Curbing Unregulated River Sand Mining in Sri Lanka

Attributable Impact

- Improved river sand mining regulation and enforcement has directly benefitted over 300,000 people

Background

As the world's cities experience rapid growth, the global construction industry has been expanding exponentially. As a result, the demand for and price of river sand, which is the favoured natural material to produce mortar and concrete, has also increased drastically. In Sri Lanka in particular, demand has been rising since the early 1990s, and has taken a notable leap since the 2004 tsunami.

River sand mining (RSM) has severe environmental, socio-economic, safety, and public health consequences. Increases in flow velocity cause river banks to erode more quickly, which can degrade land quality and damage nearby infrastructure, such as bridges and roads. RSM also lowers water tables, which can decrease water levels in dug wells, sometimes leaving them completely dry; decrease groundwater levels to the point that root systems no longer reach the water table; and increase seawater intrusion, salinization of drinking water and irrigation sources. This has especially grave implications for Sri Lankans dependent on household cultivation and small-holder coconut farmers.

RSM in Sri Lanka is centrally regulated through the Geological Survey and Mines Bureau (GSMB), which had limited resources and reach until recently and was also susceptible to local political pressure and consequent corruption. This weak regulatory environment, in combination with a steep increase in the demand for sand due to rising prices, has led to the development of organized illicit RSM operations on a large scale. It is estimated that more than 35 of the 103 rivers in Sri Lanka are subject to illicit RSM and that more than 50% of all sand used in the construction sector is sourced from unlawful operations. Additionally, a survey conducted by three Sri Lanka Water Partnership partners (the Network for Women Water Professionals (NetWwater) and the Universities of Colombo and Ruhuna), found that 10 times more sand is usually extracted than RSM permits allow.

Illicit RSM and its adverse effects have been particularly severe in three of Sri Lanka's major western rivers: the Kelani River Basin, which supports approximately 5 million people, and the Maha Oya and Deduru Oya Basins, which benefit approximately 1 people each. In total, therefore, these three catchments sustain almost 1/3 of Sri Lanka's total population. The main rivers of the south, including the Kalu Ganga, Gin Ganga and Nilwala Rivers, also bear the scars of RSM overexploitation. Additionally, the Mahaveli River, which is Sri Lanka's longest river and largest basin in terms of its downstream reaches, is also being significantly overexploited.

GWP Contribution and Outcomes

SLWP supported the Centre for Environmental Justice (CEJ) in mobilizing the Maha Oya and Deduru Oya communities to file a series of Public Interest Litigation (PIL) cases against RSM practices, which led the Supreme Court of Sri Lanka to ban RSM along the two rivers in 2004.

This marked the beginning of a long-term campaign against RSM, organized by SLWP and NetWwater, with key support from Central Government Authorities, GSMB, the Central Environmental Authority (CEA) and Cap-Net Lanka, a country partner of Cap-Net UNDP.

The campaign aimed to supplement the recent legislative changes with community action, recognizing that weak law enforcement mechanisms and legal loopholes meant that regulations alone were not enough to fully address illicit RSM. Awareness campaigns and dialogues engaged government officials, officials at the District and Divisional level, local authorities, media, youth and NGOs, with a focus on transparency, accountability, and all-inclusive stakeholder participation.

Media has played a large role in this campaign. Although media sources had previously reported ongoing RSM activity on 35 of the 103 rivers in Sri Lanka, RSM had always been presented as a provincial issue, rather than a national one. SLWP has worked to increase national coverage of RSM by organizing media events and blitzes. For example, in 2010, SLWP brought together 16 major media institutions for a Deduru Oya RSM event, which was broadcasted by the National Broadcasting Service. SLWP also uses social media to engage local activists, with a focus on youth. 8 newly operation blogs, a Facebook page and the SLWP website now allow for real-time recording of environmental damage and evidence-based advocacy, giving a voice to people who were previously afraid to speak up due to local pressures.

SLWP's campaign was successful in raising awareness at the national level and was instrumental in the development of the 2006 National Policy on Sand as a Resource for the Construction Industry, which sought to manage the sector in a sustainable manner. This policy was implemented by the Ministry of Environment and Natural Resources. Sri Lanka also passed the National Environmental Act 47, which prohibits mechanized sand mining in all rivers in Sri Lanka.

Together, these new legal frameworks have significantly increased GSMB's capacity. SLWP has worked closely with GSMB to advance its water management strategies at the local level specifically. GSMB has expanded its reach from only 2 offices nationally to 18; changed the law to make illicit RSM a cognizable offense, instead of a non-cognizable offense, which means that local authorities can now detain illicit miners without a pre-issued magistrate's warrant; and changed the details captured in RSM permits to include the exact area they cover and the length of their validity.

Although these measures have been successful in controlling RSM in targeted urban and peri-urban rivers, many upstream tributaries located in more remote areas inland, such as the mid and lower reaches of the Mahaweli River, have seen increases in RSM in recent years. It is clear, therefore, that SLWP and its partners must adopt a holistic approach to curbing illicit RSM, acknowledging that although it has decreased significantly in some regions of Sri Lanka, the problem has to some extent simply shifted to other regions of the country, where it remains an issue. Recently, GSMB has made plans to use GPS technology to track sand transport vehicles in order to detect which remote areas are being mined and should therefore be more closely regulated.

