



# POLICY Brief

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## Industrial Pollution – Can The News Media Influence Change?

India has some of the best environmental regulations in the world. Yet, pollution abounds and environmental degradation has almost become the norm. Formal regulatory institutions in India, as in many developing countries, are plagued with inefficiencies that make implementation of regulatory policies very difficult. In such a situation, it is small wonder that NGOs, the press and other civil society organizations have taken on the role of pollution vigilantes. However, does such non-governmental informal pressure work? Can the media, particularly the vernacular press, act as a means of informal regulation in pollution control? A recent SANDEE study in India examines the impact of press coverage on pollution and concludes that informal regulations can have an impact on pollution.

The Gujarat-based study reveals that media pressure can influence pollution levels. This effect is not immediate and the impact is not uniform. However, sustained press coverage appears to have an impact on pollution released by industrial estates that have a mix of large, medium, and small industries within them. This implies that the role of civil society is very important in developing countries. Thus, policy makers need to re-think how the power and presence of NGOs and vigilant press can be used more effectively to influence the development process.

Vinish Kathuria's study is based on press coverage and monthly water pollution data from four water-quality monitoring stations. The pollution is associated with chemical and petrochemical industries located mainly on Gujarat's industrial 'golden corridor'.

### INFORMAL REGULATIONS AND POLLUTION CONTROL

South Asian countries, like so many other developing countries, are characterized by weak monitoring and regulatory systems that are unable to keep pollution under check. Government regulatory agencies are weighed down by inadequate tools, lack of information, corruption and limited incentives, making them inefficient in pollution control. Such failures in formal mechanisms have resulted in a search for unconventional options to control pollution. The result is what is referred to as 'informal regulation' or the 'third wave' of environmental policy, which relies on a vigilant civil society to change polluting behaviour.

The interest in informal mechanisms to curb pollution has resulted in new tools in industrial pollution control. Some policies that are increasingly popular are 'information disclosure' and 'rating' of industries. The Center for Science and Environment in India, for example, uses a "green leaves" award to rate industrial environmental performance, a system that is set up to shame industries into behaving better. Many examples from around the world confirm that firms are sensitive to reputational risks and future liability related costs emerging from polluting activities. Thus, they are willing to change behavior when confronted by an active press or civil society. This study seeks to understand the extent to which this type of responsive action is evident in industries in India.

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*This policy brief is based on SANDEE working paper No. 6-04 titled 'Informal Regulation of Pollution in a Developing Country: Empirical Evidence from India', by Vinish Kathuria. The full report is available at [www.sandeeonline.org](http://www.sandeeonline.org)*

Vinish Kathuria seeks to understand if firms change their polluting behavior in response to ‘informal channels’ of pressure. In addition to being driven by the profit motive, industrial firms are vulnerable to societal pressures and take these into account in making decisions about various inputs and outputs, including pollution. To what extent does overall press coverage of pollution and the resulted increase in awareness about pollution matter to firms? Do they respond to greater press information on pollution by reducing their output of dirty effluents? Vinish tries to answer these questions by studying pollution data from four water-quality monitoring stations in one of the fastest growing and most industrial states of India, Gujarat.

## INDUSTRIAL POLLUTION, GUJARAT, AND THE PRESS

Gujarat is ranked second in India, both for its levels of industrialization and for levels of pollution generated. Gujarat has more than 90,000 industrial units and some 8000 of these are considered to be polluting. Most of the rivers passing through the state have become lifeless mainly due to industrial discharge. Water quality monitoring data shows that none of the water samples collected from monitoring stations located on two rivers — Sabarmati and Tapi — meet ambient water quality standards. The main reason for this level of pollution is both the number of industries and industrial estates as well as the type of industries found. Industrial development in Gujarat is dominated by chemical and petrochemical industries. About 70 percent of the investment in Gujarat since the 1970s has been in the chemical sector, which has had a serious effect on water quality.

The press is quite active in Gujarat. Nonetheless, despite being an industrial state and in some ways a pollution haven, coverage of pollution is rather limited. Table 1 below provides details about the extent of press coverage of pollution (mainly water related) over a seven year period. Approximately 226 articles appeared in the English and vernacular press about pollution in Gujarat during this time. Of these, some 77percent provided negative publicity to industries. Thus, even though the press did not cover pollution on a daily basis, when it did, it was mostly negative.

## ARTICLES AND COURT RULINGS PERTAINING TO INDUSTRIAL WATER POLLUTION IN GUJARAT

Year	Total Articles/Decisions	Articles/Court Decisions on Gujarat	% of Gujarat articles against Industry
1995	28	15	87 %
1996	53	21	76 %
1997	68	23	74 %
1998	94	37	62 %
1999	95	73	78 %
2000	31	26	85 %
2001	31	31	87 %
<b>Total</b>	<b>400</b>	<b>226</b>	<b>77 %</b>

Source: *Gujarat Law Reporter* (various issues), *Gujarat Law Herald* (various issues), GPCB Annual Reports (various years), Different Newspapers, Divan and Rosencranz (2000).

