



**GLOBAL  
INITIATIVE**

AGAINST TRANSNATIONAL  
ORGANIZED CRIME

# SAND MAFIAS IN INDIA

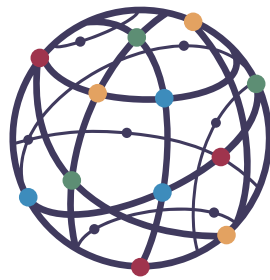
Disorganized crime in  
a growing economy

*Prem Mahadevan*



July 2019





# **SAND MAFIAS IN INDIA**

Disorganized crime in a growing economy

---

*Prem Mahadevan*

July 2019



Cover photo: Adobe Stock – Alex Green.

© 2019 Global Initiative Against Transnational Organized Crime. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means without permission in writing from the Global Initiative. Please direct inquiries to:

The Global Initiative Against Transnational Organized Crime

WMO Building, 2nd Floor

7bis, Avenue de la Paix

CH-1211 Geneva 1

Switzerland

[www.GlobalInitiative.net](http://www.GlobalInitiative.net)



# Contents

---

Introduction .....	1
What are the 'sand mafias'? .....	3
Sand: A diminishing resource .....	7
How the illicit trade in sand operates .....	9
Political complicity in India's illicit sand industry .....	11
Dividing communities from within .....	13
Violence and intimidation in the illicit sand industry: 'Disorganized crime' .....	15
Conclusion: A problem of large but unknown proportions .....	17
Acknowledgements .....	19
Notes .....	20



# Introduction

---

India has seen a tripling of demand for sand from 2000 to 2017, creating a market worth 150 billion rupees, or just over two billion US dollars. The country has the third-largest construction industry in the world, following those of China and the United States, accounting for 9 per cent of its two-trillion-dollar economy and employing more than 35 million people.<sup>1</sup> Given the dizzying rate of India's construction boom, guesstimates indicate a massive shortage of licitly mined sand.

This paper looks at patterns of sand mining in India and the impact that it may have on governance, security, the environment and the growth of entrenched criminal networks. The conclusions suggest that civil administration is retreating before a mafia-like nexus of political, business and bureaucratic interests, which connive to flout judicial orders. The secondary and tertiary effects of such activity bode ill for societal stability, even though a certain amount of (tenuous and often exploitative) employment is generated by illicit sand mining. The paper also highlights a policy conundrum: can India, which, paradoxically, combines widespread economic backwardness with sky-high consumer aspirations, find a model of environmentally sustainable development? Or is it doomed to exacerbate the harshness of already abysmal living standards experienced by its rural population (who make up two-thirds of its population) to satisfy the needs of its urban middle class?

Perhaps an answer may be found in recent surveys that suggest that, as with many parts of the world, income inequality in India has accelerated in tandem with economic growth.<sup>2</sup> A situation has been reached where the country's nine richest people own as much wealth as the poorer 50 per cent of a 1.3 billion-strong population.<sup>3</sup> Although 69 per cent of the workforce depends on the rural economy, its contribution to gross domestic product has shrunk to around 18 per cent. Crowded out of the employment market, between 1991 and 2011 an average of 2 035 farmers *per day* switched to other occupations.<sup>4</sup> Many from the rural agriculture sector found themselves compelled to migrate to urban centres, increasing the supply of cheap labour available for exploitative work as domestic servants and casual workers in the rapidly growing urban construction industry. Politicians and wealthier urban constituents were, meanwhile, delighted to have a large, submissive workforce for menial jobs. So were crime lords in mega-cities like Mumbai, who could recruit the more ambitious and hot-blooded among these rural immigrants, to serve as street-level muscle for various kinds of racketeering.

Despite its overall negative impact, organized crime also serves a necessary social purpose in India. It provides a livelihood to marginalized sections of the country's population, in the form of jobs outside the formal sector. Such an opportunity can be a financial lifeline when the domestic job market is not growing as rapidly as the economy, and is slanted in favour of candidates with inherited money and family connections.<sup>5</sup> While job-seekers from a privileged background can acquire professional credentials through elitist private schooling, others are left to fend for themselves in a country with no social-welfare system. Like much of the developing world, India jettisoned experimenting with socialism in the 1990s. It did not (and could not) create a safety net for those who were buffeted by structural changes in the economy. And due to historical coincidence, it faced an unexpectedly high standard of corporate governance to live up to.

Unlike China, which had the 'advantage' of being an authoritarian state, India opened its economy to free-market competition at a time when the West's own internal constraints to unbridled capitalism were being loosened. These constraints had been introduced after the 1929 Depression and had served for 60 years to moderate the worst excesses of capitalism. But with the end of the Cold War and the break-up of the Soviet Union, an 'anything-goes' mentality prevailed in the new era of digital globalization. Among the by-products of this era were high-tech feudalism, which allowed a handful of software experts (whether in India or anywhere else) to become part of the new aristocracy and concentrate the gains of open trade (and relatively open borders) to a large extent in their own pockets.

While public expectations soared in the 1990s and 2000s, the benefits of economic growth were mostly concentrated in the upper layers of Indian society. A social context emerged wherein middle- and lower-class families struggled to



assimilate a deeply wounding paradox: the increased visibility of bourgeois wealth around them, and their personal inability to access any of it. The same was true for other parts of the developing world, especially in Africa. Like India, a number of African states were compelled to tighten public spending in order to qualify for Western bailouts. Like India, they lacked the institutional strength to enforce their own laws upon a new class of oligarchs and kleptocrats who emerged from the ruins of Third World socialism. The result was a growing rift between privileged and populist, leading to the expansion of criminal economies and mafia organizations.

A 2002 Bollywood film based on real-world events in the Mumbai mafia showcased how a newly recruited gangster might view his work. Featuring the tagline, '*sab ganda hai par dhanda hai yeh*' ('everything is filthy, but this is still a job'), it suggested that a key driver of gang membership was a young person's need for security, both physical and financial, in a Darwinian social context oriented towards utilitarianism. The film was part of a stream of Bollywood crime movies that came out just as India's economic takeoff was being internationally recognized. Such films illustrated how the country's success story had a dark underbelly: young people born into poverty were a cohort of potential troublemakers available for hire. It is in this context that the rise of so-called 'mafias' engaged in extracting natural resources needs to be viewed.

Attention on 'sand mafias' has increased since around 2013 to the present, partly because of growing coverage of the phenomenon in the Indian media. What exactly led to the increase in sand-mafia activity is difficult to say. One possibility is that India's economic boom years in the mid-2000s led to a surge in demand for housing and this, in turn, drove up the demand for sand. As existing licit supplies of sand became insufficient for the rapid growth in demand, widespread illicit procurement of sand led to localized – and vocalized – environmental activism. Consequently, areas of rampant sand mining were identified as rural flashpoints by the urban-centric Indian media. Another possibility, which complements the first, is that expatriate remittances from the Indian diaspora in the Persian Gulf and North America – two regions with high levels of Indian immigration – fuelled middle-class demand for housing. This also drove up the construction industry's requirement for raw materials. Both hypotheses would suggest that the level of mining activity rose with disposable incomes, and with it, so did media coverage of the illicit trade in sand. By 2018, it was estimated that India needed to build 800 million square metres of urban area annually (larger than a city the size of Chicago), to cope with urbanization.<sup>6</sup> This would ensure that the availability of construction material remained a public-interest issue.

In itself, extraction of sand for construction is not a severe problem, due to gradual natural replenishment of river beds and deltas. Rather, the issue is the scale at which it occurs. If supply is to meet demand, illicit mining is seen – at least by some – as a necessary evil. By 'illicit', what is meant is extraction that is either unlicensed (i.e. illegal) or where the extraction process breaches restrictions provided by a mining licence issued by the authorities (i.e. extra-legal).

The increasing violence associated with both kinds of illicit sand mining now makes it a law-and-order threat. Since the late 1990s, when Indian police cracked down on elements of the Mumbai mafia for supporting jihadist terrorism, 'traditional' extortion-based organized crime has been migrating to the real-estate market. This has been the case in Mumbai, as well as other rapidly expanding cities, such as Bangalore. Hence, *sand* mafias are often connected with *land* mafias. Both are domestically oriented entities. Only the 'beach sand mafia' (more of which later in the paper) deals routinely with overseas business partners and therefore represents a fusion of transnational and organized crime.

Land mafias do not smuggle a commodity, but seize well-located real estate from its original inhabitants or occupants.<sup>7</sup> Threats of violence are issued to coerce the inhabitants/occupants to vacate a property, so that it can be used for a lucrative construction project.<sup>8</sup> It is here that sand mafias come in, as suppliers of material needed for construction. Although no ethnographic studies are known to have been conducted, it is reasonable to hypothesize that both sand and land mafias recruit from a common demographic of low-level musclemen.

Three broad issues are examined in this report: the political patronage that appears to facilitate illicit sand mining; harm caused by it to local communities; and violence meted out against protestors, environmental activists and civil servants opposed to it.



## Methodology

This paper relies on three categories of sources: media reports, interviews with experts and academic literature. Experts interviewed for this paper consisted of four journalists and one legal sand-mining contractor. The first journalist interviewed (who is identified in the endnotes as 'Source K') was a crime correspondent in Kolkata, in eastern India. Another interviewee ('Source V') served in the same role in Chennai, the capital of Tamil Nadu province.

The remaining two media interviewees (coded as 'Source S' and 'Source I') had been threatened for exposing a Tamil Nadu-based mining company. The last interviewee was a contractor ('Source G') in the province of Karnataka, which is adjacent to Tamil Nadu. This source narrated his experience of being threatened by the local riverine sand mafia. Information obtained from these five interviewees closely matched that found in open sources, albeit with additional details not publicly known.

Although the literature review generally provided few insights into illegal sand mining, one article examined the modus operandi of sand mafias, using data drawn from Indian press reports, totalling 75 relevant stories.<sup>9</sup> As such, the present paper is hoped to provide considerable added value to existing literature on illegal and extra-legal sand extraction.

