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The Facade of Federalist Incongruity: A Political Pretense to a Popular Menace

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Abstract

Sand, being a minor mineral, slips out of the Union List of the Seventh Schedule; which section 15 of the MMDR Act re-assures. This, coupled with entries 23 and 64 of State List is construed as categorical constraint on Union interference in the popular menace of sand mining. But, this paper here crusades to construct an inclusive interpretation of entries 17A, 17B, 20, 34 of concurrent List and entries 13, 42, 51, 54, 56, 97 of the Union List to compel unconditional compliance to conservation justice principles. Sand mining, apart from being viewed as a robbery of a resource in itself, must be viewed under the wide lens of wildlife, habitation and ecology. These three are intertwined in a way that the changes in the geomorphology of river, its physical and chemical properties, the consequential head-cutting thereof erode the exotic wildlife of their naturally available habitat, migrating the zoonotic diseases along with them to human settlements. The artificial lateral erosion in the form of degrading dredging also attacks the stability of standing structures like bridges, water tanks, railway pillars, etc. The human habitation is also affected by the suspended particulate matter in air and potholed pathways, a result of wrongly chosen routes for transport. Hence, as lucrative and necessary the business of sand and construction sounds, it is more crucial to consider the grave existential threat of rampaging our rivers. The State specific solutions have either been stuck in 1950s laws or come off as late epiphanies to altogether ban mining. A combined crusade for preservation and public health commands a quasi federalist conscience of a common conservation law than a duty dividing federalist approach between the Centre and the States.

Keywords: Sand mining, Environment, Hydrology, Sand inflow, Mining lease, Environmental clearance.

Introduction:

For legislative purposes, minerals in India are divided into minor and major minerals under the MMDR Act.1 Among building stones, ordinary clay, gravel

[1] Mines and Minerals (Development and Regulation) Act, 1957.

and other minerals that are included by Central Government's Gazette Notification, the list of minor minerals includes 'ordinary sand'.2 Ordinary sand is understood to include naturally occurring sand except the sand for following purposes viz., purpose of refractory and manufacture of ceramic, metallurgical purposes, optical purposes, stowing in coal mines, manufacture of silvicrete[3] cement, sodium silicate, pottery and glass.[4]The divide between major and minor minerals does not seem to be availability-based, rather value-based. Else, river sand would have been declared a 'major mineral' for the quantum available is more than major minerals. Only the major minerals are under Central Government's legislative purview and the State Governments are empowered to grant mineral concessions and frame rules for transportation, storage and other purposes with regard to minor minerals.[5] Though distribution and delegation of powers is necessary, the fact that mineral map and forest map of India coincides calls for greater co-operation between the Centre and States in improving the quality and implementation of minor mineral legislations, river sand in particular.

Sand - A Natural Aquifer:

Generally, river sand is preferred to sea sand for construction activities because in the latter, the excessive chloride content will absorb humidity and corrode iron and steel rods used in construction, thus affecting the integral structural stability. Though there are industrial and economic benefit in the in-river mining, the environmental effects associated with the same have to be studied. Most of the catchment areas of Indian rivers are in the forests atop hills; from its point of culmination to its point of draining, the sediment transportation occurs at varying speeds in a river proportional to its slope and velocity; once the rivers reaches the calmer plains, the sediments start to settle and thereby give us a natural aquifer, which ensures the retention of water during monsoon failure and limited base flow.6 Hence, while allowing mining of river sand, the limit or dredging depth has to be fixed. The limit must be well above the approximate thickness of sand carpet that has to be maintained to act as aquifer in drought times; it is to be calculated taking into account the granular size, nature, its hydraulic conductivity and specific discharge and evapotranspiration among others.7 For example, clay has higher water holding capacity because its particle size is smaller; composition

