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Decentralisation of Environmental Regulations in India

RUTH KATTUMURI, STEFANIA LOVO

The decentralisation of Environment Impact Assessment processes has improved the enforcement of environmental regulations and been successful in reducing polluting activities in India. Evidence suggests that decentralisation was associated with relatively fewer firm births in states with stricter environmental law enforcement. In such a scenario, the development of stronger collaborations between various stakeholders would enhance the enforcement of environmental regulations and reduce disparities between states, through knowledge and resource sharing, and improving technical, financial and administrative capabilities.

(Figure 1 accompanying this article is available on the *EPW* website.)

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Environmental protection rights and duties have long been a part of the Indian Constitution. Elaborate laws relating to environmental protection have their genesis in the enactment of the Water Act of 1974. The central government, through the Ministry of Environment, Forest and Climate Change (MOEFCC) and the Central Pollution Control Board (CPCB), is responsible for planning and formulating national policies and standards. The implementation and enforcement are decentralised and are the responsibility of the State Pollution Control Boards (SPCB). On the one hand, the decentralisation process has the potential to reduce the burden on the central government and to accelerate the approval process. On the other, the decentralised 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 the decentralisation 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 the homogeneity of common goals and priorities. At the same time, there could be trade-offs on the success of any decentralisation 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 law compliance is sometimes seen as a barrier to business creation and expansion. Hence, it is crucial to strike a 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 the increase in workload of state authorities because of court-ordered directives (OECD 2006). To overcome the 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 (CIKPMG 2015).

In this article, we discuss the implications of the decentralisation of environmental regulation in India. We draw insights from Stefania Lovo (2018), who investigated the impact of the 2006 Environmental Impact Assessment (EIA) reform on the birth of polluting firms. In particular, we examine whether the 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 (2018), we examine variations across states in India.

EIA Reforms

All firms in India are formally required to receive clearance through an EIA before they can start operating. The 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, namely, the 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 2018).

Firms in certain sectors are no longer subject to a decision from the central authority but have to apply for environmental clearance to the SEIAAs. Polluting sectors that were not affected by decentralisation and maintained centralised procedures are offshore; and onshore oil and gas exploration, development and production; petroleum refining; asbestos milling and asbestos-based products; soda ash industry; chemical fertilisers; 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 EIA (MOEF 2005), which seems counterproductive since this industry is known to be among the largest sources of pollution.

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.¹ The MOEFCC had published a draft notification,² 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, even if they might be in violation of the EIA criteria. This proposal was opposed by civil society organisations, which argued that these proposed changes would allow firms to continue violating environmental laws. This representation led to a revised notification.³ 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 firm's continued operations. We note that while the 2006 reform allowed for public consultation in the procedure for the evaluation of violating firms, the new process does not specify this categorically. Public consultations have enabled formal representation of environmental concerns from communities and hence, it would be beneficial to make it mandatory for the Expert Appraisal Committee, within the current framework, to undertake public consultation before finalising their reports.

Enforcement across States

Environmental law 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).

Regulatory stringency is very difficult to measure because it is a multifaceted concept that no single indicator can fully capture. Lovo (2018) combines five different indicators of environmental enforcement into a single index. Figure 1 (available on EPW website) 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 law enforcement. The democratic system

in India offers the opportunity for engagement and representation by the general public and civil society organisations, 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 regulations are implemented. The selected indicators are highly correlated. Descriptive evidence suggests that state pollution authorities such as the SPCBs suffer from inadequate technical facilities and skilled personnel for monitoring and filing charges (OECD 2006).

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 under-report 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 regimes, collusion between state-level authorities and regulated firms can also become an issue.