## What are the 'sand mafias'?



**Sand mine in Tamil Nadu province**

Photo: Sandhya Ravishankar

There is no single overarching structure coordinating the activities of different sand extraction groups across India.<sup>10</sup> Each province, or even a locality within a province, may have multiple and competing sand mafias. Anecdotal information suggests that Tamil Nadu has perhaps the highest level of institutional penetration by a 'sand mafia' in India.

The need for muscle cannot be overstated. Sand mining is not only physically exhausting work, it is also dangerous due to the risk of drowning. With many areas having already been heavily exploited by previous mining activity, divers have to plunge ever-deeper towards river beds. They scoop sand

into buckets which are then pulled to the surface by boatmen. During such extraction, it is common for mining teams to be reflexively aggressive towards any probing parties. In the province of Maharashtra, where Mumbai is located, illicit sand miners earn almost four times every night what they would on the country's average wage.<sup>11</sup> Hence, their willingness to resort to violence or, at a minimum, physical intimidation if they sense a threat to their livelihoods. Their targets are typically local journalists, farmers and NGO workers, who know the exact locations where mining is done. Also vulnerable are local police officers, especially those at lower ranks.

The activity is not always conducted by a criminal gang. Like drug smuggling along the US–Mexico border, sand mining in India features a mixture of self-organized entrepreneurship by villagers, as well as hierarchically structured criminal actors. In areas with high levels of violent crime, mining activity assumes commensurately violent characteristics. A 2013 lawsuit filed by a government-supported advocacy group provides a working definition of what a typical sand mafia consists of: 'The illegal trade is driven by the unholy nexus between contractors, politicians, trade union leaders, panchayat (local officials) and revenue officials and corrupt policemen.'<sup>12</sup> Those unfamiliar with India's culture of religiosity might find the term 'unholy' bemusing, but it is a term used to describe any activity that



morally upright (and uptight) Indian middle-class commentators disapprove of. The above quote demonstrates that ‘sand mafias’ are loosely structured around a convergence of disparate actors in a transactional relationship.

Answering ‘what’ is a sand mafia is easier than identifying ‘who’ its components are. Indian media reports use the term loosely to denote anyone threatening journalists, NGO workers, government officials and community leaders who oppose illicit extraction of sand from a given location. In other words, those who extract sand illicitly qualify as a ‘mafia’ only once they have opponents to silence. If undetected or left unchallenged, they go about their business without much concern for either the local community or governmental regulations. There is no evidence suggesting that the ‘mafias’ are ethnically defined, as is the case with the Sicilian Cosa Nostra, or based on religious identities. What remains unclear is whether caste – a common variable in violence as far as rural India is concerned – plays any role in the recruitment policies of mafias.

Some officials at the local level appear to turn a blind eye to small-scale sand mining, seeing it as a way of allowing poor villagers to build affordable housing.<sup>13</sup> A typical sand mafia, on the other hand, uses earth-moving machinery to extract large amounts of sand. The distinction is important, because entry barriers to sand mining are low. It is an activity that does not require a ‘mine’, but only a team of diggers, hand-held tools, and vehicles for transport, such as a lorry or tractor-trailer. Unlike in the case of mining of ore, or rock-quarrying, sand extraction can be carried out on an opportunistic basis wherever suitable sand deposits can be found. Hence, politicians cannot monopolize the trade but have to contend with bottom-up competition. In certain areas, villagers whose traditional vocation – farming – has declined have switched to illegally lifting sand and selling it to construction firms. Media reports suggest that remuneration varies between 5 000 and 10 000 rupees (US\$75 and 150) for a fully laden lorry, which is a good income for a unit of work in rural India.<sup>14</sup>

“One factor contributing to the capacity for violence among the sand mafias is the increased presence of firearms at sand-mining sites.”

In certain areas, youths have purchased lorries after taking out bank loans, and thereafter relentlessly worked to pay off their debts, making several deliveries daily. They seem aware of the illegality of their actions. Journalists who interviewed them encountered varying levels of suspicion and hostility.<sup>15</sup> However, this is not the same as ‘mafia-style’ criminality, which can be more calculating and deadly.

One factor contributing to the capacity for violence among the sand mafias is the increased presence of firearms at sand-mining sites. Media reports speak of private security guards firing guns into the air to scare off local protestors.<sup>16</sup> Since obtaining a firearms licence is a laborious process in India, the availability of weapons at mining sites indicates they are procured illegally. An alternative explanation is that mining contractors, whether operating extra-legally or illegally, have enough bureaucratic clout to acquire gun licences through the official process. And a third possibility is that the ‘guards’ are in fact career criminals who have been labelled as security watchmen by mining companies in order to give them a certain amount of legitimacy while intimidating protestors. It has been reported that assault rifles stolen from government armouries have found their way to criminal gangs in the chronically lawless province of Bihar. Bihar has also witnessed several hundred killings over the illicit sand business.<sup>17</sup> The town of Munger in particular is a hub for illegal arms trading.<sup>18</sup> Considering the degree to which organized crime is entrenched in the political fabric of this province, there is little chance of effective police intervention. Extrapolating from this example, it is thus conceivable that an arms race may break out between petty gangsters for control over sand deposits and/or the right to ‘tax’ sand transportation in other areas.

Like most forms of organized crime, sand mining in India takes advantage of domestic jurisdictional boundaries. Sand miners often claim that any cargo they are transporting has been purchased elsewhere.<sup>19</sup> Therefore, only if a mining





operation is witnessed at the moment of extraction and loading does a legally watertight case for police action exist. To minimize their vulnerability at such moments, 'sand mafias' usually do the extraction work at night, when there are fewer witnesses and when approaching vehicles can be spotted by their headlights. Such operating conditions create a menacing atmosphere, which is almost as effective in deterring snoopers as death threats can be.<sup>20</sup>

The ecological damage caused by extractive activity in the countryside, whether licit or illicit, has never been a concern for government policymakers because it is seen to affect only the impoverished. A 2019 report in Pakistani newspaper *Dawn* has observed how the practice of 'rat-hole mining' is prevalent in India. Such mining involves constructing narrow tunnels down which small-bodied persons, such as children and young adults, are lowered to extract coal. The miners are sometimes illegal immigrants from neighbouring countries, such as Bangladesh or Nepal, or Indian citizens from the poverty-stricken eastern provinces. Although banned for the last five years, the practice has been continuing. It attracted fresh notoriety in December 2018 when 15 miners perished in a collapsed shaft in the province of Meghalaya. Roughly 5 000 rat-hole mines were believed to operate illegally in this province alone, with political patronage.<sup>21</sup> The plight of those working in such mines, as well as the communities that are affected by extraction, has been left virtually unreported.

NGOs such as the Awaaz Foundation in Mumbai have highlighted the activities of India's so-called sand mafias. Occasionally, opposition politicians have used the work of these NGOs opportunistically to embarrass rivals in government. Not to be outdone, government ministers have sporadically taken steps to regulate mining. Yet, such initiatives on the part of serving ministers may be motivated by more than concern for the public good: they also offer two collateral benefits. First, they raise revenue for extravagant infrastructure projects. Ironically, these projects are precisely the reason that sand demand is boosted in the first place. The vast quantities needed by India's construction sector require that only reversible half-measures be implemented to restrict mining, leaving room for resumption at a later date. Any permanent restrictions, if enforced, would drive housing prices beyond affordable levels for the property-hungry middle class. The second collateral benefit is more cynical: by regulating sand mining, politicians can periodically consolidate the market shares of their favoured proxies. Squeezing out lesser competitors, including 'artisanal' miners, drives up sand prices and maintains the profitability of illicit extraction.<sup>22</sup>

### The special case of the beach sand mafia in Tamil Nadu



**Large-scale extraction of beach sand has been reported in the province of Tamil Nadu**

Photo: Sandhya Ravishankar

but also federal ones, because the export of rare earths is a subject that New Delhi has direct jurisdiction over. Consequently, the levels of bribery and corruption involved in beach sand mining are much higher (in terms of both the amounts of money exchanged and the position of the recipients). There is also more sophistication in the methods used to silence opponents and troublesome journalists.



The largest beach sand mafia is believed to exist in Tamil Nadu, in the form of a single company engaged in rare-earth extraction and export. Being a unitary entity controlled by a single family, it comes closest to an Italian-style mafia, with a defined territorial space, subsidiary front businesses and high-level political connections. It has governmental permission to extract sand, but is believed to be far exceeding the quantities permitted. Two of the journalistic sources interviewed for this paper allege that they have been threatened for reporting on its activities, including death threats and ongoing legal harassment. Yet, the mafia so far seems unwilling to go the fullest length possible and physically eliminate these journalists. There might be three reasons for its 'restraint'.

First, the businessman who heads the beach sand mafia in Tamil Nadu has something to lose: his commercial empire. Its organizational structure would be easy to trace and break up if the provincial government decides to move against it. Were he to order the death of a well-known journalist, local politicians might have an excuse for engineering a police crackdown and seizing his assets. Lately, the mafia boss is believed to have fallen from favour with a political party that he was once close to, and he may therefore be more vulnerable to police action. Second, killing a journalist who has reported on a single-point issue would be counterproductive, since there would not be many suspects. Lastly, the mafia head is said to have bought the silence of other journalists in Tamil Nadu, and especially in the southern areas of the province where his mining activities occur, through generous cash handouts. Even so, they have compromising details of his activities. Killing one of their fraternity might alienate some journalists to a degree where they would leak information to the national media, which would be seriously damaging.<sup>23</sup>

In this regard, Tamil Nadu is culturally different from Uttar Pradesh or Madhya Pradesh, where extreme poverty and violence make it easier to muzzle the local media. The preferred tactic of harassment in the country's south is to take the legal route and drain any troublesome journalists' finances in lengthy litigation processes, which also jeopardize their job security. However, no such tolerance is extended for an 'ordinary' person who agrees to be interviewed by journalists. A relatively innocuous mention of sand mining seems sufficient to earn a sound thrashing. Through control over information, an organized-crime group may carve out its own private mini-state. The port of Tuticorin, in Tamil Nadu, is believed to be under the grip of a single caste, from which the beach sand mafia originates.<sup>24</sup> Excess shipments of rare earths have reportedly been moved among legitimate cargoes carried by vessels owned by relatives of the mafia boss.

