



Decentralization of environmental regulation in India

Article

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Decentralization of Environmental Regulation in India

Ruth Kattumuri and Stefania Lovo

Abstract

Our article considers the Environment Impact Assessment (EIA) for certain sectors in India and examines the implications of decentralization. We find that the decentralization of EIA processes has improved environmental regulation and been successful in reducing polluting activities in India. Our evidence suggests that decentralization was associated with relatively fewer firm births in states with stricter environmental enforcement. Key among our recommendations is that the development of stronger collaborations between EIA, SEIAA and State Pollution Control Board would enhance enforcement of environmental regulation and reduce disparities between states, through knowledge-and-resource sharing and improving technical, financial and administrative capabilities across states.

1. Introduction

Environmental protection rights and duties have long been incorporated in the Indian Constitution. Elaborate laws relating to environmental protection date back to the Water Act in 1974. The central government, through the Ministry of Environment and Forests (MOEF) and the Central Pollution Control Board (CPCB), are responsible for planning and formulating national policies and standards. The implementation and enforcement are decentralized and are the responsibility of the State Pollution Control Boards. The decentralization process has the potential to reduce the burden on the central government and accelerate the approval process. On the other hand, the decentralized powers could be futile if state governments intend to actively pursue industrialisation for their respective state, or be ineffective if state authorities lack technical and financial capacity.

Cistulli (2002) suggests that decentralization of environmental regulation helps with better understanding of local environmental problems, to promote more transparent and efficient use of natural resources, as well as to increase local participation based on homogeneity of common goals and priorities. At the same time, there could be trade-offs on the successfulness of any decentralization process such as weak administrative or technical capacity, lack of financial resources, poor coordination between national and local policies and the risk of local elite capture (Besley and Coate, 2003).

Environmental compliance is sometimes seen as a barrier to business creation and expansion. Hence, it is crucial to balance between environmental stringency and excessive bureaucracy (Upadhyay, 2017). Indian citizens also benefit from a unique approach to the enforcement of environmental laws by exercising their constitutional right to a healthy environment in the form of Public Interest Litigations (PILs) before the Court of Justice. PILs have resulted in some environmental improvements (Kathuria, 2007) but have also contributed to increase the

workload for state authorities because of court-ordered directives (OECD, 2006). To overcome challenges of bureaucracy, some states such as Jharkhand, have proposed exempting certain industries from the requirement of pollution control board clearances, which could potentially have negative consequences for the environment. More importantly, several States are moving towards comprehensive online systems to speed up the clearance process (CII-KPMG, 2015).

In this article we discuss the implications of decentralization of environmental regulation in India. We draw insights from Lovo (2017) who investigated the impact of the 2006 EIA reform on the birth of polluting firms. In particular, we examine whether differences in enforcement capacity across states had produced heterogeneous effects on the birth of polluting firms. Based on an environmental enforcement index constructed by Lovo (2017), we examine any variations across states in India.

2. The EIA reforms

All firms in India are formally required to receive clearance through an Environmental Impact Assessment (EIA) before they can start operating. EIA also determines the pollution control measures to be maintained throughout the lifetime of the firms operations. A 2006 reform of the EIA process delegated the responsibilities for environmental clearance, previously under the control of the central government, to newly established state-level authorities for certain sectors, names, State Environmental Impact Assessment Authority (SEIAA).

The EIA procedure, as modified by the 2006 reform, is subdivided into four stages. The first stage (Screening) is aimed at determining whether a project requires an EIA report. The second stage (Scoping) involves the determinants of terms of references covering all relevant environmental concerns for the preparation of the EIA. The third stage requires a public consultation through both a public hearing in the proximity of the site and invitations of written responses from the concerned stakeholders. The final stage (Appraisal) involves the scrutiny of the EIA application that can result in either approval or rejection of the proposed project. Following the 2006 reform, the second and final stages were delegated to state-level authorities if the project belonged to specific sectors and met certain criteria (Lovo, 2017).