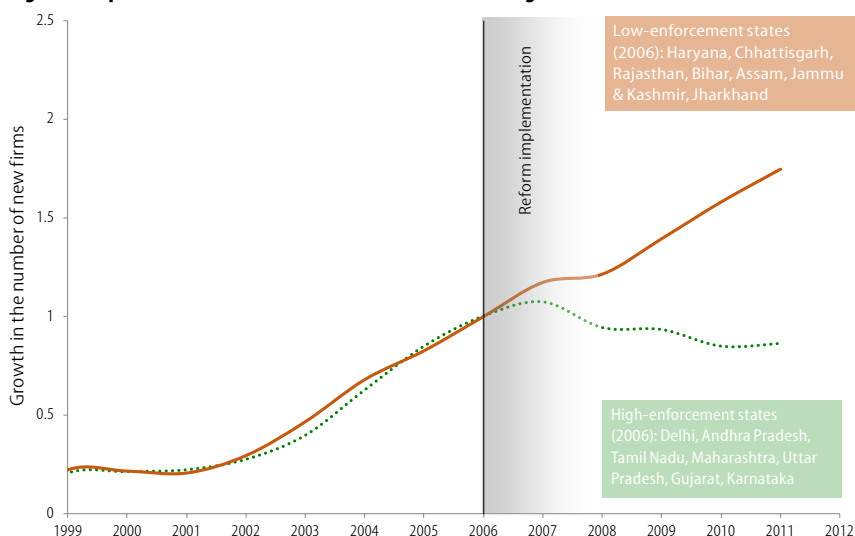
Birth of New Polluting Firms

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. Data on firms' incorporation into the Registrar of Companies (Ministry of Corporate Affairs 2018) 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 of the number of new polluting firms over time by level of enforcement. This analysis includes all sectors for which the EIA was decentralised, either for all firms or for firms satisfying certain criteria.

The data show that while firm births in low enforcement states followed pre-reform trends, a slowdown in births is observed in high-enforcement states (line below). This compelling pattern in the data suggests that decentralisation 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 law enforcement. Empirical results by Lovo (2018) show 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-enforcement states has been substantially larger, versus the increase experienced by low-enforcement states, due to their lower economic capabilities.

Figure 2: Impact of the Reform on the Number of New Polluting Firms



The data is derived from the authors' calculation based on the Registrar of Companies of the Indian Ministry of Corporate Affairs (2018). The plots are based on three-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 two years from the reform. The first SEIAA was created in West Bengal in April 2007 and the last was instituted in December 2012 in Jharkhand.

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 reform has been successful in limiting the creation of new polluting companies. 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 2018).

Table 1: Environmental Enforcement Measures and Construction of the Enforcement Index

Rank	State	Index	Non-governmental Organisations	Judgments	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

The column header indicates the name of the variable. The given 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. For the original sources of the data, please refer to Lovo (2018).

Discussion and Recommendations

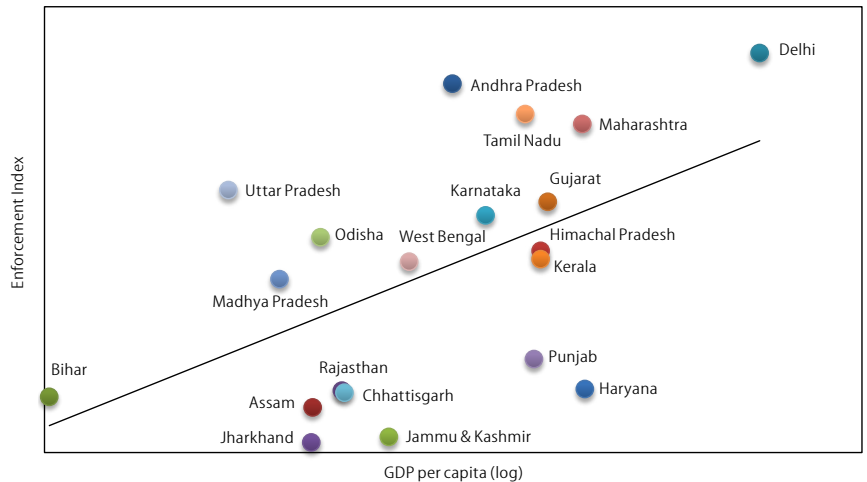
India's commitment to environmental protection and regulatory enforcement has grown incrementally in the last 10 years (Kini et al 2017). Our findings indicate that the decentralisation process has led to an increase in the average regulatory stringency and has been successful in reducing the number of polluting activities. The effects are varied between states, wherein the majority of the high-enforcement states have accrued environmental benefits, while more needs to be done in other states. If the regulatory gap between low- and high-enforcement states is maintained, the reform could, however, potentially trigger opportunistic behaviour by states with lower economic development, where lower regulatory enforcement could be aimed at attracting new polluting industries (Figure 3, p 36). While the economic gains could be substantial, the health

and environmental consequences could also be considerable (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 on firms.