Between 2013 and 2017, the Tamil Nadu beach sand mafia extracted rare earths in defiance of a court ruling banning such activity. The ruling was not enforced by the provincial authorities, thus allowing the company that fronted for the mafia to claim that it was not violating the law. From 2017 onwards, pressure from governmental quarters mounted, perhaps as a result of political intrigues, and the ban was put into effect. Thereafter, the mafia allegedly switched from extraction to transportation. Reportedly, it is now extracting rare earths from beach sand that it had previously stockpiled over several years, and trucking the products to seaports outside Tamil Nadu.<sup>25</sup> One such port is Vizag, in neighbouring Andhra Pradesh.

Meanwhile, the effect on local communities has been severe. Along a 50-kilometre stretch of the Tamil Nadu coastline, industrial-scale extraction of beach sand has led to the destruction of fisheries. Loss of livelihood has prompted violent reactions from local fishing communities.<sup>26</sup> In neighbouring Kerala, the situation is similar, although the players are not. Here, beach sand is mined for rare earths by Indian public-sector companies, operating with support from the provincial government. Hence, they cannot be described as 'mafias' but more as predatory agents of the state apparatus. Even so, their impact would merit the term. Along one part of the coastline, entire villages have had to be abandoned due to the threat of erosion. Within a single village's jurisdiction, 6 000 fishermen and their families have been involuntarily relocated; meanwhile, hundreds of others have been displaced without compensation. Flooding is now a growing risk: a local activist told reporters that in one area, the sea had moved in from the original shoreline by as much as seven kilometres over several decades.<sup>27</sup>

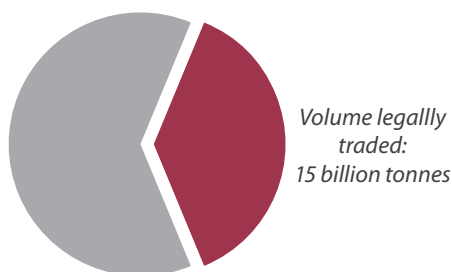


# Sand: A diminishing resource

Why does an illicit market for sand exist in the first place? Worldwide, sand is the second most exploited natural resource (water is the most consumed), and the most traded commodity by weight. Together with gravel, sand is the most heavily mined commodity, accounting collectively for 85 per cent of global mining activity. It is used in the production of concrete and cement for construction, as well as in glass, ceramics and electronic devices.<sup>28</sup>

The total volume of sand extracted globally every year is estimated at over 40 billion tonnes.<sup>29</sup> Of this, only about 15 billion is thought to be legally traded, for a market value of US\$70 billion.<sup>30</sup> The remainder is believed to originate from illicit mining. During the last 25 years, the volume of sand traded has increased six-fold, largely due to demand in Asia.<sup>31</sup>

*Global volume of sand extracted each year: over 40 billion tonnes*



*Annual global value of the sand market: US\$70 billion*

Depending on its chemical composition and where it originates, sand may contain rare earths, such as ilmenite, which is used to make titanium for nuclear and aerospace industries.<sup>32</sup> Meanwhile, sand used for construction is mostly of riverine origin. Desert sand is unsuitable for construction work, being too rounded by wind erosion to act as a bond in cement.<sup>33</sup> The overwhelming weight of industry's demand falls on riverine, coastal and inland deposits.<sup>34</sup> Since these can take thousands of years to form, sustainable mining is essential. However, global urbanization rates have placed unprecedented strain on what are now recognized as finite sand reserves. From just 2011 to 2013, China used as much sand for its breakneck-speed development as the United States did during the entire 20th century.<sup>35</sup>

Around half of world demand for sand is now driven by China, which also has the world's largest sand mine, Poyang Lake, which yields a staggering 236 million cubic metres annually, making for a production volume greater than the three biggest American sand mines combined.<sup>36</sup> Meanwhile, the tiny state of Singapore, which has been steadily expanding through its ambitious land-reclamation projects, has emerged as the world's biggest sand importer, since it lacks the vast domestic reserves that China possesses. Singapore is now 22 per cent larger in surface area than it was at the time of independence from the UK in 1965.<sup>37</sup> Worried about their own needs, its neighbours have banned sand exports to the country. Vietnam in particular is concerned that its own sand reserves might run out as early as 2020, due to transnational smuggling.<sup>38</sup> Such fears might not be exaggerated, as a sizeable discrepancy exists between official sand imports claimed by Singapore, and total exports to Singapore reported by its neighbours. In certain cases, as with Malaysia, the Singaporean import statistics are improbably low, while, in Indonesia, over two dozen islands have disappeared as a result of illegal mining, with Singapore being the suspected beneficiary.

The demand for sand is expected to rise with world population. The United Nations estimated that, by 2030, the world will have 40 mega-cities (i.e. those with a population of 10 million inhabitants or more), as opposed to the 31 presently existing. Urbanization will accelerate as young people migrate to towns in search of employment. While around 4 billion people now live in cities and towns, that number is projected to increase by 2.5 billion over the next three decades, imposing a massive strain on housing.<sup>39</sup>

As far as many social scientists are concerned, this would merely represent an organic process of resource redistribution from periphery to core. Such patterns can already be found at a global level, with Chinese firms, for example, mining for sand on African beaches, to provide a key input for its mammoth construction drive needed to



house more and more rural dwellers in cities.<sup>40</sup> Such mining activities take place with the support of local business partners, eager to receive handouts from the cash-rich Asian giant. As is the case with Singapore and its neighbours, it is important to note that illicit trade in sand requires local actors to do the actual extraction and run the risks inherent in transporting it. In this regard, sand mining is both a result of rural poverty and a cause of it due to environmental degradation.

Demand for sand in India will continue to rise rapidly if efforts are made to follow through on wildly unrealistic government pledges to provide housing to all citizens by 2022. It is estimated that 110 million housing units would have to be built by that time, including making up a shortage of 60 million units that existed as of 2014. Some 70 per cent of this construction activity would be concentrated in 10 of India's 29 provinces.<sup>41</sup> Not coincidentally, these are also provinces that are often mentioned in media reports on sand mining.

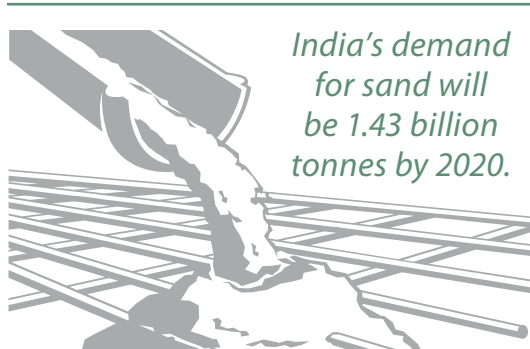
### India, showing provinces, and hubs reportedly associated with illegal sand mining



Map source: Global Initiative Against Transnational Organized Crime







*India's demand for sand will be 1.43 billion tonnes by 2020.*

*In 2014/15, the country was producing just 2.1 million tonnes.*

According to one forecast, India's demand for sand will be 1.43 billion tonnes by 2020. However, official statistics for 2014/15 revealed that the country was producing only 2.1 million tons.<sup>42</sup> Even allowing for exaggeration, the fact remains that the pace and scale of urban construction in India will place enormous demands on finite sand reserves. Whereas in 1900, 90 per cent of Indians lived in villages, mostly built from mud and thatch, by the middle of this century, that figure will be around 50 per cent. Although this is still extremely backward for a major economy, the rural to urban population movement shows how India is changing under the impact of long-overdue reforms (see Figure 1).

**Figure 1:** Estimates of the percentage of urban population in India, relative to the global average (1950–2050)



Source: Amitabh Kundu, Trends and processes of urbanisation in India, International Institute for Environment and Development, September 2011, 7, <http://pubs.iied.org/pdfs/10597IIED.pdf>

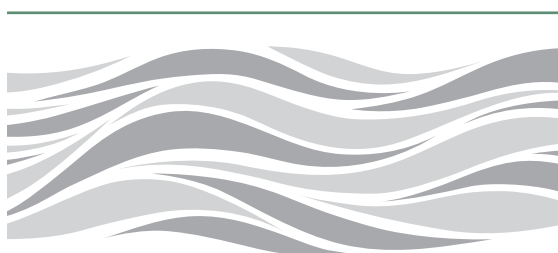
## How the illicit trade in sand operates

The linkage between increasing household wealth in India (which is not the same as prosperity, since the country remains statistically extremely poor overall) and sand mining is strong. Taking the specific example of Kerala province, in the south of the country, it is evident that mining intensity is positively correlated to the scale of construction activity. This, in turn, is correlated to the rate of emigration, as expatriate remittances have made cities that were once backwaters, such as Kochi, among India's most densely populated urban centres. The reason for the construction boom is not just population increase, however – although that has been a factor; equally important has been the break-up of the so-called joint family system.<sup>43</sup>



According to this long-standing Indian tradition, multiple generations of a single family would live together (or if they got fed up of each other's company, build a multi-storey house, with each family sub-unit having its own private space). Those Indians who had the opportunity to work abroad, as did many middle-class Keralites, became accustomed to the norms of developed countries, where a nuclear family would have its own separate house or apartment. They imported this ideal back to cities like Kochi, whose suburbs subsequently saw a mushrooming of residential projects for the nouveau riche.