Firms in certain sectors are no longer subject to a decision from the central authority but have to apply for environmental clearance to SEIAAs. Polluting sectors that were not affected by decentralization and maintained a centralized procedures are offshore and onshore oil and gas exploration, development and production, petroleum refining, Asbestos milling and asbestos based products, Soda ash Industry, Chemical fertilizers, Petrochemical complexes and Integrated paint industry. The automobile industry was initially included among the polluting sectors subject to state-level clearance in the draft EIA reform, but was later removed from the final version of the notification and is currently not subject to EIA¹, which seems counterproductive since this is known to be among the largest sources of pollution.

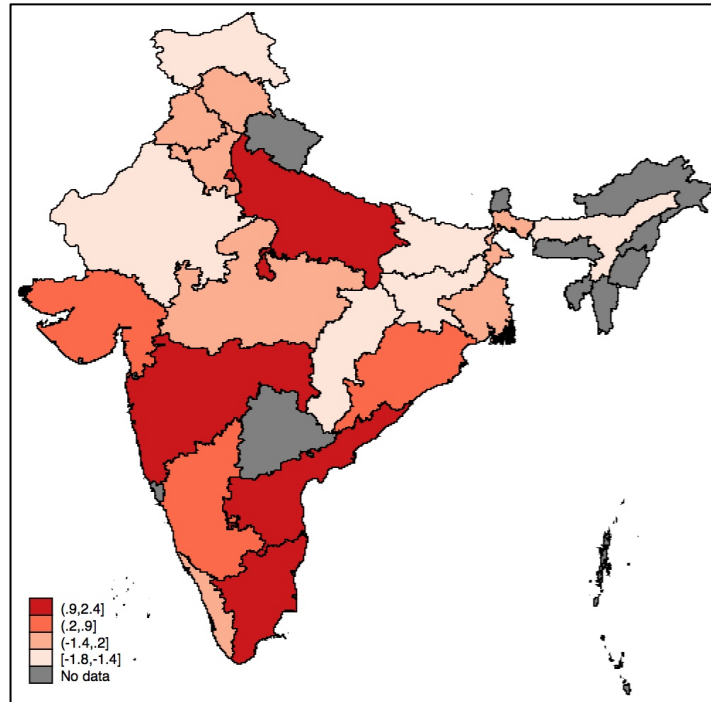
¹ The earlier draft notification of the revised environmental clearance process that contains the automobile sector can be found on the Ministry of Environment, Forest and Climate Change website: [http://envfor.nic.in/legis/eia/so1324\(e\).pdf](http://envfor.nic.in/legis/eia/so1324(e).pdf)

The EIA process was amended further in 2016 to address issues related to specific sectors through a notification. Accordingly, the District Environmental Impact Assessment Authority (DEIAA) and District Level Expert Appraisal Committee (DEAC) are responsible for granting environmental clearance for mining of minor minerals (S.O. 147 (E) of 15th January, 2016). The MOEF had published a draft notification (S.O. 1705(E) of 10th May 2016), which provided an exception for existing firms that might be violating environmental norms. It suggested that projects, which had initiated construction activity and expansion prior to going through an EIA process, could continue their activities by agreeing to an Environment Supplemental Plan (ESP) even if they might be in violation of EIA criteria. This proposal was opposed by civil societies who argued that these proposed changes would allow firms to continue violating environmental laws. This representation led to a revised notification (S.O. 804(E) to be issued by the Environment Ministry on 14.03.2017). According to the 2017 notification, the government has established a process by which an Expert Appraisal Committee at the Central level would determine the conditions for a firms continued operations. We note that while the 2006 reform allowed for public consultation in the procedure for evaluation of violating firms, the new process does not specify this categorically. Public consultations have enabled formal representation of environmental concerns from communities, hence it would be beneficial to make it mandatory for the Expert Appraisal Committee, within the current framework, to undertake public consultation before finalizing their reports.

