

A Study on Environmental Compliance in India

Turkish Online Journal of Qualitative Inquiry (TOJQI)

Volume 12, Issue 8, July 2021: 5302 – 5311

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Abstract:

Environment has finally risen to the top of the global political agenda. The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 signified international recognition of the environment as an issue that could not be constrained by the borders of nation states. But Rio also revealed deep political divisions on the world environmental stage. Those divisions were represented and articulated primarily as a North–South, rich versus poor country schism. Ironically, the ecological internationalism that was to be the breakthrough of the conference gave way to positioning in which negotiations were geared back to the interests of nation states. Yet the politics of Rio mask a different type of environmental politics, one that is much closer to home for the majority of the world’s people. The politics of environment in most countries of the world are played out not only at a different level, but also within a quite different structural framework. Environmental politics within individual nation states reflect, but also increasingly act upon, specific aspects of social relations and power structure within each country, while interests and interdependencies of the main protagonists often transcend national borders. These politics of environment are an important force in their own right as well as a window on broader aspects of political economy. There is thus a reflexive relationship between environmental conditions, discourses and activism on the one hand and changing economic, social and political relations on the other. Nowhere is this more the case than among those countries of the world where environmental and political–economic change is most rapid, notably the dynamic societies and economies of Southeast Asia whose bio-physical environment and resource base have undergone rapid degradation. This article discuss the laws which India has compliance towards saving its Biodiversity.

Key words: *Environmental Laws, Biodiversity, pollutions, United Nation, Green Tribunals, public Interest Litigation.*

INTRODUCTION

The institutional structure for environmental management in India began to be built systematically in the early 1970s during the preparation for the 1972 Stockholm Conference on Human Development. The first pollution control legislation was enacted in 1974, and regulatory bodies were established at the centre and some states. In 1976 the Constitution of India was amended to explicitly delineate the responsibility of environmental protection on the state and the citizens. In particular, the protection

and improvement of forests and wildlife were made a directive principle of state policy and a fundamental duty of all citizens.

Following the Bhopal gas tragedy in 1984 (due to a leak from the Union Carbide plant) a new apex body for enforcing environmental quality standards in the country, namely the Ministry of Environment and Forests, was formed in 1985. One of the most important environmental laws was enacted soon after, in 1986: the Environmental Protection Act, an umbrella legislation under which several laws and notifications have been passed since.

Today India has an elaborate set of environmental protection legislation and an intricate network of pollution control boards across the country administering these laws. More recently, the need for a comprehensive environmental management statement culminated in the National Environmental Policy of 2006, which endorsed all the different national and sectoral policies on environmental management, like the National Forest Policy of 1988, the Policy Statement on Abatement of Pollution of 1992, the National Water Policy 2002, and so on. The polluter-pays principle has been endorsed since 1992 in India and forms the founding principle of the country's environmental policy. The compliance of the polluter-pays principle depends on several factors, including the nature of environmental regulatory and legislative framework, the monitoring and enforcement capacity, availability and associated costs of pollution-abatement and pollution-prevention technology, and environmental awareness of the community. An environmental regime that uses market-based tools like environmental taxes/ charges and has strong monitoring capacity induces greater compliance from polluters. Moreover, greater environmental awareness and stronger preferences of the community push the industry toward greater compliance and often beyond compliance.

The environmental policy system in India is command-and-control in nature, consisting of environmental standards, mandatory installation of pollution equipment, no-objection certificates, and consents for industrial operations. The environmental standards refer both to the acceptable levels of specified parameters like particulate matter and sulphur/nitrogen oxides at industrial and residential locations (called ambient standards), as well as permissible levels of discharges of specified waste streams by different industrial activities (called emission standards). The regulatory standards are accompanied by penalties in the form of fines, imprisonment, and closure of industrial plants for errant behaviour.