The result was a substantial increase in pressure on natural resources, among them sand, as each residential unit duplicated the resource demands that had previously been posed by a single, overcrowded household. Furthermore, the newly moneyed upgraded their lifestyles by hiring domestic servants from the growing supply of inexpensive rural workers seeking jobs in cities. All this led to unsustainable pressure on the land's ability to support its inhabitants.



*The rate of sand extraction from a single river in Kerala has been 40 times the replenishment rate*

According to one estimate, the rate of sand extraction from a single river in Kerala has been 40 times the replenishment rate.<sup>44</sup> The highest levels of extraction are in areas next to Kochi. This is because those who trade in sand, whether legally, illegally or extra-legally, usually seek to contain operating costs by minimizing transport distances to the market.

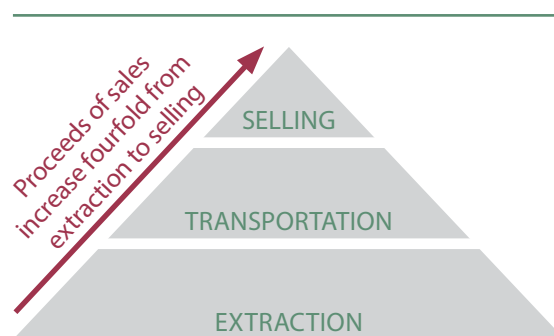
Sand mining occurs throughout India to a greater or lesser extent, in both prosperous and impoverished provinces. Owing to the country's socialist past, which was bureaucratically obstructive towards small and medium-scale entrepreneurship and whose legacy did not disappear after the economy liberalized in 1991,

obtaining a licence for sand mining is difficult. Thus, as mentioned, a combination of high demand and insufficient licit supply (due to restrictions that exist mostly on paper) propels builders towards illicit procurement of sand.

There are three phases in the illicit sand business: extraction, transportation and selling. Like a pyramid, the stakeholder base is widest at the bottom (the less lucrative extractive phase) and tapers off to a narrow group of profiteers at the top (selling phase). Among the extractors are villagers, as well as independent contractors and legitimate mining companies that exceed the terms of their licences. Those involved in the actual extraction – at the base of the value chain pyramid – get very little of the sale proceeds, with the bulk going to those higher up the chain and closer to the point of sale. Transporters are usually contractors and mining companies, although there are reports of enterprising village youths ferrying sand in private vehicles to marketplaces and selling it directly to builders. At the final stage (sales), those who buy sand from transporters and resell it to builders are all connected to political elites (more of which below).<sup>45</sup>

The daily yield of illicit sand from a single site appears to vary from anywhere between 150 and 500 lorry loads a day. Prices increase approximately four-fold from the time of extraction to the point of selling.<sup>46</sup> This is due to the cost of transportation and storage, as well as bribes paid to local police and administration officials. In return for a kickback, policemen sometimes issue identification markers to sand lorries to ensure they are not interdicted by their colleagues at highway checkpoints.<sup>47</sup>

Interestingly, the sales price of illicitly mined sand is about half that of its legally mined equivalent. This is



*Three phases in the illicit sand business*



because of the higher wages paid to workers who manually dig the sand (in the case of illegal operations, earth-moving machinery is used, in violation of local laws); royalties paid to government; and bribes that are demanded by local officials and political parties for permitting even legitimate commercial activity. All these combine to push up procurement costs borne by the legal trade.<sup>48</sup>

“The actual miners (those involved in the extraction) get very little of the sale proceeds, with the bulk going to those higher up the value chain and closer to the point of sale.”

One of India's better-governed provinces, Haryana is not known for having an active sand mafia. This, in itself, means little, as there is a culture of silence around sand mining in parts of the country, where mafias have allegedly created 'no reporting' zones.<sup>49</sup> Whether the local press is too intimidated to report on the issue, or whether the matter is not considered worthy of discussion seems to depend on the specific area where mining occurs. For example, near large cities like Delhi, the focus of media coverage tends to be metropolitan political and civic affairs. These can crowd out sand mining as a newsworthy item, since it is an activity that occurs in more remote and impoverished areas. Hence, a lack of reporting on sand extraction does not automatically mean that no extraction occurs.



*22 out of 29 of India's provinces experience illicit sand mining*

In the specific case of Haryana, an anthropological survey found that in just one district, illegal sand miners were making a daily profit of 500 000 Indian rupees (equivalent to US\$7 370).<sup>50</sup> At least 22 other provinces out of 29 have been identified with high levels of illicit sand-mining activity, leading one to wonder if the true scale of extraction is really known. Maharashtra province, which forms part of the western coast, has the highest reported number of illegal mining cases.<sup>51</sup> It is one of the 10 provinces mentioned earlier that is projected to have a construction boom. However, what is not clear is whether Maharashtra experiences most mining activity, or if the police are just more diligent about record

keeping than elsewhere in India. Importantly, the actual miners (those involved in the extraction) get very little of the sale proceeds, with the bulk going to those higher up the value chain and closer to the point of sale.

## Political complicity in India's illicit sand industry

Sand mafias in India, like organized-crime actors anywhere, invest in cultivating a political roof, which allows them to stay in business. In India, the sand mafias are helped by two constitutional provisions. Under India's federal system, the management of natural resources *and* the maintenance of public law and order are responsibilities of the provincial governments. The central government has little say in these two policy areas, unless they impinge on national security. Such wide discretion allows local politicians to not only decide how to allocate mining licences, but how far police investigators may probe irregularities.

Certain mineral-rich provinces, like Odisha in the central-eastern part of the country, appear heavily controlled by an alleged politics-business alliance. For example, a 2009 media report found that government departments tasked to stop illegal iron-ore mining were chronically understaffed. There were few enforcement personnel on the ground,



and checkpoints where lorries could be inspected were wholly inadequate, found the report.<sup>52</sup> Opposition parties accused the Odisha local government of ‘moneybag industrialisation’, a charge that they would likely have faced themselves in other parts of the country.<sup>53</sup>

In some cases, the mining activity is sustained by the groups’ capacity for violence. Thus, the Chambal River valley in Madhya Pradesh province, a region with a long history of rural banditry, has become one of the deadliest locations for sand mining. Between 2013 and 2018, police patrols were fired upon no fewer than 150 times by sand miners.<sup>54</sup> The ‘mafia’ in this part of India is brazen because Madhya Pradesh is a political backwater where little attention is paid to open defiance of law-enforcement personnel. Here, both of the two largest parties, the centre-right Bharatiya Janata Party and the centre-left Indian National Congress, are viewed by local NGOs as equally complicit in sand mining. It is noteworthy that Madhya Pradesh, of all Indian provinces, has been the one most frequently criticized by the National Green Tribunal (a federal court established in 2010 to mitigate environmental damage caused by commercial activity). Despite instructions by the tribunal to ban sand mining, the Madhya Pradesh administration first appealed unsuccessfully against the instructions and then hardly enforced them.<sup>55</sup>

A similar situation prevails in Uttar Pradesh, the country’s most populous province, and arguably its most important politically. Uttar Pradesh has been the site of several murders purportedly connected to sand mining. An under-resourced police force, coupled with a tradition of violent conflict between different castes and religious communities, provides a favourable backdrop for silencing witnesses. In 2017, a local politician’s son was accused of burying alive two children who had stumbled upon an illicit sand-mining operation. Large-scale protests caused the police to register a case, but the family of the accused man alleged he was being scape-goated in a caste vendetta. Given the overall degree of criminality in Uttar Pradesh, the Delhi-based national media did not make much effort to follow up on the story to establish which version was ‘true’. On rare occasions when media interest has been sustained, such as in the controversial suspension of a female government administrator who was shutting down sand mines, politicians have dissimulated about the case’s specifics until the story eventually dies.<sup>56</sup>

“Rising sand prices are creating a chain of mafia-like violence, as career criminals first get drawn into ‘taxing’ the business and then fight to seize one another’s turfs.”

What is happening in India is, to some extent, a microcosm of a global trend: across the world, rising sand prices are creating a chain of mafia-like violence, as career criminals first get drawn into ‘taxing’ the business and then fight to seize one another’s turfs.<sup>57</sup> When confronted by police, they may initially become quiescent, but then invest in the capability to hold their ground – principally by acquiring firearms. In countries like India, they are assisted by the reluctance of political figures to ‘militarize’ policing.<sup>58</sup> Concerns over potential human-rights abuses have led provincial governments – who, as mentioned earlier, have responsibility for maintaining law and order – to avoid equipping their beat policemen with firearms. In itself, this is laudable, but it has the downside of leaving police officers defenceless if they chance upon armed criminals. Lacking the basics of self-protection, and aware of the political connections of many gangsters, police officials are understandably cautious about investigating sand mafias.<sup>59</sup>

The abundance of sand supply depresses profit margins and provides an incentive for government ministers to stay one step removed from the illicit extraction side of the business. Instead, they indirectly patronize it by maintaining close ties with their client base – the builders who purchase illegally and extra-legally mined sand. Not coincidentally, these builders sit atop large construction companies that undertake infrastructure projects offering multiple opportunities for corruption. In return for donations to political parties, the builders exploit their





proximity to policymakers and thus deter law-enforcement personnel from pursuing them. In Karnataka, numerous complaints filed by village leaders have been ignored by local authorities. According to one report, between 2015 and 2017 an average of 16 cases were registered daily by the province's Department of Mines and Geology against sand miners.<sup>60</sup> However, these were not followed up and witnesses were pressured to withdraw their statements.