3. Variations across states in environmental enforcement

Environmental enforcement varies substantially across Indian states due to variations in governance, socio-economic and political conditions but also due to state-specific technical and financial abilities (Nandimath, 2009). While environmental standards for industrial pollution are determined by the central government, evidence suggests that there are large differences across states in terms of enforcement and compliance (OECD, 2006; World Bank, 2006).

Figure 1 – Variation in Environmental enforcement across States



Note: The map plots the environmental enforcement index for states based on Lovo (2017).

Regulatory stringency is very difficult to measure because it is a multifaceted concept that no single indicator can fully capture. Lovo (2017) combines five different indicators of environmental enforcement into a single index of environmental enforcement. Figure 1 plots the environmental enforcement index across States in India and shows a great degree of heterogeneity in terms of regulatory stringency.

The individual indicators are reported in Table 1 and aimed at capturing state-level differences in institutional capacity, civic participation and institutional quality that are relevant to environmental enforcement. The democratic system in India offers the opportunity for engagement and representation by civil societies and general public, a reasonably free press and an accessible judiciary system. All these factors together with state-level technical and institutional capacity play an important role in ensuring that environmental standards and regulation are implemented. The selected indicators are highly correlated. Descriptive evidence suggest that state pollution authorities such as the State Pollution Control Boards suffer from inadequate technical facilities and skilled personnel for monitoring and filling charges (OECD, 2006).

Table 1: Environmental enforcement measures and construction of the enforcement index

Rank	State	Index	NGOs	Judgements	Corruption	Articles	Stations
1	Delhi	2.48	22	2	11	166	11
2	Andhra Pradesh	2.14	29	4	4	213	21
3	Tamil Nadu	1.80	29	2	12	443	16
4	Maharashtra	1.69	26	4	5	165	42
5	Uttar Pradesh	0.94	24	4	10	111	35
6	Gujarat	0.81	7	4	3	146	20
7	Karnataka	0.66	17	3	17	247	14
8	Odisha	0.41	17	3	9	8	12
9	Himachal Pradesh	0.26	4	2	2	3	11
10	Kerala	0.17	7	0	1	155	16
11	West Bengal	0.14	15	2	8	120	21
12	Madhya Pradesh	-0.06	12	4	18	43	26
13	Punjab	-0.95	1	1	7	25	15
14	Haryana	-1.29	3	1	13	21	5
15	Chhattisgarh	-1.31	3	0	6	4	9
16	Rajasthan	-1.33	12	0	16	6	18
17	Bihar	-1.37	2	3	20	13	2
18	Assam	-1.49	7	0	15	9	12
19	Jammu & Kashmir	-1.83	6	0	19	3	3
20	Jharkhand	-1.89	2	0	14	5	6
-	Chandigarh		2	2		4	5
-	Goa		0	0		13	3
-	Meghalaya		1	0		0	2
-	Puducherry		1	0		2	3
-	Uttarakhand		4	1		2	2