[2] MMDR Act § 3(e), 1957.
[3] It is a blend of silica and concrete. It is formed when silica dissolves and re-solidifies as cement; usually, it is an indurated soil duricrust formed when surface sand and gravel are cemented by dissolved silica.
[4] Mineral Concession Rules § 70, 1960.
[5] MMDR Act §15 and 23C, 1957.
[6] Water in a stream permeates through the fractures and pervious sub-surfaces; this delayed later flows backs into the stream and is called 'Base flow'. It is different from ground water flow. Base flow is very low when there are impervious rocks or the surface is less absorbent but increases in forest covers usually with more permeable surfaces.
[7] The porosity increases recharge but the attention here is to retention. The quantum of sand needed to hold enough water during dry period have to be calculated irrespective of whether the recharge is efficient; in certain extremely porous sand beds, recharge might be efficient but more volume may be needed than average river beds to retain sufficient water i.e., thickness needed increases.

of soil is a major determinant of water holding capacity which further increases or decreases the minimum thickness of sand carpet to be maintained in a to-be-mined river. The river should have adequate amount of sand to hold water in days of bare minimum flow from reservoirs. River sand's water retention, base flow and basic water needs have a close relationship in times of water crises. Thus, ensuring sufficient base flow by keeping a check on in-depth and extensive mining is required.

Consequential Detriments of Degrading Dredging:

In-river mining provides sand with greater super-structural stability for construction; due to abundance of rivers in India, it is easier than alternative solutions; it improves the workability of concrete and mortar than crushed stones; also, mining excess sand deposit will increase the conveyance capacity of the rivers. But given the time taken for replenishment and other irreparable damaged rendered, the scale shifts quite swiftly to the side of environmental detriments. The excessive in-river mining for sand leaves both on-site and off-site impacts.[8] The extensive mining leads to bank widening, bank erosion and instability, changes in channel bed profile and the in-depth mining leaves deep excavation pits that look like mini-wells spread over the river; consequently, the water has to first fill these pits before resuming its flow; this leads to stagnation in water flow especially during summer and monsoonal failure , thus, depriving the far-off river banks and farms from being irrigated; the water takes a long time to travel and sometimes do not reach those far-off draining points when there is minimal flow which is consumed by this stagnant post-excavation pits that are not closed. Also, the rampant mining leads to head-cutting and channel incision, the sediment-starved hungry water will further erode and drain faster hardly giving any time for efficient and sufficient diversion and storage for drinking and irrigation purposes; the erosion and widening is worse at the river mouth and deltas. The hydrology and geomorphology of the river is significantly altered; the high turbidity levels from mining also affect the infauna and epifauna populations[9] and the riverine ecosystem as a whole; there is a large drop in the fish species and their catch. In the coastal states like Kerala, bank widening and collapse might lead to salt water intrusion increasing the salinity of the available fresh water.

The construction of bunds for easy transportation of dug out sand also affects the water flow; the number of bunds, if too many, can significantly alter the river flow, speed and even shift its course and direction. Uneven mining can leave one bank of the river at a higher elevation than the other side, again shifting the flow to the low level area, depriving the farmlands and water pumping stations on the other side, of water. In India, in various rural places, the irrigation scheme is by

[8] Binoy Aliyas Mattamana, Shiney Varghese and Kichu Paul, "River Sand Inflow Assessment and Optimal Sand Mining Policy Development", 3 International Journal of Emerging Technology and Advanced Engineering, 306 (2013).

[9] They are the division of benthic organisms - they live on, in or near the river bed, lake, stream bottom and ocean floor.

constructing canals which divert and carry a portion of river water to the farms. By in-depth mining of more than 10 feet, the sluices and canals too stand at a higher elevation than water level in mined areas, thus leaving little or zero water to be fruitfully diverted.