Karnataka is believed to be one of India's most systemically corrupt provinces, with the mining sector especially vulnerable to corruption. One of the interviewees for this paper operated a legal sand-extraction business in coastal Karnataka. He claimed that the province's sand mafia is the poorer cousin of a stone-quarrying mafia. The latter is directly controlled by politicians, while the former is indirectly controlled, through business partners of the same politicians. By keeping illicit sand mining active, those invested in selling stone ensure the robustness of Karnataka's real-estate market, one of the most lucrative in India, and secure their ongoing provision of building materials.<sup>61</sup> The province also has large deposits of iron ore, which are under the grip of a powerful family-based mining cartel whose patriarchs are well-known politicians.<sup>62</sup> Lastly, the provincial capital, Bangalore, is believed to be in the grip of highly influential land mafias connected with political parties. Being a hub of the information-technology industry, Bangalore's real-estate market has seen an influx of foreign companies looking to outsource backroom operations to India. With official ways of obtaining property being cumbersome and usually involving litigation by the owners, the city's land mafias step in to speed up the pace of business – for a fee.

“In effect, permission to mine sand in India – legally or otherwise – means being part of a web of patronage.”

In effect, permission to mine sand in India – legally or otherwise – means being part of a web of patronage. The formal letter of the law counts for little. To sustain their own profits, politicians restrict the number of mining permits issued to legitimate traders in order to push up sand prices and boost the profits of illegal and extra-legal mining. By periodically ordering police crackdowns on the lowest, artisanal level of the supply pyramid, they concentrate revenues in favour of well-connected companies. One writer has noted that, in previous decades, political processes in India were underwritten by big business but, recently, mafia money has assumed a more prominent role.<sup>63</sup>

## Dividing communities from within



**A sand mine in Tamil Nadu** Photo: Sandhya Ravishankar

In 2002, an NGO identified 15 negative consequences of sand mining in the province. These included depletion of the water table, damage to crops, loss of livelihood to agricultural workers and infrastructural damage caused by undermining foundations.<sup>64</sup> Most of these effects have been demonstrated, to varying degrees, in areas where sand mining is rampant. But since they are long-term 'trends' rather than discrete 'events' they do not attract regular media coverage. The only exception is infrastructure failure, such as bridge collapses, which have occurred on remote roads. According to some commentators, it is





- Revenue loss from coastal sand:  
US\$2.7 billion
- Revenue loss from riverine sand:  
US\$4.1 billion

only a matter of time before a major tragedy happens – for example, a railway bridge giving way under a passenger train. But, for the most part, environmental damage caused by sand mining is of little concern to the average Indian.

Only communities directly affected by the negative fallout have protested, supported by NGOs. Interestingly, in some provinces members of the local Communist Party have highlighted the destructive consequences of sand mining as a way of attacking capitalism more generally. The combined effect of farmer agitation, NGO activism and political advocacy have prompted Indian courts to take a mostly objective approach to sand mining. In Tamil Nadu, the judiciary has sought to impose restrictions on mining activity. But sleights of hand are common. Local administrators argue that environmental

clearances from the central government are unnecessary because they are capable of supervising sand extraction by themselves. To conceal the extent of lost revenue from illicit mining, they have stonewalled requests for information about the amount of sand being extracted. One court noted that the ‘actual statistics appear to have been buried deep within the very same sand’.<sup>65</sup> Unofficial estimates put the province’s multi-decadal revenue loss from coastal sand at anywhere between 200 and 300 billion rupees, and from riverine sand at 300 billion rupees (US\$2.7 and US\$4.1 billion, respectively).<sup>66</sup>

Perhaps as serious as the loss of revenue from illicit sand mining has been the depletion of groundwater. Tamil Nadu, like all Indian provinces, is dependent on seasonal rainfall to irrigate its farmland and sustain its drinking-water supply. For 15 of the last 18 years, monsoon rains have been deficient, and, this, together with unregulated mining, has led to over-exploitation of groundwater. One of the beneficial effects of riverine sand is that it provides a storage space for recharging the water table. Every cubic metre of sand provides half as much space for water to gather in underground aquifers. Sand also filters water and prevents it from turning saline, which otherwise happens when the water table is severely depleted. Unrestricted sand mining has contributed to agrarian distress in large parts of India. In the specific case of Tamil Nadu, it has also added to the shortage of drinking water and put a strain on relations with neighbouring Karnataka, due to disagreements over the sharing of river water.

Even so, community anger at sand miners tends to hinge around whether their activities provide employment to the local population, and to what extent. On rare occasions when mining licences are issued, they may stipulate that local inhabitants be hired for extraction work. For agricultural workers already struggling to make ends meet, an offer to lift sand is too good to pass up. By providing jobs to some villagers and leaving others to fend for themselves, mining contractors polarize communities. Critics have noticed how they often play upon caste divides to split communities. Particular effort is made to recruit members of marginalized castes as cheap labour, pitting them against the upper-caste landed farmers whose fields can be despoiled by heavy traffic. On the other hand, in certain places, it has been to the benefit of outsiders to cultivate the goodwill of wealthy landowners, since these are the social stratum closest to being bought off by an opportunity to make fast money and provide their children with a better life.<sup>67</sup>

Local contexts therefore determine the precise methods used by a sand mafia to win grassroots support. In southern India, which is relatively better policed than the northern provinces, extraneous actors make an effort to study the specific needs of a community. From discussions with village elders, sand contractors can determine whether the best way to buy goodwill is to build a road or a well, or donate money for a religious festival.<sup>68</sup> For the most part,



they seem to prefer dividing communities from within. There are reports of private arrangements being made with village headmen and other notables.<sup>69</sup>

In such situations, the financial benefits of sand mining do not percolate down to the larger community, but efforts to collectively seek redress for damages through legal means are stymied before they can gain momentum. On a number of occasions, legal cases filed by villagers have stalled due to sudden disappearance of the complainants. In the absence of foul play (always a potential factor), the loss of direction and purpose when a case collapses in the Indian judicial labyrinth leads to demoralization among opponents of sand mining. They understandably become sceptical of further activism.

Meanwhile, politicians claim to oppose criminal activity, but even if they are not directly profiting from it, are too dependent on that same activity to raise living standards for their constituents. Much as smuggling is secretly tolerated by some regimes worldwide for generating employment and bringing in additional revenue, so is sand mining tolerated by an Indian political system that stakes its legitimacy on a 'development' agenda.<sup>70</sup>

NGO workers have noted that in certain areas, 'sand mafias' have either penetrated or created so-called 'self-help groups' consisting of village women, which had been established ostensibly to combat mining. Andhra Pradesh province, for instance, had launched an ambitious scheme to empower rural women by granting them mining rights and providing financial support to the tune of 500 000 rupees per self-help group. The rights were provided, but, often, the money was not. Vehicles were not dispatched to collect the sand, and if they were, they were not tracked by global positioning systems as promised, nor were they under closed-circuit television surveillance while travelling along highways. Police protection was not provided against threats from villagers who had previously benefited from illicitly mining sand. Neither were the women trained in financial management.<sup>71</sup> For all these reasons, it became possible for sand mafias to infiltrate the groups and control them by proxy, in effect benefiting from the administration's own incompetence.

At a more general level, provincial governments follow a self-contradictory policy of 'banning' sand mining by private individuals, asserting that only the state has the right to extract sand. But thereafter, citing a lack of in-house capacity to do this, the same administrations outsource sand extraction to private contractors.<sup>72</sup> The net result is to criminalize artisanal mining by villagers, but leave contractors and large companies free to continue as before with the added benefit of reduced competition.

## **Violence and intimidation in the illicit sand industry: 'Disorganized crime'**

There is no single 'sand mafia' in India, but rather a motley collection of actors who extract sand either illegally or extra-legally. As such, their methods of dealing with inquisitive government officials, troublesome villagers and environmental activists differ greatly. Local conditions determine how far sand miners – and their clients in the construction industry – may go to neutralize opponents. Usually, officer-cadre policemen and administrators are not physically eliminated. Doing so would risk attracting media attention and the professional wrath of the deceased officer's colleagues. Instead, they are discredited through smear campaigns in the media. Contractors merely need to lobby with politicians and arrange for the officer to be transferred to another location.

Ironically, government officials have sometimes been moved for doing nothing more than implementing politicians' own orders to restrict sand mining. In one case in Madhya Pradesh, the government attempted to transfer a district administrator named Girish Sharma, who took rather too literally a formal directive to investigate illicit sand extraction. He submitted a report that a state-owned company was using a private firm to conduct extra-legal mining. Opposition politicians seized upon the report, and the ruling party tried to bury the matter by dispatching Sharma to a new post. When he obtained a court order cancelling his transfer, the government divested him of responsibility for any further surveys of mining activity.<sup>73</sup>



Northern and central India have a more entrenched gun culture and tradition of violent – albeit mostly disorganized – criminality than the south.<sup>74</sup> As such, attacks on law enforcement are more common in those regions. There are multiple criminal interests who may wish to eliminate troublesome police officers. With a plethora of potential suspects, the actual attackers' chances of escaping conviction are commensurately higher. In the Dhar and Dewar districts of Madhya Pradesh, illegal arms-manufacturing factories sell weapons to gangs both within and outside the province. Some of these firearms have appeared in neighbouring Rajasthan, emboldening local gangsters to seek out violent confrontations with the police and thereby build street credibility.<sup>75</sup>

To overcome local opposition, contractors who illegally mine sand cultivate those village youths with no employment prospects. They accordingly build up a reserve of muscle-power, to be used if problems develop between the contractors and the village leadership. Anecdotal evidence suggests that contractors are also not above trucking in hired toughs, if they cannot subvert locals. Sand mafias in Madhya Pradesh, as well as neighbouring Uttar Pradesh and Maharashtra, have been brazen enough to burn investigative reporters to death. One of the murdered journalists was described by his colleagues as having committed suicide. An interviewee told the author of this paper that all it took for the members of the local sand mafia to distort media reports were bribes to the tune of 20 000 rupees (around US\$280).<sup>76</sup>

“Sand mafias in Madhya Pradesh, as well as neighbouring Uttar Pradesh and Maharashtra, have been brazen enough to burn investigative reporters to death.”

Meanwhile, in Bengal, police officers have been mobbed and beaten for attempting to fulfil government orders to restrict sand extraction, while rural administrators are vulnerable to being killed. It is important to note that such events have happened at a time when the provincial government is considered resolute and capable of enforcing its writ over the bureaucratic apparatus.<sup>77</sup> One can only imagine what would happen under an 'irresolute' government.