SLWP and its partners recognized that effective local policing would be an instrumental aspect of comprehensive policy implementation. In 2006, and with support from GWP, SLWP and NetWwater began to collaborate with GSMB, CEA and the Universities of Colombo and Ruhuna to organize capacity building training courses and discussion sessions for police personnel. The police pointed out many loopholes in the legal framework, including the issuance of permits for extended periods of time when the amount of sand that could be mined was very small and the lack of a mechanism to maintain records of RSM permits. Additionally, many police were not fully aware of the laws governing RSM and their powers under the Mines and Minerals Act, such as their ability to seize machinery used in illicit RSM operations. Engagement with local police created a positive feedback loop between law

enforcement units, regulatory bodies, local politicians and community members, who became more willing to report illicit RSM activities with the new-found confidence that the police would act. Due to the programme's success, and a newly formed partnership with the Water Integrity Network in 2008, SLWP expanded the scope of the programme by five times to reach other key regions of Sri Lanka.

Nevertheless, there have been several instances of local political intervention where local police were pressured to release seized machinery, transport vehicles and sand. These instances have had demoralising and demotivating effects on law enforcement in these areas.

To mitigate such occurrences SLWP formed a strong partnership with the Special Task Force (STF), an existing anti-terrorism unit in the Ministry of Defence, which broadened its remit following the end of the Sri Lankan civil war in 2009. STF supported SLWP in its RSM control activities and SLWP, Central Government District Authorities, CEA and GSMB coordinated RSM training programs for all STF officials, including in northern and eastern Sri Lanka. Due to the fact that STF is centrally controlled from Colombo (Sri Lanka's largest city and its commercial capital), it is not subject to local political pressures, allowing it to act as a key partner in GSMB, CEA and SLWP efforts to curb corruption in RSM.

One of the most challenging aspects of SLWP's work to end illicit RSM in Sri Lanka has been identifying viable alternatives to river sand. Offshore sand and manufactured sand are two options; however, they also have drawbacks. For example, although the cost of manufactured sand is lower per unit than river sand, the cost to transport manufactured sand is much higher as it has to be moved from a central production location. Other issues that must be addressed include waste water disposal and noise pollution from construction sites. The issue of artisans being somewhat reluctant to work with manufactured sand, which has led to housebuilders being reluctant to purchase it, also had to be overcome.

SLWP's key partner in encouraging alternatives is the construction industry regulator, the Construction Industry Development Authority (CIDA). Together, they have organized a series of consultative and awareness-raising workshops and brainstorming sessions under CIDA's Alternatives for River Sand in Construction programming. These have included the participation of technical construction professionals from CDE Asia and the International Construction Consortium (ICC), which is Sri Lanka's largest construction consortium; government agencies, such as the Ministry of Housing and Construction; academics from the Department of Mechanical Engineering at the University of Moratuwa; and Sri Lanka's largest construction training organizations: the Vocational Training Authority (VTA) and the National Apprentice and Industrial Training Authority (NAITA). SLWP's collaboration with the VTA and NAITA specifically has led to an effort to build RSM awareness and capacity building, as well as education about potential river sand alternatives, into all technical trainings for construction professionals in Sri Lanka. Additionally, SLWP's partnerships with CIDA, ICC and CDE Asia have facilitated connections with potential investors in alternatives to river sand.

As a result of this work, many large construction firms in Sri Lanka now use manufactured sand and other recycled materials, and most road constructors get the majority of their sand from non-river sources. At the same time, however, it is still common practice to use river sand for the construction of private homes, especially for wall plastering, which uses the largest amount of sand after concrete production and is dependent on sand of a particular quality to achieve the necessary standards at market prices.

In hopes of continuing to address gaps in IWRM at a smaller scale, 6 local communities in Sri Lanka have created their own Area Water Partnerships, which are affiliated with SLWP. The Dedura Oya AWP, for example, has undertaken a multi-year project to rebuild river banks and replant river reservations along Kolamuna Oya, a tributary adjacent to Deduru Oya. Flood waters have already replenished some

sections of river sediment and the water table has also recovered in many sections. Similar action has been taken in the Maha Oya and the Kelani River as well.

Additionally, starting in 2017, SLWP began to work with Transparency International Sri Lanka in its programming around Sri Lanka's Right to Information Act, one of the strongest such acts globally. They will collaborate to build awareness in state and civil society bodies about the state's responsibility to release pertinent information with hopes of using it to reduce corruption in illicit RSM.

Impact

Overall, all RSM in Sri Lanka is now either entirely prohibited or highly regulated according to strict extraction and transportation schedules. It is estimated that this increase in regulation has directly benefitted over 300,000 people.

More stringent RSM regulation has also led to an increase in investment in alternatives to river sand. For example, a manufactured sand plant, which crushes rocks and quarry stones into sand-sized particles that can be used in construction, was installed and now produces 100 tons of manufactured sand per hour. Additionally, in 2011, GSMB, CEA and Sri Lanka Land Reclamation and Development Corporation announced a project to mine, wash and issue sea sand to the construction industry, providing another viable alternative. Use of cladding in lieu of plastering has reduced demand for river sand as well.

That being said, as discussed above, there is still a long way to go in providing and encouraging the use of cost-effective alternatives. A growing construction boom, including Magapolis' concept to transform the capital city into a modern one, has seen the country's annual sand requirement grow rapidly from around 8 million cubic metres immediately post-tsunami to over 70 million cubic metres today. Though some aforementioned rivers seem regulated, large-scale RSM operations still take place in more remote and less populated river reaches, especially in the Dry Zone, to meet the high demand. The greatest challenge now is to manage the exploitation of river resources while inflicting the least harm possible on the fragile ecosystems in these supply areas.