The monitoring and enforcement efforts of the pollution control boards across India have been more focused on initial or static compliance (i.e., installation of end-of-pipe pollution abatement equipment), rather than continuous or dynamic compliance with the emission standards from pollution points. One reason could be the simplistic assumption of the regulators that the ability to control pollution on the part of the industry would automatically lead to dynamic compliance, which does not hold as long as polluters have an incentive to avoid the operating costs of the abatement equipment. More important reasons for the deficient monitoring and enforcement system arise from institutional limitations, including inadequate monitoring infrastructure and lack of technical capacity and trained staff.

From the polluter's perspective, the incentive for dynamic compliance under the existing regime in India has been low, especially since the associated probability of detection and penalty are low. Unfortunately, an increase in monitoring does not necessarily improve compliance, as evident from a study in the mid-1990s, which found that formal inspections by pollution control board officials did not affect subsequent plant-level emissions, perhaps due to the low level of penalties imposed and the low pay of the inspectors, who were thus amenable to bribery.

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Regulatory factors apart, industry compliance of environmental standards can be driven by market forces, and this seems to be an emerging pattern in India. It is well known in the economic literature that firms undertake voluntary pollution prevention actions in order to project an environmentally friendly and socially responsible market image with the goal of enhancing long-run profits. A recent event study in India assessed the effect of independent green ratings and awards by a non-governmental organization (NGO) on the respective stock prices of firms from three polluting sectors (large automobile, paper and pulp, and chlor-alkali firms), and found that weak environmental performance is penalized in the stock market by negative abnormal returns.

The Indian industry has also moved toward higher environmental benchmarking following their client specifications. This is especially true for export houses, which have acquired quality assurance and environmental management certifications, in order to maintain markets abroad. Finally, better environmental management often involves innovations to enhance resource efficiency, which leads to dynamic cost savings for firms. In India, even smaller firms have begun to appreciate the benefits of increased resource efficiency and accompanying eco-profits.

CURRENT STATE OF REGULATORY COMPLIANCE AND INSTITUTIONAL CHALLENGES

The environmental standards in India are both environmental media-specific (like air and water) for residential and industrial areas, as well as industry-specific pollution norms. Industries have been divided into three color-coded categories by the Ministry of Environment and Forests based on their respective pollution potential, such as red for highly polluting, orange for moderately polluting, and green for marginally polluting. There are 17 industries under the red category, and the state pollution control boards have had special enforcement drives for the installation of pollution-treatment facilities in these industries, failing which the plants are closed down.

All three categories of industries need consent for establishment and operation under the provisions of the Water Act of 1974 and Air Act of 1981. Small-scale industries and village/cottage industries, however, need only simplified no-objection certificates from the state, while non-polluting industrial activities like tailoring, weaving, carpentry, and the like do not require consent for operations. Moreover, since 1994 (amended in 2006) environmental impact assessment and environmental clearance have become mandatory for appraising and reviewing new projects or business expansion. Compliance with water standards has improved partially during the past 10 years. In particular, organic pollution of aquatic resources in India, as measured in terms of biochemical oxygen demand, improved during 1994–2019, but coliform pollution remains high, especially downstream in rivers. The major source of this pollution is domestic sewage from cities and towns, followed by industrial effluents.

In the major cities a large part of the domestic sewage is not even collected, and the installed capacity can treat only 20 percent of the sewage generated. This has led to stagnation of sewage within the cities and contamination of the groundwater, often the only source of drinking water for the urban population. As for industrial effluents, about 60 percent of the wastewater is generated by large and medium industries, which have installed adequate treatment facilities, but the remaining 40 percent is generated by small-scale industries, most of which do not have any treatment facilities.

The existing gaps in compliance with water standards have led to severe degradation in water quality in some cases. For example, the river Yamuna in North India is polluted mainly at the national capital region of Delhi, which is estimated to contribute about 79 percent of the total pollution load

in the river. Partially treated or completely untreated wastewater from domestic and industrial sources directly flow into the river through the city drains. Coupled with over extraction of water, the river has now lost the ability to purify itself, and has been reduced to a cesspool. More recently the regulatory attention has turned toward increasing sewage collection and treatment to improve the water quality of the river Yamuna. There is also an attempt to utilize treated water for irrigation instead of extracting more from the river, and to release fresh water into the river.