Other lateral effects of excessive mining is poor recharge of natural aquifers, lowering of ground water table, flooding,[10] increased erosion, undermining of standing super-structures like railway bridges, water tanks, etc. The excessive mining necessitates constant transportation of sand; the uncovered lorries and trucks increase the suspended particulate matter level of air, blurring vision and obstructing breathing; civilians residing closer the mining area or transportation routes tend to develop respiratory illness; the frequent transportation of heavily loaded vehicles affect the quality of roads, creating potholes, affecting the easy and safe commute of two-wheelers.

The adjoining forest and vegetation near the rivers are also affected; the noise and extensive mining into the forest cover disturbs the wildlife, forcing them to migrate and sometimes even carry the zoonotic diseases with them to the nearby human settlements - example: The forced migration of fruit bat species and the Nipah Virus outbreak. The safe distance of 500 metres is legally mandated[11] in the cases of forest lands, bridges, reservoirs, etc., but it is hardly followed; even the limit fixed is too short; the steep difference in elevation between the super structures and the mined area affect their stability; the safe distances coupled with strict monitoring of depth of mining area alone can save them.

Determination of Dredging Depth, Distance And Intervals:

The above-mentioned social and environmental detriments force the legal hand to fix safe distances from super-structures like water tanks of public works departments, forest cover, etc., and to delimit the mining area leaving sufficient space between two consecutive mines. In tamilnadu, a distance of 1km has to be maintained between two quarries in the same river but this limit hardly does the purpose because the lessees illegally extend the allotted by many hectares both sideways towards the banks and along the course of river. So, the distance from banks should also be maintained and quarterly evaluation of the same has to be made by an Assistant Engineer of the Public Works Department allotted for the particular river basin. While fixing the quantum of sand allowable to be excavated, account has to be made for the nature of the terrain, the topography, hydrology and geomorphology of the river, water flow from the past two monsoons, water table, etc. The permission for dredgers cannot be made uniform, rather strictly reserved for difficult terrains. This calls for a comprehensive environmental assessment to document the sand inflow rate (replenishment rate) to fix the optimal sand excavation limits. the environmental clearances (EC) granted must have a provision for immediate suspension and moratorium on mining when there

[10] The sand slows down the river, thereby reducing erosion and inundations. Excessive mining leaves the river with very little quantum of sand which cannot slower the sediment starved hungry water, thereby increasing erosion and flood occurrences. Eg: 2018 Kerala floods.

[11] Example: Tamilnadu Minor Minerals (Concession) Rules, 1959.

is significant alteration affecting the channel's geomorphology.

Sustainable development cannot be achieved if there is too much emphasis on demand and supply assessment and poor scrutiny of environmental hazards associated; economic growth at the expense of environmental deterioration has to be given up to procure long term water supply benefits and to preserve riverine eco-system and indigenous fisheries.

Existing Policy Outlines and Probable Outcomes:

By virtue of sections 15 and 23C of the MMDR Act 1957, the State Governments are empowered to fix royalties on mining of minor minerals and to frame rules to prevent illegal mining, transportation and storage of such minerals including sand. There are state wise rules with varying royalties and restrictive conditions. In most of the states like Karnataka, Andhra Pradesh, Haryana, Gujarat, Chhattisgarh, Madhya Pradesh, Rajasthan, Telangana, Uttar Pradesh, etc., the authority to grant mining concession and monitoring is the Department/Directorate of Geology and Mining; in Tamilnadu, the major responsibility lies with the Public Works Department; in Punjab, it is the Department of Mining; in Maharashtra, it is the Revenue and Forest Department; in Assam, it is the District Forest Officer under the Department of Environment and Forest and so on. The problem here is that none of the States have given power to Department of Hydrology and Water Boards to rule on the mining concessions. Equal emphasis on the geological aspects, sand properties, groundwater level, channel's geomorphology, hydraulic conductivity, monsoon predictions must be given for a wholesome assessment.

States like Assam have made distinction between mining permits, mining contracts and mining leases based on the number of years permitted for mining. Short term permits for two years based on optimal mining limits in a river is appreciable whereas long term 'mining leases' ranging about 15 years is highly degrading given the slow rates of replenishment; even if granted, such leases shall not give permit for throughout-the-year mining but only conditional upon the sand inflow and revocable on alteration of critical components.