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 gross domestic product per capita in India) has low air quality. The reasons for low air quality in Delhi include automobile emissions, industrial pollution, garbage dumps, inadequate infrastructure, geographic location including pollution from burning agricultural waste and forest in nearby regions. Environmental decentralisation 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 sectors can also play an important role (Kattumuri and Kurian 2017). The EIA and SEIAA, together with the SPCB, could do more to regulate pollution in Delhi and other eight Indian cities which are among the most polluted cities in the world based on particulate matter (PM) 2.5 levels, according to the World Health Organization (World Economic Forum 2018).

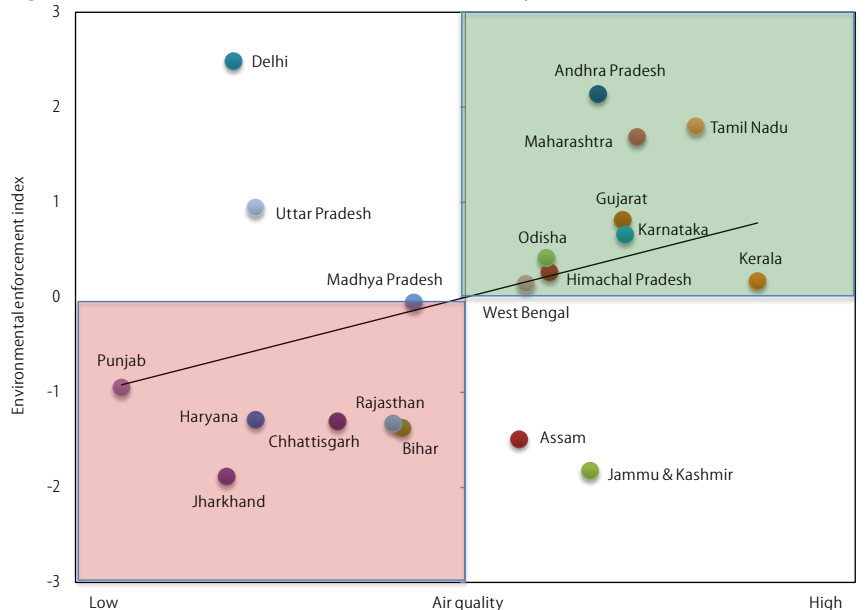
Administrative processes remain to act as bottlenecks. As reported by the World Bank Enterprise Survey (World Bank 2014), about 12% of firms report tax administration and business licensing and

Figure 3: Environmental Law Enforcement and State-level Gross Domestic Product (GDP) Per Capita



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) (sourced from <https://data.gov.in/>) with GDP per capita.

Figure 4: Environmental Law Enforcement and Air Pollution by State



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) (sourced from <https://data.gov.in/>) on GDP per capita and population.

permits as major obstacles to business, preceded by corruption (20%) and inadequate electricity supply (15%). Hence, further improvements are required in administration processes.

Following are six recommendations toward enhancing environmental regulation in India. (i) The decentralisation of EIA processes has improved environmental regulation and has been successful in reducing polluting activities in India. The evidence suggests that decentralisation was associated with relatively fewer firm births in states with stricter environmental enforcement. The EIA,

SEIAA and SPCBs should collaborate and enhance enforcement of environmental regulations to reduce disparities between states. Developing stronger centre–state, intra- and interstate collaborations would be beneficial for knowledge and resource sharing and improving technical, financial and administrative capabilities across states. (ii) 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 increasingly upward economically mobile population and growing consumption levels, it is

essential to reassess the inclusion of all relevant industries, including the automobile industry, for the EIA process. Regular monitoring and reporting should be mandatory. (iii) Having progressed 30 places in the “Ease of Doing Business,” India is ranked 100th among 190 countries by the World Bank’s Doing Business Report, 2018. The country should improve its ease of doing business further, together with enhancing compliance with environmental laws by companies. (iv) It is necessary to enhance responsible and effective governance and judicial processes to be more conducive to improve the implementation of regulations. (v) Ensuring public consultations and representations and engagement with civil society and allied organisations would be beneficial for ensuring compliance with regulations. (vi) In any future reforms, it would be beneficial to consider extending EIA processes to be applicable to small and medium enterprises, as it can contribute greatly towards achieving India’s goals for environmental sustainability. As India enhances its commitment to environmental sustainability through technological advancements and processes, the country is well placed to progress further in ensuring the highest standards of environmental regulations.