The industry compliance records of the regulatory boards, particularly for highly polluting industries, are quite good. Under a program initiated in 1993–1994 for grossly polluting industries discharging into rivers and lakes, 851 industries were identified as defaulters by 1997. After these firms were served warnings, 605 firms installed treatment facilities by 2003, and the remaining 238 defaulters were closed down (mostly in the southern state of Tamil Nadu and the northern state of Uttar Pradesh). Considering the regulatory focus has been on initial rather than continuous compliance among industrial polluters, it is not surprising that water quality in rivers and lakes has not improved significantly, despite the success of this drive.

Compliance in air quality standards has also been a mixed experience. While annual concentrations of pollutants like sulphur and nitrogen oxides are largely within the national standards across India, particulate pollution remains a major problem. The monitoring data for 2003–2020 indicate that the annual average concentration of suspended particulate matter and repairable suspended particulate matter is violated in most cities. Vehicles in urban India are the single largest source of repairable particulate matter, followed by industries.

The weak enforcement of environmental standards is recognized by the National Environmental Policy 2006 and is attributed to “inadequate technical capacities, monitoring infrastructure, and trained staff in enforcement institutions,” the “insufficient involvement of the potentially impacted local communities,” and the absence of institutionalized public-private partnerships in enhancement of the monitoring infrastructure.

While local community participation has been lacking, India has experienced a strong wave of environmental public interest litigation (PIL) prompted by individuals as well as NGOs since the mid-1980s.

Environmental PIL and the resultant judicial activism have succeeded in targeting errant firms, have ushered in new environmental regulations, and also have helped focus the regulators’ attention on certain polluting sectors and industries. For instance, the remarkable improvement in urban air quality in the city of Delhi during the late 1990s directly followed from the set of Supreme Court rulings on vehicular pollution that banned leaded fuel, banned old commercial vehicles, phased out diesel-powered buses, and imposed the use of natural gas fuel. Indian civil society has in its unique way supplemented the deficient formal enforcement effort and helped increase compliance in the transportation sector and among large industrial polluters.

To increase the onus on the industrial polluters, the Ministry of Environment and Forests adopted a charter on corporate environmental responsibility in 2003 for the 17 highly polluting industries. This marks the current regulatory regime’s move from a narrow focus on pollution abatement toward the more holistic resource-efficiency approach. In some states, industries have been encouraged to move toward zero-discharge plants, especially in leather tanning and distilleries, through recycling and resource recovery. There are also efforts to augment the technical capacity of monitoring and enforcement by the ministry. For example, an environmental cooperation program between the

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Ministry of Environment and Forests and the U.S. Environmental Protection Agency in 2003 included a training of inspectors from several state pollution control entities.

CORPORATE ENVIRONMENTAL PERFORMANCE: COMPLIANCE AND BEYOND

While regulatory pressure is an important factor in environmental compliance, industrial polluters choose to improve environmental performance when it makes good business sense independent of regulatory enforcement. Indian industry has now embarked on the path of greater environmental compliance driven by economic factors: either to achieve a good market image in the case of large firms, to follow client specifications (foreign or domestic) in order to retain/expand business, or to realize cost savings with the move toward cleaner production.

The advantage of an industry movement toward cleaner production driven by economic reasons is that environmental compliance then ceases to appear as a burdensome cost (following regulation). Indeed, businesses may be encouraged to move beyond compliance and use the environmental performance of their products as a market differentiation tool to appeal to environmentally conscious consumers. This phenomenon has resulted in a plethora of voluntary product eco-labels in the industrial countries, which are used as market indicators of lower environmental impact of the concerned product, including Energy Star, Blue Angel, Greengard, Forest Stewardship Council, and so on. A more universally accepted and popular environmental differentiator is the ISO 14001 certification for environmental management systems, which has become a popular environmental differentiator among Indian firms. The ISO 14001 represents a more dynamic environmental compliance performance.

The ISO 14001 certifications have steadily increased in India from 400 in December 2001 to 312,580 in December 2019. While the absolute number of certifications is not as impressive as those of China, Indian firms have been quick to respond to the new 2018 version, and more than half the certified firms comply with the later version.