All this is not to suggest that civil servants are immune from physical danger in the south of India. In 2015, DK Ravi, an administrator responsible for commercial taxation in Karnataka, was found dead under mysterious circumstances.<sup>78</sup> Ravi had previously been transferred from a district where he had made himself unwelcome by pursuing local politicians engaged in land-grabbing. He had also attempted to restrict sand mining. These efforts won him popular support from villagers but created a strong lobby for his removal from office. Upon arriving at his new posting in Bangalore, Ravi set about raiding construction firms that were engaged in tax evasion. Shortly before his death, which was ruled as a suicide by police despite widespread scepticism of this verdict, he had allegedly been planning a fresh round of raids on politically connected builders. His case demonstrated that even senior officials could, under the right circumstances, die mysteriously if they happened to upset enough powerful and well-connected people.

Areas with sand-mining activity also have an increased risk of tragic road accidents, due to the volumes of traffic on roads where pedestrians and livestock crossings are unmarked. While, for the most part, such accidents are genuinely inadvertent, on occasion high-risk government servants have been 'accidentalized'. One media report has noted how administrative and tax officials who try to investigate organized crime often seem to have fatal encounters with sand-carrying lorries.<sup>79</sup> Police records treat such events as instances of rash driving, and the likelihood of them being targeted assassinations is not seriously examined. A common response by village headmen and police stations when queried by journalists about sand mining is that it is not a serious local concern. Upon being pressed, they may concede the existence of previous mining activity, but this admission is invariably followed by a qualifying statement that such activity is no longer ongoing.





A headman in Uttar Pradesh's Gautam Buddh Nagar district, close to Delhi and a hive of sand mining activity, offers an interesting perspective on mafia–police relations. He claimed that the local sand mafia pays a monthly bribe of 50 000 rupees to the police station and thereafter treats policemen as it wishes. This extends to beating up patrols that do not honour the 'arrangement' and try to stop mining activity.<sup>80</sup> Given that India has a low police-to-population ratio, at over 1:700, it is hardly surprising that police station chiefs avoid confronting the issue of sand mining. Even when they are compelled to carry out raids (as a result of civil activism or media exposés), the miners get advance warning from informers planted along the routes that police vehicles use.

Meanwhile, threats and violence are used against local NGO workers who track patterns of illicit sand mining. The police in such cases do not seem to take victim complaints seriously, and sometimes pay greater heed to counter-complaints fabricated by sand-mining contractors. A well-known activist from Mumbai, Sumaira Abdulali, has experienced such treatment from the authorities despite having been assaulted by members of a sand mafia.<sup>81</sup> Although there is insufficient data to reach a definitive conclusion, from media reports it appears that hired hoodlums working for the sand-mining contractors routinely threaten and injure, but rarely kill, women. Those instances where a deliberate killing is suspected involve male journalists, farmers and activists. In this manner, the mafias try to avoid attracting the attention of women's-rights groups.

## Conclusion: A problem of large but unknown proportions

One of the challenges of conducting research on the illicit sand economy in India is the absence of reliable statistics. Besides uncertainty over the volume of sand mined, there are no figures on fatalities. Deaths among miners are hardly likely to be known, but the number of non-mining victims ought to be easier to ascertain. This is not the case. All that seems clear is that sand mafias are willing to use violence while accessing sand deposits and transporting their cargo. If necessary, they encroach on private land to carry out their activities. Should a community protest, the contractors who underwrite sand extraction have a variety of methods to deal with such opposition: from targeted killing, to bribery, physical injury and legal harassment, the 'mafias' do not lack for options, which can be exercised either independently or with the complicity of local police.

Deaths of Indian villagers can also be attributed to secondary consequences of sand mining, such as escalating water shortage and, in some cases, flash flooding. In 2013, the Himalayan province of Uttarakhand suffered floods as a result of cloudburst. Approximately 6 000 people were killed and 110 000 required evacuation by military and paramilitary forces. Provincial ministers dismissed criticism that unrestricted sand extraction from rivers had worsened the disaster by altering water flows, and, within a matter of months, sand mining had resumed.<sup>82</sup> More recently, floods in Kerala in 2018 were attributed to sand mining.<sup>83</sup>

Such indifference from Indian policymakers to the human and material devastation caused by natural disasters is routine. It merely suggests that, between the backhanders that can be gained from construction projects, and the public sense of well-being that comes with 'development', concerns about 'sand mafias' will remain unheeded. And, as population pressure increases in limited urban spaces, there is the spectre of worse to come – Indian cities are already suffering from acute shortages of drinking water. In time, this could lead to mass-scale civil strife. 'Water mafias' are known to operate in large cities such as Delhi. Thus far, these groups have not been commonly associated with violence, although in May 2018 a journalist was attacked in the capital for trying to report on their activities.<sup>84</sup> When a top judicial official warned the Indian Supreme Court that the next world war would most likely be fought over water, he was told drily: '[F]orget about world war, Delhi war is going to start soon.'<sup>85</sup> An estimated 600 million Indians, or nearly half the country's population, face a very severe water shortage in their daily lives, with 200 000



dying every year due to lack of access to clean water. Within another decade, the demand for water is estimated to be double the country's existing supply, portending a dystopian future where those who die of old age, war or disease can count themselves as lucky. Sand mafias, pervasive though they are in India, will perhaps count among the less severe of the country's organized-crime problems in the years to come. The question therefore is, how does one deal with the wider threat that resource mafias – whether trading in sand, land, water, coal or any other scarce commodity – pose to societal stability?

All trends suggest that law-enforcement agencies are prevented by both capacity constraints and lack of political support (from a political class that is itself highly criminalized) from going after influential crime lords. What is worrying is that single-point organized-crime actors (mafias that are focused only on the illicit sand trade, for instance) can, over time, mutate into larger organizations with diversified investment portfolios in multiple sectors. Indeed, this trajectory was noted by a 1993 report commissioned by the Indian government to study the level of threat posed by organized crime to Indian national security. The full report has never been made public, perhaps because the contents would be politically embarrassing. But a summary available online makes clear that the government apparatus has a time-limited window of opportunity to act against gangsters before the latter acquire political patronage and become untouchable.<sup>86</sup>

Since the state apparatus is unlikely to do anything more than maintain discreet surveillance on politically connected gangs (for fear of the backlash that could result from targeting them), it would be more productive to build community resilience from the bottom-up. Three measures could be taken in this regard.

First, a website for tracking illicit sand mining, as well as other kinds of resource-related organized crime, could be set up and hosted by an Indian think-tank or journalism agency. The website could function as an online 'crime-spotters portal', allowing whistle-blowers to anonymously upload photographic, audio-visual and documentary evidence of organized crime in India.

Second, travel and research grants could be provided to investigative reporters to provide in-depth stories on organized crime. Ideally, these reporters would need to receive access to government sources and be protected from minor street-level threats. They could be veteran crime reporters who have worked for local newspapers or magazines. These journalists could examine not just the current state of affairs regarding illicit sand extraction, but also conduct longitudinal studies over a period of several months. Thus, their finished reports would have more evidential weight if later used to trigger a judicial investigation.

There is also arguably a need to train and fund local NGOs to build contacts with communities that have been adversely affected by sand mining. However, what will be challenging would be to create a funding stream for such activism – one that relies only on Indian donors. A civic engagement project financed from overseas would immediately make its Indian partners vulnerable to fabricated charges of assisting foreign 'subversion'. Such accusations are hardly likely to emanate from the professional Indian counter-intelligence service. But it is almost inconceivable that New Delhi would publicly discredit them if they were levelled by corrupt officials of a provincial police force. For this reason, civic activism against sand mining in India must have an entirely indigenous footprint, and be driven by exposés conducted by local journalists.

Lastly, to rouse the Indian public from its general stupor, it may be useful to emphasize revenue losses that are caused by illegal and extra-legal sand mining. Being a democracy, India seeks to maintain at least a facade of public accountability. If this could be punctured by suggesting that high-level collusion in organized crime is depriving the country of badly needed cash to upgrade public infrastructure, there might be top-down pressure to introduce reforms and improve oversight. These steps would not necessarily have to come at the cost of urban modernity, but they would help regulate its disruptive effects.



## Acknowledgements

---

The author would like to thank the Government of Norway for funding this project, and Professor Mark Shaw and Tuesday Reitano for their invaluable guidance. Thanks are also due to Mark Ronan for editing the text and to Sandhya Ravishankar for permission to use her photographs of beach-sand mining in Tamil Nadu. The author would like to express special gratitude to all the anonymous interviewees who agreed to speak on the subject of sand mining in India.