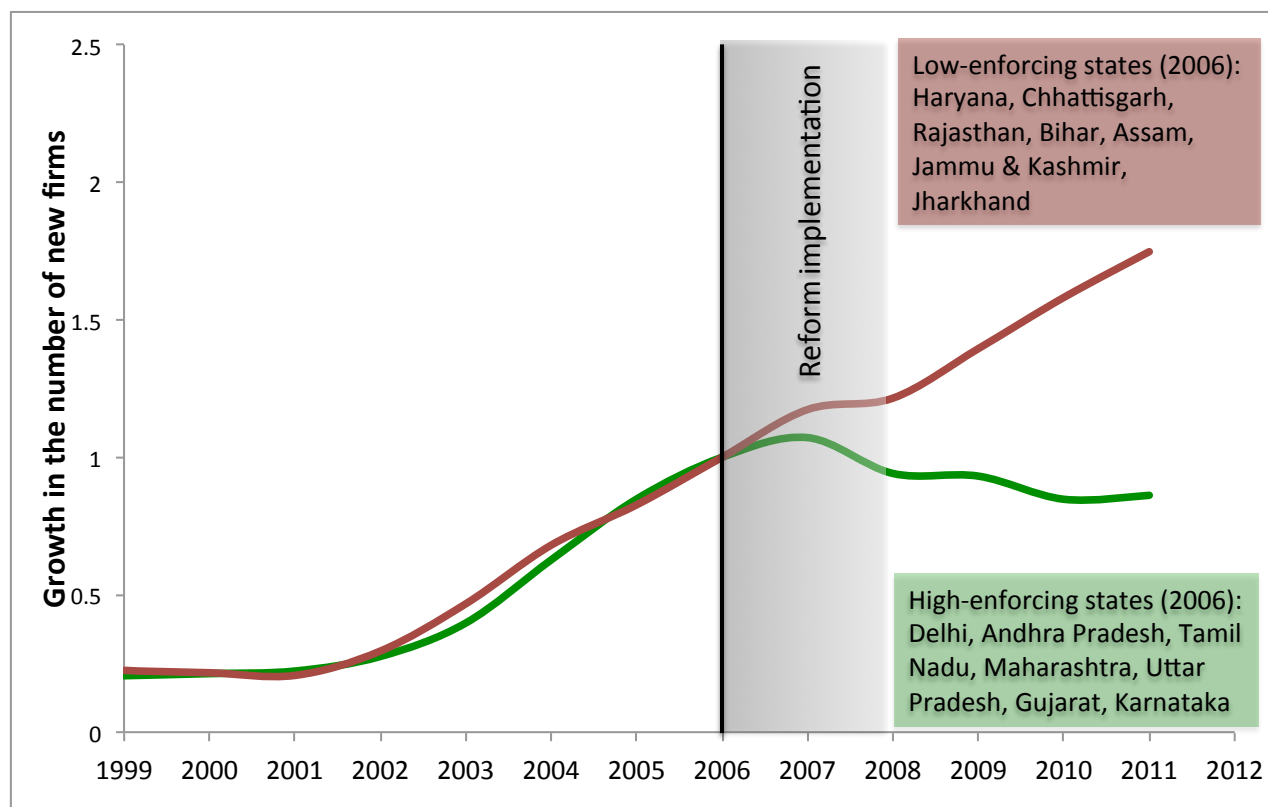
Note: The column header indicates the name of the variable. For the original sources of the data please refer to Lovo (2017). The data refer to pre-reform (2006) conditions. The index was computed using all variables divided by state population, except corruption, to account for differences in size.

Data show that greater judicial efforts are found in states with lower corruption. They are also in line with effective governance being more conducive to building public awareness about the environment as shown in Lal and Jha (1999). On the other hand, the legal system can take several years to settle a dispute and impose penalties (Breton, 2008). The threat of long lasting court disputes can foster rent-seeking activities. Duflo et al (2013) suggest that consultants for EIAs and the regulator’s own staff may have incentives to underreport pollution. They observe that independent verification of pollution reports through overlapping monitoring regimes, may have similar effects, based on environmental audits. Further, in weaker enforcement regime collusion between state-level authorities and regulated firms can also become an issue.

4. The impact on the birth of new polluting firms

In India, only registered formal sector firms are subject to environmental clearance since smaller informal firms tend to operate outside the control of pollution control authorities. The highlighted differences in regulatory capacity across states is likely to produce notable differences in compliance costs between locations and can, therefore, affect a firm's entry decision and, ultimately, the distribution of new polluting firms between states.

Figure 2 – Impact of the reform on the number of new polluting firms



Note: Authors' calculation based on the registrar of Companies of the Indian Ministry of Corporate Affairs. The plots are based on 3-year moving averages. The number of new firms is divided based on 2006 values so that a value of 1.3, for example, indicates an increase in firm births of 30% with respect to 2006. The shaded area indicates that SEIAA were progressively created in different states after 2006, mostly within 2 years from the reform. The first SEIAA was created in West Bengal in April 2007 and the last was instituted in December 2012 in the state of Jharkhand.