One of the limitations of existing policies is the failure to account for hydrology and geomorphology; the mining permits in many places have 'legal' and 'administrative' terms lacking clear details of specific scientific and technical standards; for example: When a condition in the license or lease stipulates that the depth of excavation shall not be more than one metre, it is a generalised condition without account of nature of terrain, granular size and amount; in other words, the administrative terms are vague in terms of field details and do not provide for special circumstance and topographies.

Another feature of minor minerals (concession) rules is the fixation of royalties; except Andhra Pradesh, most of the states have fixed royalties on sand excavated at per tonne basis from 40 to 60 rupees normally. But the basis of such imposition is

not dependant on the sale price of sand by lessee; the State governments, within their power under section 23C of the MMDR Act, must fix price of sand and relative royalties with penalties for violations; already the enormous gap between the demand and supply equation of natural sand has triggered historic price hikes; further inter-state transportation and illegal movement of sand coupled with unchecked self-imposed prices will culture sand mafias. Thus, new rules and amendment of the existing ones in the form of orders or regulations for periodical price ceilings are required.

In Tamilnadu, recently, the Government has abolished the practice of sub-leasing sand reaches though the implementation is still rudimentary;[12] whereas, in majority of other states, the permits are given to private lessees by way of tender and forward auction, sometimes e-auction. With regard to mining area, the area leased ranges from 5 hectares to 50 hectares normally but in states like Madhya Pradesh, Assam and Haryana, the range starts from 1 hectare and is without any upper limit and there is zero restriction on holding maximum mining areas in the state;[13] [14] in states like Tamilnadu, Telangana, Maharashtra and Chhattisgarh, there is no minimum or maximum mining area restriction; in Karnataka, the maximum area that can be leased for mining sand at one place is 20 hectares; in Punjab, 4 hectares have been fixed as maximum allowable mining area for short term contracts and the total mining areas held by the lessee in the state cannot exceed 5sq.km. These area limits are general, based on duration of leases than the quantum of sand available; the criteria for time permitted and area allocated must be based solely on the physical and hydrological properties of sand and its periodical inflow.

Despite the lacunae in implementation, there are certain feasible and desirable provisions in existing policies like requirement of environmental clearances, pollution control board permits,[15] controlled pricing models, registration of transporting vehicles and GPS installation, issuance of 'weighment' slips, required approval from Gram Sabha despite EC in states like Chhattisgarh, approvals from Maritime Board and opinion of Ground Water Table and Development Agency in Maharashtra, etc. But the problem lies with the non-uniformity of these provisions across the country; this also leads to excavation and transport of sand from a state with relaxed mining restrictions to those with stringent sand mining standards; lack of uniformly enforceable rules on inter-state sand smuggling has added to the menace.

Need For Common Framework (One Nation, One Policy Basis):

The MoEF[16] has issued various sustainable sand mining guidelines and passed several clearance mandates. Currently, as per the 2016 EIA Notification, for areas

[12] Tamilnadu has set up an online portal for ordering and delivery of sand - www.tnsand.in
[13] This means any one person can own all the sand quarries in the state.
[14] In Haryana, the limit for holding maximum area in the State is 1000 hectares.
[15] Such permits are in the form of CTO (Consent to Operate) or CFA (Consent for Approval).
[16] The Union Ministry of Environment, Forests and Climate Change.

of 50 hectares or more, application for Environmental Clearance must be made to the MoEF; for 25 to 50 hectares, the clearance issuing authority is the SEIAA17; for mine clusters less than 25 hectares18 or for individual mines up to 5 hectares , it is the DEIAA.19 The laudable effort of MoEF by virtue of its powers under the Environment Protection Act (1986) is making the approval of EC a mandate for projects that are even less than 5 hectares area and suggestion of manufactured sand use in place of natural sand following which various states have come up with distinct transport plans for M-sand.