## DIFFERENT FACTORS CAN INFLUENCE INDUSTRIAL POLLUTION

The study tries to explain the effect of informal regulation on the equilibrium level of pollution for the region through a demand-supply model for pollution. Industrial pollution is a result of a variety of factors. In this study, pollution is considered to be linked to the type of production technology used, weather conditions, efficiency of production, and regulations related to pollution. Media reporting on the damage to environment is expected to caution industrial units through a signaling effect and thus effect a change in polluting behavior. The author tests this hypothesis with a simple econometric model.

Pollution is hypothesized to increase with increases in industrial production activity, the total output in the region and the average age of industrial plants (technology). Other factors that are likely to have pollution are meteorological conditions, water flow that dilutes pollution, formal regulations and the press. The press is treated as a proxy for a vigilant civil society. Formal regulations are expected to have a negative influence on pollution. The study uses the ‘number of Pollution Control Board staff allocated for the area’ as an indicator of the influence of formal regulations.



## MEASURING POLLUTION AND INFORMAL REGULATIONS

The study has two main components – understanding variations in pollution levels and defining and capturing the impact of informal regulation. The author employs monthly data on ambient pollution levels from pollution ‘hot spots’ in Gujarat, which include large, medium and small-scale industries (both industrial estates and scattered units).

**Pollution levels:** The study focuses on water quality readings from four water-quality monitoring stations in Gujarat, where pollution parameters exceed standards — Amla Khadi, Khari, V.N. Bridge and Vautha. The first two, Amla Khadi and Khari, receive effluents from industrial estates, while V.N. Bridge and Vautha receive effluent from scattered and dispersed industrial units. The study uses monthly pollution data for a five-year period from January 1996 to December 2000 from these four monitoring stations. In particular, it uses chemical oxygen demand (COD), or the amount of oxygen required to degrade the organic compounds of wastewater, as an indicator of pollution.

**Informal regulation:** The author uses a broad measure of informal regulation captured as the number of articles published in the vernacular and leading national newspapers on industrial water pollution in Gujarat. In addition, decisions on Public Interest Litigations, *suo moto* notices issued by the High Court, and press releases by the local Pollution Control Board (PCB) are also included.

## SANDEE

**The South Asian Network for Development and Environmental Economics (SANDEE) is a regional network that seeks to bring together analysts from the different countries in South Asia to address their development-environment problems. Its mission is to strengthen the capacity of individuals and institutions in South Asia to undertake research on the inter-linkages among economic development, poverty, and environmental change, and, to disseminate practical information that can be applied to development policies. SANDEE's activities cover Bangladesh, Bhutan, Nepal, India, Pakistan and Sri Lanka.**

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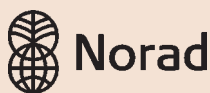
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## DOES THE PRESS MATTER ?

Vinish Kathuria undertakes a careful analyses of his data and provides some interesting insights about the relationship between the press and pollution output. This study suggests that:

1. The effect of informal regulation is not immediate, however, if media pressure is sustained, pollution generation declines. The most significant impact is achieved with six to seven months of sustained media pressure.
2. Informal regulations have the most impact on industrial estates with large, medium and small units. The reason posited is that industrial estates are better organized (through local industry associations) relative to scattered production units and respond proactively to media pressure.
3. The number of pollution control board staff allocated for an industrial area fails to impact polluting units. Thus, the effect of formal regulatory systems on pollution seems to be minimal.
4. Small scale scattered industries are likely to remain very difficult to regulate. Neither formal nor informal regulations seem to influence pollution that is a result of a number of smaller dispersed industries.

## NEXT STEPS

It is clear from the results of the study that while informal regulation has worked only partially for Gujarat – sustained media pressure can have an impact. While the search for the 'right' policy instrument remains elusive, the present study suggests the following policy options:

- Lobbying efforts by NGOs, environmental activists and other concerned groups in a sustained manner through the media can certainly impact the behavior of errant industrial units towards the achievement of environmental goals. Thus, there is a role for policy instruments that are based on monitoring, ranking, and providing publicity on polluting and performing industries.
- The government would do well to focus on the 'efficiency' aspect of its own monitoring efforts. There is a need to assess existing formal mechanisms and to identify incentives that can improve the performance of formal regulations.
- Small Scale Industries present a 'black hole' in terms of regulatory instruments. More careful analysis is required to bring the informal sector under the purview of both formal and informal regulations and policies.

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