## Notes

- 1 Joanna Sugden, Why India has a 'sand mafia', *The Wall Street Journal*, 6 August 2013, <https://blogs.wsj.com/indiarealtime/2013/08/06/why-india-has-a-sand-mafia/>; Rama Lakshmi, India's illegal sand mining fuels boom, ravages rivers, *The Washington Post*, 19 May 2012, [https://www.washingtonpost.com/world/asia\\_pacific/indias-illegal-sand-mining-fuels-boom-ravages-rivers/2012/05/19/gIQA3HzdaU\\_story.html?utm\\_term=.bd7ddaab10b4](https://www.washingtonpost.com/world/asia_pacific/indias-illegal-sand-mining-fuels-boom-ravages-rivers/2012/05/19/gIQA3HzdaU_story.html?utm_term=.bd7ddaab10b4); Samantha Hawley, The 'sand mafia' fuelling India's \$120 billion building boom, ABC News, 28 March 2017, <https://www.abc.net.au/news/2017-03-28/the-great-sand-heist-fuelling-india-120-billion-building/8390984>.
- 2 EPW Engage, 5 reasons we need to worry about inequality now, *Economic and Political Weekly*, 9 February 2019, <https://www.epw.in/engage/article/5-reasons-we-need-worry-about-inequality>.
- 3 Ananya Bhattacharya, India's billionaires added \$308 million a day to their wealth in 2018, Quartz India, 20 January 2019, <https://qz.com/india/1528973/indias-billionaires-added-308-million-a-day-in-2018-says-oxfam/>.
- 4 MN Parth, The ominous agrarian distress, *Mumbai Mirror*, 23 January 2019, <https://mumbaimirror.indiatimes.com/opinion/columnists/parth-mn-the-ominous-agrarian-distress/articleshow/67644958.cms>.
- 5 Adam Withnall, Indian unemployment levels at 45-year high, leaked figures reveal, *The Independent*, 31 January 2019, <https://www.independent.co.uk/news/world/asia/india-unemployment-figures-levels-latest-high-modi-pledge-economy-a8756256.html>.
- 6 India needs a Chicago every year to meet urban demand: Housing Minister, NDTV, 12 July 2018, <https://www.ndtv.com/india-news/india-needs-a-chicago-every-year-to-meet-urban-demand-housing-minister-1882073>.
- 7 If the inhabitants are illiterate, they may not have papers proving their ownership of the land. In such cases, they would be called 'occupants'.
- 8 Scott Carney, The Godfather of Bangalore, *Wired*, 10 October 2008, <https://www.wired.com/2008/10/mf-mobgalore/>.
- 9 Aunshul Rege, Not biting the dust: Using a tripartite model of organized crime to examine India's Sand Mafia, *International Journal of Comparative and Applied Criminal Justice*, 40, 2 (2016), 105.
- 10 Interview with Source G, 12 January 2019 (location withheld). The following media report provides an illustration of the linkage between politics and sand mining in Tamil Nadu: M. Rajshekhar, 'Politicians aren't only messing with Tamil Nadu's water – they're making Rs 20,000 crore from sand', *Scroll.in*, 19 September 2016, <https://scroll.in/article/815138/tamil-nadus-political-parties-are-making-money-from-sand-worth-a-whopping-rs-20000-crore-a-year>.
- 11 Roli Srivastava, Indian miners drowning for sand despite government crackdown, Reuters, 13 August 2018, <https://www.reuters.com/article/us-india-slavery-sand-mining-insight/indian-miners-drowning-for-sand-despite-government-crackdown-idUSKBN1KY00G>.
- 12 Cited in Tom Lasseeter and Rakteem Katakey, Inside India's deadly sand mafia, Bloomberg, 17 December 2014, <https://www.bloomberg.com/news/2014-12-17/indian-college-kids-a-sand-mafia-path-a-river-of-death.html>.
- 13 Gagandeep Jassowal, Faridkot administration turns blind eye towards illegal mining; farmers say they fear 'mafia', *Hindustan Times*, 17 February 2018, <https://www.hindustantimes.com/punjab/faridkot-administration-turns-blind-eye-towards-illegal-mining-farmers-say-they-fear-mafia/story-TRVh97eh9ksbeWX1XPG4zl.html>.
- 14 Kunal Shankar, Good on paper, bad in practice, in Changing Landscapes, Frontline, 7 August 2015, accessed <https://frontline.thehindu.com/the-nation/changing-landscapes/article7438099.ece>.
- 15 M Suchitra, Sand mafia attacks journalists again, Down to Earth, 17 August 2015, <https://www.downtoearth.org.in/news/sand-mafia-attacks-journalists-again-44639>.
- 16 Illegal sand mining continues unabated, *Times of India*, 9 January 2019, <https://timesofindia.indiatimes.com/city/bhopal/illegal-sand-mining-continues-unabated/articleshow/67427582.cms>, 13 February 2019; Rajesh Kumar Singh, Inside the world of sand mafia: Terror casts gloom as cops bury heads, *Hindustan Times*, 25 April 2015, <https://www.hindustantimes.com/india/inside-the-world-of-sand-mafia-terror-casts-gloom-as-cops-bury-heads/story-i0Z1p2jE3dt4uMfLWtUmKO.html>.
- 17 Aunshul Rege, Not biting the dust: using a tripartite model of organized crime to examine India's Sand Mafia, *International Journal of Comparative and Applied Criminal Justice*, 40, 2 (2016), 112.
- 18 Debashish Karmakar, Stolen AK-47s drench Bihar in blood, *Times of India*, 6 October 2018, <https://timesofindia.indiatimes.com/india/stolen-ak-47s-drench-bihar-in-blood/articleshow/66093046.cms>. The centrality of Munger to the arms trade in eastern India was emphasized to this author by both Source K, interviewed in Kolkata on 22 December 2018, and a senior police officer in the same city who has tracked the flow of illicit weapons out of Bihar.
- 19 Ravi Sharma, Dangerous nexus, in Changing Landscapes, Frontline, 7 August 2015, <https://frontline.thehindu.com/the-nation/changing-landscapes/article7438099.ece>.
- 20 Siddarth Banerjee, Night mining: A truck every 4 minutes, *Times of India*, 28 October 2018, <https://timesofindia.indiatimes.com/city/chandigarh/night-mining-a-truck-every-4-minutes/articleshow/66397358.cms>.
- 21 Anand Kumar, Mining mafia is wreaking havoc across India, *Dawn*, 14 January 2019, <https://www.dawn.com/news/1457299>.
- 22 Mihir Deb, Garima Tiwari and Kuntala Lahiri-Dutt, Artisanal and small-scale mining in India: Selected studies and an overview of the issues, *International Journal of Mining, Reclamation and Environment*, 22, 3 (2008), 198–199.
- 23 Interview with Source I, 7 January 2019, Chennai.
- 24 Ibid.
- 25 Interview with Source V, 7 January 2019, Chennai.
- 26 Interview with Source I, 7 January 2019, Chennai.
- 27 Haritha John, Villages vanish in Kerala's Kollam coast as they succumb to sand mining, *The News Minute*, 9 January 2019, accessed <https://www.thenewsminute.com/article/villages-vanish-keralas-kollam-coast-they-succumb-sand-mining-94762>, 8 March 2019.
- 28 Vince Beiser, The ultra-pure, super-secret sand that makes your phone possible, *Wired*, 7 August 2018, accessed <https://www.wired.com/story/book-excerpt-science-of-ultra-pure-silicon/>, 13 February 2019; Neil Tweedie, Is the world running out of sand? The truth behind stolen beaches and dredged islands, *The Guardian*, 1 July 2018, <https://www.theguardian.com/global/2018/jul/01/riddle-of-the-sands-the-truth-behind-stolen-beaches-and-dredged-islands>.
- 29 Some estimates suggest the volume is 50 billion tonnes per year, which is about twice the replenishment rate of all river sand. Rob Ludacer, The world is running out of sand – and there's a black market for it now, *Business Insider*, 12 June 2018, <https://www.businessinsider.com.au/world-running-out-sand-resources-concrete-2018-6>.