The essence of so called 'quasi-federalism' is that there must be one national loyalty surpassing regional loyalties while preserving the unique regional cultural identities of people. In the realm of legislation, especially the field as sensitive as environment, a uniform legislative framework with sufficient state discretion to account for the special regional fact subsets is necessary; complete usurpation of legislative authority will fail to account for local needs and exigencies whereas the pure autonomy will and has already resulted in chaos, nurturing illegal inter-state sand smuggling. In the place of existing 'guidelines', model laws have to be enacted by the Centre with transition period for States to pass the same best fitting the regional facts. This is legally permissible as per the current Constitutional divide of legislative fields in the 7th Schedule.

Even though State Government is given the power and discretion to legislate on minor minerals as per section 15 of the MMDR Act, the Central Government reserves the right to declare any mineral as major mineral and bring the same under its purview. Even without doing so, the Union Government has the power to legislate on the aspects of inter-state sand transportation and price control as per Entries 42 and 51 of List I and Entry 34 of Concurrent List; keeping in view the expediency of 'public interest' and need for appropriate social and economic planning, the Central government can streamline sand mining;20 the need to preserve environment from the incessant in-river mining has even been echoed in UNEP Reports.21 Such regulations of Central Government, on public interest, will be binding on the State Governments by virtue of Entry 23 of State List. The Central Government can also make enforceable rules applicable to all States as an extension of implementation of decisions and resolution at International Conferences, not just treaties and conventions.22

Since the activity of mining in rivers touches upon other crucial subject matter like forests and wildlife and that most rivers are generally inter-state in their flow, their protection, preservation and development becomes the concern of Central

[17] State Level Environment Impact Assessment Authority. It has the SEAC - State Level Environment Appraisal Committee.
[18] In such a cluster, individual mines should not be >5 hectares.
[19] District Level Environment Impact Assessment Authority. Its appraisal committee is called the DEAC.
[20] Entry 54 of List I and Entry 20 of List III (Concurrent List), 7th Schedule of the Indian Constitution.
[21] UNEP, "Environmental guidelines for sand and gravel extraction projects", Environmental guidelines No.20, United Nations Environment Programme, Nairobi, 1990.
[22] Entries 13 and 14 of the Union List, 7th Schedule and Art. 253 and 254 of the Indian Constitution.

government. Thus, the Union Government has wide Constitutional powers to legislate upon in-river sand mining without encroaching upon States' legislative discretion. A co-ordinated co-operative effort is crucial for the curbing the excesses committed in the name licensed mining. Legislating on the aforementioned aspects of mining without taking away the States' discretion to fix royalties for excavation and general right to revoke mining contracts will render constitutional justice while discharging environmental obligations.

Community Participation:

In case of Environmental Clearances, projects with areas less than 25 hectares (Category B2 projects) are not mandated to conduct public hearing/public consultation. The Central Government has to effectuate the process of granting ECs by considering the complaints of communities concerned near the mining site or the village in all cases. Also, the inclusion of a provision to supply quarterly inspection records to civilians on payment of fixed fees will increase the transparency in the functioning of the system and enable the aggrieved parties to make representations on accurate records to the authorities. Dates of quarterly inspections have to be published a week before in the concerned Department's website to invite public queries. Also, prior approval of Gram Sabha should be an additional requirement for permitting mining in a village.

Conclusion:

'Salus populi est suprema lex' - Public interest must always be the motivating factor behind any and every legislation despite any amount of economic gain arising from an activity. In the age of construction boom, the demand for sand is way higher than the supply reserved and sand inflow. But this cannot be a justification for excessive mining of existing resources; alternatives to natural sand have to be resorted to bridge the gap. The co-operative implementation and monitoring by the Central and State governments within their respective competence, keeping in mind the popular will and potential existential threats, is indispensable for sustainable development.

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