Data on firms' incorporation into the Registrar of Companies (RoCs)² show a striking difference in the patterns of firm births between high and low enforcing states in the post-reform period. Figure 2 shows the evolution in the number of new polluting firms over time by level of enforcement. This analysis includes all sectors for which the EIA was decentralized either for all firms or for firms satisfying certain criteria.

² Available at Indian Ministry of Corporate Affairs: <http://www.mca.gov.in/MinistryV2/master+details.html>

The data show that while firm births in low enforcing states followed pre-reform trends, a slowdown in births is observed in high enforcing states (green line). This compelling pattern in the data suggests that decentralization was associated with relatively fewer firm births in states with stricter environmental enforcement. Regression results confirm the negative impact of state-level enforcement on firm births in states with stricter environmental enforcement. Empirical results by Lovo (2017) shows that the overall impact is large - close to an overall 12% reduction in the number of new polluting firms. This is because the decrease in the number of polluting firms in high-enforcing states has been substantially larger versus the increase experienced by low enforcing states, due to their lower economic capabilities.

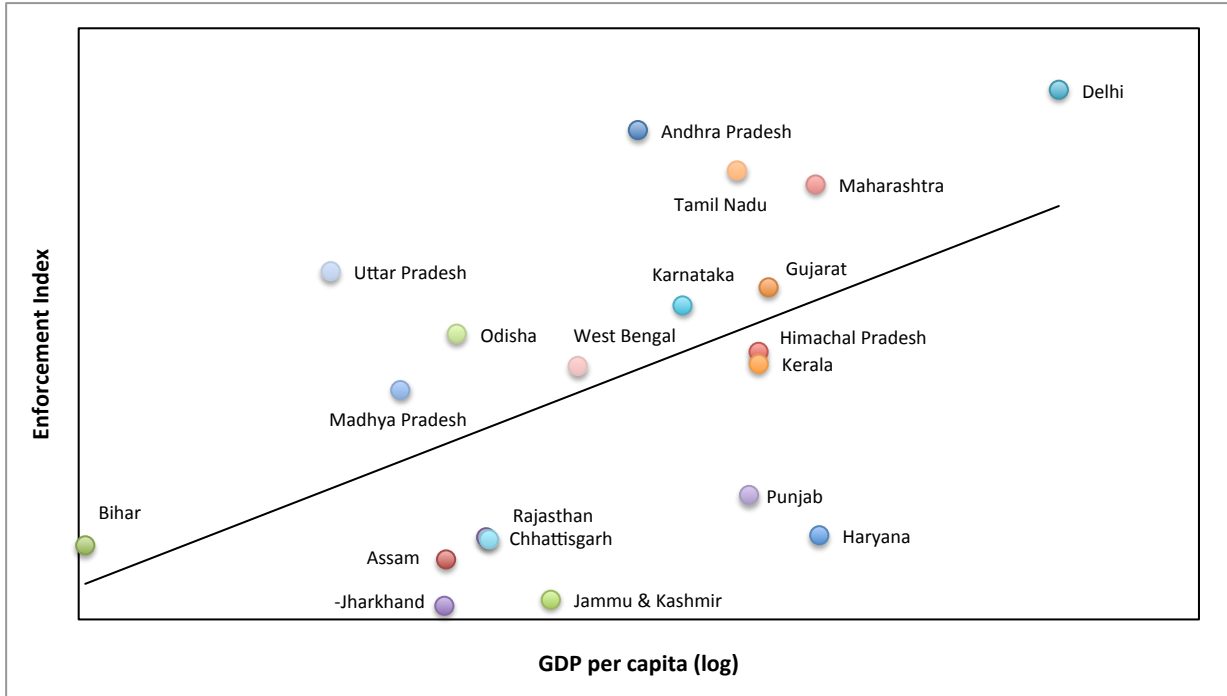
The effect is consistent with an increase in average regulatory stringency driven by states with higher levels of enforcement. The pre-reform EIA was considered to be relatively lax in India (Jha-Thakur, 2011) and given the anecdotal evidence on the proliferation of unchecked polluting firms, the results show that the reform has been successful in limiting the creation of new polluting activities. The results are also suggestive of an actual decrease in the number of new polluting firms rather than a switch to informality that would, instead, imply no gains in terms of environmental benefits (Lovo, 2017).

