic excavators etc. should not be allowed. Emphasis should be given to employment of locally available labour force to address the socio-economic concerns of the locals."*

42. The Tribunal came to the conclusion that there is in fact a violation and therefore directed J&K Pollution Control Board to take appropriate action. There is no need for us to interfere with this direction. The J&K Pollution Control Board will take its decision after giving the project proponent an opportunity of placing its case before it.

43. We are informed by Mr. Narender Hooda, learned senior counsel appearing on behalf of the project proponent that the project itself is complete and as such there is no further requirement of environment clearance. In this view of the matter, no further orders are necessary.

44. In view of the above, the appeals filed on behalf of the Union Territory of J&K, NHAI and the project proponent are dismissed. The parties shall bear their own costs.

.....J.
[PAMIDIGHANTAM SRI NARASIMHA]

.....J.
[ATUL S. CHANDURKAR]

NEW DELHI;
AUGUST 22, 2025