NOTES

- 1 As per the notification S.O. 147 (E) dated 15 January 2016.
- 2 As per the notification S.O. 1705(E) dated 10 May 2016.
- 3 As per notification S.O. 804(E), issued by the MOEFCC on 14 March 2017.

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EXPANSION

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State-wise Agricultural Statistics

The Economic and Political Weekly Research Foundation (EPWRF) has added State-wise data to the Agricultural Statistics module of its online database, India Time Series (ITS).

State-wise time series starts from 1960–61, depending upon data availability, and covers:

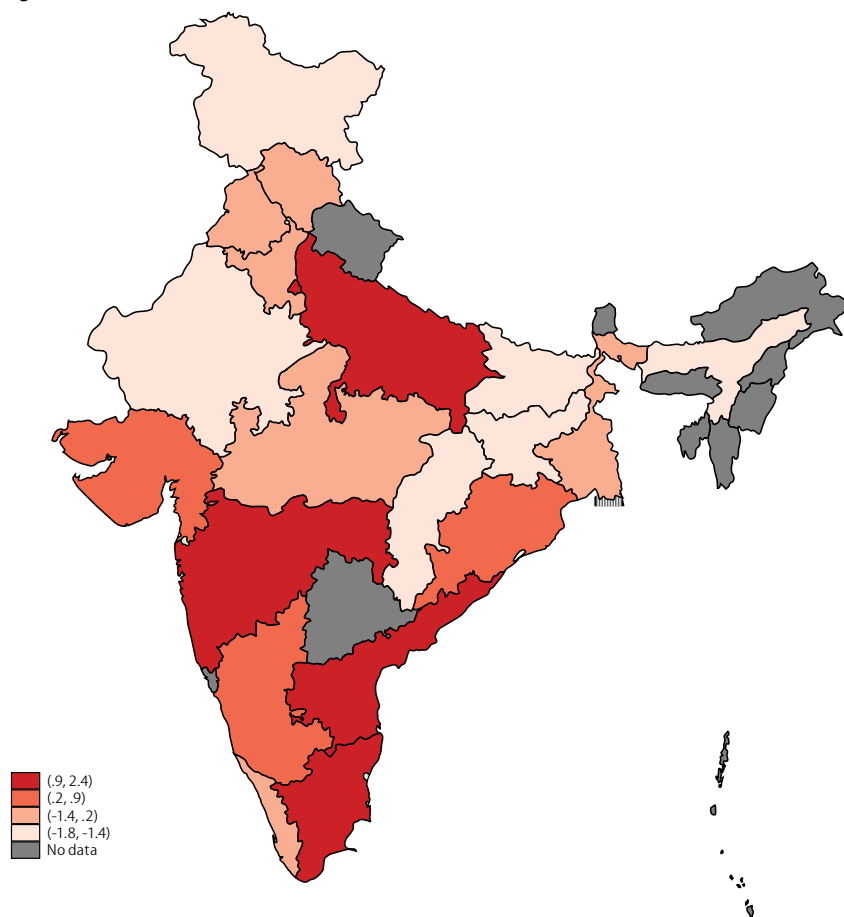
- Area, Production and Yield (APY): Foodgrains, Oil seeds, Fibre crops, Spices, Horticulture crops, Plantation crops and Other crops
- Land-by-Use and Area under Irrigation (source-wise and crop-wise)
- Production and Use of Agricultural Inputs: Fertilisers and Electricity
- Procurement of Foodgrains
- Livestock Statistics: Production and Per Capita Availability of Milk, Eggs, Fish, Meat and Wool
- Livestock Population: Rural and Urban areas
- Value of Output from Agriculture and Allied Activities, with different base years

Following statistics have been added to the All-India data series:

- Minimum Support Prices (MSP) of Crops
- Livestock Population: Rural and Urban areas

The EPWRF ITS has 17 modules covering a range of macroeconomic, financial and social sector indicators on the Indian economy.

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Figure 1: Variation in Environmental Law Enforcement across States

The map plots the environmental enforcement index for states based on data from Lovo (2018). Darker shades of red indicate stricter environmental enforcement. For some states, in grey, the index could not be computed due to lack of data.