5. Discussion and Recommendations

India's commitment to environmental protection and regulatory enforcement has grown incrementally in the last ten years (Kini et. al. 2017). Our findings indicate that the decentralization process has led to an increase in the average regulatory stringency and has been successful in reducing the number of polluting activities.

The effects are varied between states, wherein the majority of the high enforcing states have accrued environmental benefits, while more needs to be done in other states. If the regulatory gap between low and high enforcing states is maintained, the reform could, however, potentially trigger an opportunistic behaviour by states with lower economic development where lower regulatory enforcement could be aimed at attracting new polluting industries (Figure 3). While the economic gains could be substantial, the health and environmental consequence could also be considerable (Graff Zivin and Neidell (2013). This has important implications for EIA regulation, which should take into consideration the disparities in environmental enforcement across states in any future amendments. The Centre could also be involved in enabling knowledge sharing of best practices between states, as well as in capacity building for resource constrained states to develop technical, financial and administrative performance. Without addressing the technical, financial and administrative needs of different States, increased environmental stringency could translate into excessive bureaucratic burden to firms. Findings from Enterprise Survey by the World Bank (2014) suggest that about 12% of firms already report tax administration and business licensing and permits as a major obstacles to business, preceded by corruption (20%) and inadequate electricity supply (15%).

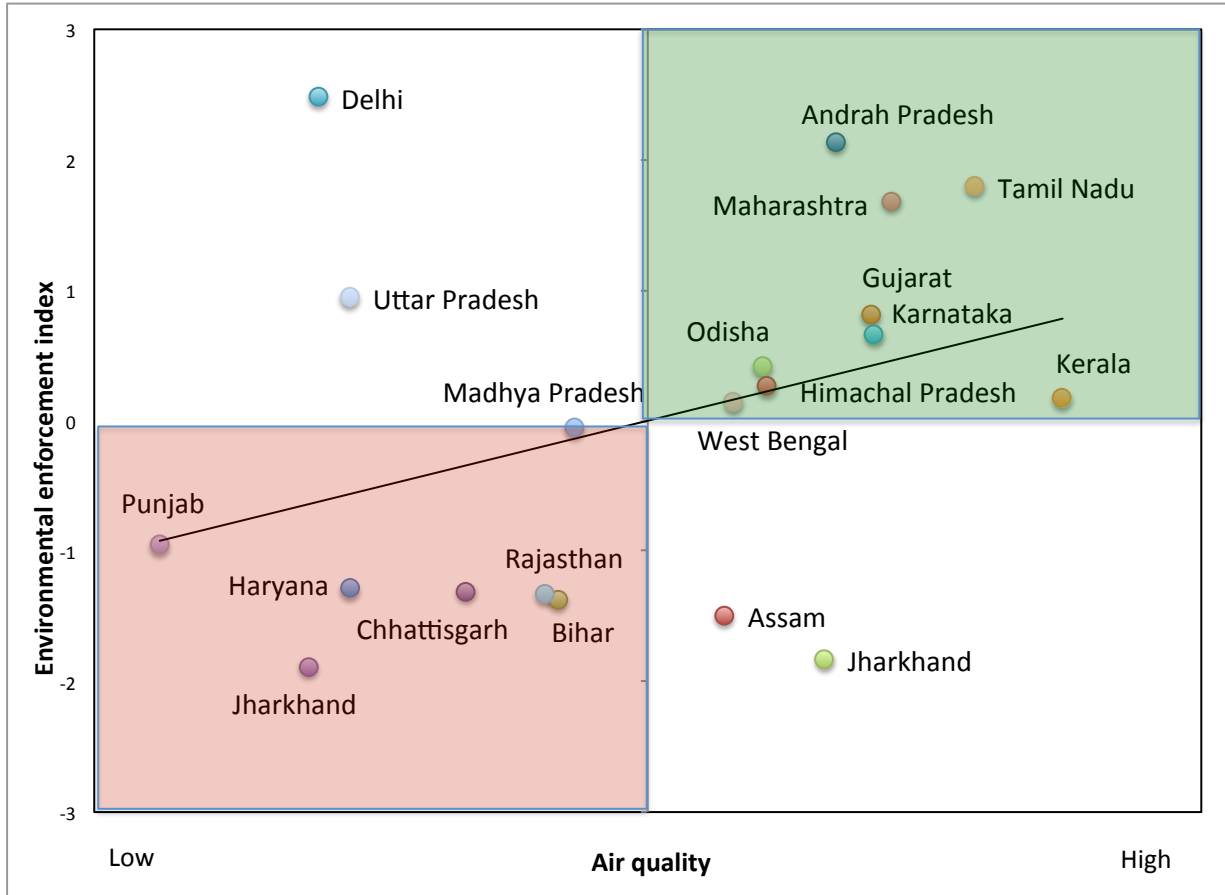
Figure 3 – Environmental enforcement and state-level GDP per capita.