- 30 Lindsay Murdoch, Sand wars: Singapore's growth comes at the environmental expense of its neighbours, *Sydney Morning Herald*, 26 February 2016, <https://www.smh.com.au/world/sand-wars-singapores-growth-comes-at-the-environmental-expense-of-its-neighbours-20160225-gn3uum.html>.
- 31 Josh Gabbatiss, Sand mafias and vanishing islands: How the world is dealing with the global sand shortage, *Independent*, 6 December 2017, [https://www.independent.co.uk/news/long\\_reads/sand-shortage-world-how-deal-solve-issue-raw-materials-supplies-glass-electronics-concrete-a8093721.html](https://www.independent.co.uk/news/long_reads/sand-shortage-world-how-deal-solve-issue-raw-materials-supplies-glass-electronics-concrete-a8093721.html).
- 32 Titanium connection, Frontline, 24 July 2015, <https://frontline.thehindu.com/cover-story/titanium-connection/article7391812.ece>.
- 33 Ironically, the tallest building in the world, Dubai's kilometre-high Burj Khalifa Tower, had to be built from imported rather than local sand, see David Owen, The world is running out of sand, *The New Yorker*, 29 May 2017, <https://www.newyorker.com/magazine/2017/05/29/the-world-is-running-out-of-sand>.
- 34 As a matter of technicality, the generic term 'coastal sand' encompasses both sand extracted from beaches – which may sometimes contain rare earths – as well as sand from river deltas. The latter is mined for use in construction; the former is refined and the rare earths are exported.
- 35 WWF, Uncovering sand mining's impacts on the world's rivers, Phys.org, 22 August 2018, <https://phys.org/news/2018-08-uncovering-sand-impacts-world-rivers.html>.
- 36 Vince Beiser, Sand mining: The global environmental crisis you've probably never heard of, *The Guardian*, 27 February 2017, <https://www.theguardian.com/cities/2017/feb/27/sand-mining-global-environmental-crisis-never-heard>.
- 37 Radio Free Asia, Cambodian sand could build a foundation for legal action in Singapore, Eco-Business, 6 January 2017, <https://www.eco-business.com/news/cambodian-sand-could-build-a-foundation-for-legal-action-in-singapore/>.
- 38 Saigoneer, Vietnam to run out of construction sand by 2020: Official, *Saigoneer*, 7 August 2017, <https://saigoneer.com/vietnam-news/10864-vietnam-to-run-out-of-construction-sand-by-2020-official>.
- 39 Vince Beiser, He who controls the sand: The mining 'mafias' killing each other to build cities, *The Guardian*, 28 February 2017, <https://www.theguardian.com/cities/2017/feb/28/sand-mafias-killing-each-other-build-cities>.
- 40 Lynsey Chutel, China's search for sand is destroying Mozambique's pristine beaches, Quartz, 23 October 2018, <https://qz.com/africa/1430196/sand-mining-in-mozambique-by-chinese-firm-destroys-lives/>.
- 41 Decoding housing for all by 2022, KPMG, 2014, <https://assets.kpmg/content/dam/kpmg/pdf/2014/09/Decoding-Housing-for-all-2022.pdf>.
- 42 Ishan Kukreti, How will India address illegal sand mining without any data?, Down to Earth, 16 October 2017, <https://www.downtoearth.org.in/news/mining/flouted-with-impunity-58736>.
- 43 V Santhosh et al, Brick and tile clay mining from the paddy lands of Central Kerala (southwest coast of India) and emerging environmental issues, *Environmental Earth Sciences*, 68 (2013), 2119.
- 44 Sreedharan Sreebha and Damodaran Padmalal, Environmental impact assessment of sand mining from the small catchment rivers in the southwestern coast of India: A case study, *Environmental Management*, 47 (2011), 133; see also D Padmalal, et al, Environmental effects of river sand mining: A case from the river catchments of Vembanad Lake, southwest coast of India, *Environmental Geology*, 58 (2008), 879.
- 45 Interview with Source G, 12 January 2019.
- 46 Ibid.
- 47 Vince Beiser, The deadly global war for sand, *Wired*, 26 March 2015, <https://www.wired.com/2015/03/illegal-sand-mining/>; Anshul Rege, Not biting the dust: Using a tripartite model of organized crime to examine India's Sand Mafia, *International Journal of Comparative and Applied Criminal Justice*, 40, 2 (2016), 108–109.
- 48 Interview with Source G, 12 January 2019; interview with Source K, 22 December 2018, Kolkata.
- 49 Samrat Mukherjee, Mining mafia silence the media, *The Hoot*, 5 August 2014, [http://asu.thehoot.org/story\\_popup/mining-mafia-silence-the-media-8738](http://asu.thehoot.org/story_popup/mining-mafia-silence-the-media-8738).
- 50 Omvir Singh and Ajay Kumar, Sand and gravel extraction from piedmont and floodplain zones of Yamunanagar district in Haryana, India: Environmental tragedy or economic gain?, *International Journal of Environmental Studies*, 75, 2 (2018), 280.
- 51 Newsclick, India's rivers in ruined condition due to unchecked illegal sand mining, Newsclick.in, 23 December 2017, <https://www.newsclick.in/indias-rivers-ruined-condition-due-unchecked-illegal-sand-mining>.
- 52 Prafulla Das, Drain of wealth, Frontline, 12–25 September 2009, <https://frontline.thehindu.com/static/html/fl2619/stories/20090925261903800.htm>.
- 53 Prafulla Das, Under pressure, Frontline, 4–17 December 2010, <https://frontline.thehindu.com/static/html/fl2725/stories/20101217272512700.htm>.
- 54 Deshdeep Saxena, A mine of votes: Why illegal sand mining is never an election issue, *Times of India*, 18 October 2018, <https://timesofindia.indiatimes.com/city/bhopal/a-mine-of-votes-why-illegal-sand-mining-is-never-an-election-issue/articleshow/66271579.cms>.
- 55 Anupam Chakravarty, Green tribunal dismisses Madhya Pradesh's plea on sand mining, Down to Earth, 4 July 2015, <https://www.downtoearth.org.in/news/green-tribunal-dismisses-madhya-pradeshs-plea-on-sand-mining-42918>.
- 56 Soma Basu, IAS officer was punished for taking on SP leaders involved in sand mining, Down to Earth, 4 July 2015, <https://www.downtoearth.org.in/news/ias-officer-was-punished-for-taking-on-sp-leaders-involved-in-sand-mining-41816>.
- 57 Some estimates hold that 80 per cent of sand extraction in India is illegal, increasing the likelihood of open and violent competition since there is no legitimate commercial business to act as an intermediary with law enforcement agencies. Aurora Bosotti, World is running out of SAND and it's creating deadly SAND MAFIA – Completely depleted!, *Express*, 6 May 2019, <https://www.express.co.uk/news/world/1123136/sand-shortages-sand-mafia-india-news-Vietnam-sand-Mafia-crime-illegal-construction>.
- 58 Rajmeet Singh, After attack, Punjab says will arm its forest staff, arms bought gather dust, *Tribune*, 21 June 2018, <https://www.tribuneindia.com/news/punjab/after-attack-punjab-says-will-arm-its-forest-staff-arms-bought-gather-dust/608381.html>.
- 59 Rabindra Nath Choudhury, Sand mining mafia unleashes terror in Madhya Pradesh, *The Asian Age*, 4 November 2017, <http://www.asianage.com/india/crime/041117/sand-mining-mafia-unleashes-terror-in-madhya-pradesh.html>.
- 60 S Yogesh, Sand mafia: A network of politicians, construction companies and criminals, Newsclick, 27 June 2018, <https://www.newsclick.in/sand-mafia-network-politicians-construction-companies-and-criminals>.



- 61 Interview with Source G, 12 January 2019. Karnataka has a higher proportion of private residences and government buildings constructed from granite than elsewhere in India, where clay bricks are most commonly used in construction.
- 62 Ravi Sharma, Mine of scams, *Frontline*, 24 September–7 October 2011, <https://frontline.thehindu.com/static/html/fl2820/stories/20111007282003400.htm>.
- 63 Aunshul Rege, Not biting the dust: Using a tripartite model of organized crime to examine India's Sand Mafia, *International Journal of Comparative and Applied Criminal Justice*, 40, 2 (2016), 108.
- 64 S Viswanathan, Mining dangers, *Frontline*, 11–24 May 2002, <https://frontline.thehindu.com/static/html/fl1910/19100440.htm>.
- 65 Ilangoan Rajasekaran, A requiem for rivers, *Frontline*, 24 July 2015, <https://frontline.thehindu.com/cover-story/a-requiem-for-rivers/article7391540.ece>.
- 66 Ilangoan Rajasekaran, The mother of all loot, *Frontline*, 24 July 2015, <https://frontline.thehindu.com/cover-story/the-mother-of-all-loot/article7391496.ece>.
- 67 In one case, a village *panchayat* (council of leaders) in Kerala labelled an activist as a public nuisance because she sought to expose the local authorities' links with illicit sand mining. See Ramesh Babu, Those who dare speak up against sand mafia are silenced, *Hindustan Times*, 24 April 2015, <https://www.hindustantimes.com/india/those-who-dare-speak-up-against-sand-mafia-are-silenced/story-wZ0d2QKqzhbEZ1fGXBqM2L.html>.
- 68 Ilangoan Rajasekaran, Ripples of hope, *Frontline*, 24 July 2015, <https://frontline.thehindu.com/cover-story/ripples-of-hope/article7391591.ece>.
- 69 Interview with Source S, 6 January 2019, Chennai.
- 70 Mngeni Asabonga, et al, The physical and environmental impacts of sand mining, *Transactions of the Royal Society of South Africa*, 72, 1 (2017), 1.
- 71 Nalini Bikkina and Tejo Shravya, Women's self-help groups in the sand market, *International Journal of Rural Management*, 13, 1 (2017), 111–112.
- 72 Interview with Source I, 7 January 2019, Chennai.
- 73 Ashwin Aghor et al, Sand slips, *Down to Earth*, 7 June 2015, <https://www.downtoearth.org.in/coverage/sand-slips-37957>.
- 74 Interview with Source S, 6 January 2019, Chennai.
- 75 TNN, Shocking but gangs, mining mafia train guns on cops, *Times of India*, 18 October 2018, <https://timesofindia.indiatimes.com/city/jaipur/shocking-but-gangs-mining-mafia-train-guns-on-cops/articleshow/66283261.cms>.
- 76 Interview with Source S, 6 January 2019, Chennai.
- 77 Interview with Source K, 22 December 2018, Kolkata.
- 78 M Suchitra, Death of IAS officer underscores threats posed by sand, land mafia, *Down to Earth*, 17 August 2015, <https://www.downtoearth.org.in/news/mining/death-of-ias-officer-underscores-threats-posed-by-sand-land-mafia-49057>.
- 79 Ilangoan Rajasekaran, Murders most foul, *Frontline*, 24 July 2019, <https://frontline.thehindu.com/cover-story/murders-most-foul/article7391526.ece>.
- 80 Divya Trivedi, Rivers no more, *Frontline*, 7 August 2015, <https://frontline.thehindu.com/the-nation/rivers-no-more/article7447581.ece>.
- 81 Dredging up trouble, *Frontline*, 7 August 2015, <https://frontline.thehindu.com/the-nation/dredging-up-trouble/article7438098.ece>.
- 82 Biswajeet Banerjee, Plundering of river beds in Uttarakhand continues as sand mafia calls the shots, *The News Minute*, 25 February 2015, [https://www.thenewsminute.com/news\\_sections/290](https://www.thenewsminute.com/news_sections/290).
- 83 Damayanti Datta, Uncontrolled sand mining led to Kerala floods. This is only waiting to happen again, *Daily O*, 27 August 2018, <https://www.dailyo.in/variety/kerala-floods-sand-mining-sand-mafia-illegal-mining-soil-erosion-rivers/story/1/26297.html>.
- 84 TV reporter beaten up by 'water mafia', *Times of India*, 14 May 2018, <https://timesofindia.indiatimes.com/city/delhi/tv-reporter-beaten-up-by-water-mafia/articleshow/64151751.cms>.
- 85 Delhi water wars: Why life is cheaper than water in parts of national capital, *Financial Express*, 18 June 2018, <https://www.financialexpress.com/india-news/delhi-water-wars-why-life-is-cheaper-than-water-in-parts-of-national-capital/1210265/>.
- 86 See Ministry of Home Affairs, Vohra Committee Report, [https://adrindia.org/sites/default/files/VOHRA%20COMMITTEE%20REPORT\\_0.pdf](https://adrindia.org/sites/default/files/VOHRA%20COMMITTEE%20REPORT_0.pdf).





**GLOBAL  
INITIATIVE**  
AGAINST TRANSNATIONAL  
ORGANIZED CRIME

[www.globalinitiative.net](http://www.globalinitiative.net)