Note: the graph shows the relationship between the environmental index in Table 1 and residual air quality, obtained by computing the residuals of a regression of Respirable Suspended Particulate Matter (RSPM) (source: <https://data.gov.in/>) with GDP per capita.

The ultimate goal for stricter EIA and environmental enforcement through rigorous pollution control is improving environmental quality. Our analysis of the relationship between environmental enforcement index and environmental quality in Figure 4 clearly shows that, states with stricter enforcement enjoy better air quality (top-right panel). Our analysis shows that in spite of a high enforcing index, Delhi (with highest GDP per capita in India) has low air quality (it is ranked among WHO's 20 most polluted cities in the world). The reasons for low air quality in Delhi include automobile emissions, industrial pollution and garbage dumps, inadequate infrastructure, geographic location including pollution from burning agricultural waste and forest in nearby regions. Environmental decentralization could play a key role in forming regulations tailored according to the requirements and conditions of specific states and cities. Collaborations between private and public sector can also play an important role (Kattumuri and Kurian, 2017). The EIA and SEIAA together with State Pollution Control Board could do more to regulate pollution in Delhi and other eight Indian cities which are among 20 most polluted cities in the world based on PM2.5 levels according to WHO.

Figure 4 – Environmental enforcement and air pollution by state



Note: The environmental enforcement index is from Table 1 and residual air quality was obtained by computing the residuals of a regression of Respirable Suspended Particulate Matter (RSPM) (source: <https://data.gov.in/>) on GDP per capita and population.

Recommendations

1. The decentralization of EIA processes have improved environmental regulation and been successful in reducing polluting activities in India. The evidence suggests that decentralization was associated with relatively fewer firm births in states with stricter environmental enforcement. The EIA, SEIAA and State Pollution Control Board should collaborate and enhance enforcement of environmental regulation to reduce disparities between states. Developing stronger centre-state, intra- and inter-state collaborations would be beneficial for knowledge-and-resource sharing and improving technical, financial and administrative capabilities across states.
2. A critical evaluation of all high polluting firms should be undertaken in order to assess and accordingly include all relevant firms into the regulatory process. With an increasing upward economically mobile population and growing consumption levels, it

is essential to reassess the inclusion of all relevant industries, including automobile industry, for EIA process. Regular monitoring and reporting should be mandatory.

3. Having progressed 30 places for 'Ease of Doing Business', India is ranked 100th among 190 countries by World Bank's Doing Business Report 2018. The country should improve its ease of doing business further together with enhancing environmental stringency of companies.
4. Enhance responsible and effective governance and judicial processes to be more conducive to improve implementation of regulations.
5. Ensuring public consultations and representations and engagement with civil societies would be beneficial for enforcement of environmental compliance.
6. In any future reforms it would be beneficial to consider extending EIA processes to be applicable to SMEs, as it can contribute greatly toward achieving India's goals for environmental sustainability.

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