Among the larger firms in India, the adoption of better environmental practices in terms of pollution reduction, prevention, and resource saving is well documented. Small firms are generally not expected to adopt environmental protection processes, as these costs are not viable for them. As noted earlier, the environmental standards for small-scale industrial units are relaxed in India and the state pollution control boards (SPCBs) at best act as facilitators for establishing common effluent treatment plants in clusters of small polluters. The SPCBs allow for some degree of nonconformity with environmental standards, since setting up of pollution control systems may not even be physically feasible given the small area of operation of micro firms.

End-of-pipe pollution equipment and patented clean technology are typically too expensive for small firms, but sometimes it is possible to adopt simple pollution-preventive processes in a cost-effective manner, as has been the experience of Arjan Auto. Located in the industrial town of Gurgaon, Haryana, Arjan Auto Pvt. Ltd. is a manufacturer of automotive parts catering to the domestic market. Most of its business is conducted with Maruti Udyog Limited, the largest passenger car manufacturer in India. Although Maruti has encouraged its suppliers to adopt environmental management systems like ISO 14001, a small firm like Arjan Auto never seriously considered such a certification. However, participation in a pilot project under Eco profits succeeded in convincing the firm that it is possible to be lean and green when ecological considerations are integrated in the production process in a systematic manner.

Arjan Auto's journey with the Eco profit project began with the goal to reduce operational costs and improve resource efficiency of its plant. Some of the measures required in the path of higher resource efficiency were very simple, like changing the layout of material flow in the factory, reusing water, and mechanical cleaning of metal parts instead of chemical cleaning for derusting. Yet these simple steps raised the throughput, reduced pollution, and encouraged the company to continuously review its processes for improving its environmental and economic performance. Today the plant had undertaken two-thirds of the measures that are required for ISO environmental management system certification, and although the journey did not begin with the objective of acquiring this certification, Arjan Auto now plans to get the ISO 14001 certification next year.

This case highlights two important features: First, even when regulatory environmental enforcement is poor and the market-/client-driven incentive to adopt cleaner production is insufficient, the industry would still move toward greater compliance if doing so raises economic profits. Second, productivity gains through better resource and environmental management can be scale-independent (i.e., can be reaped by small firms), and some measures to this end involve inexpensive plant-specific innovations.

REVIEW OF NEW ENVIRONMENTAL POLICY OF INDIA 2020:

The proposal to weaken policies for environmental protection with the Environmental Impact Assessment (EIA) draft, 2020, has resulted in widespread public concern. Climate change, environmental degradation, extinction of species and resource pollution are some of the biggest challenges of the century. The only way to combat these is through collective action from governments and people globally.

On this front, India committed to international initiatives like the Bonn Challenge, the Kyoto Protocol and the Paris Agreement. Climate change mitigation at the national level is primarily through efficient energy policies and afforestation, but key components for meeting these were strong and well-implemented laws.

There is wide scepticism about strong environment laws, holding them responsible for economic loss. Research on environmental policy showed strong environmental laws both globally and in India were largely effective in reducing environmental degradation in the long run and in sustaining economic growth. Beyond the legal framework, biodiversity and public stewardship also had positive outcomes on the environment and climate goals.

Given the backdrop, the proposal to weaken policies for environmental protection with the Environmental Impact Assessment (EIA) draft 2020, resulted in widespread public concern. The United Nations Environment Program (UNEP) defined EIA as a tool to identify environmental, social and economic impacts of a project prior to decision-making. The draft EIA notification, 2020, which will replace the 2006 notification, was introduced on March 23, 2020 by the Union Ministry of Environment, Forest and Climate Change. It aimed to bring about a number of changes to environmental governance in the country, which potentially compromise environmental safeguards while being pro-industry.

Fundamentally, the EIA draft goes against guidelines laid down by the Supreme Court of India and the National Green Tribunal (NGT), undermining the basic constitutional philosophies of the rule of law and co-operative federalism. It also stands to endanger the fundamental right to a clean environment under the Right to Life. Contrary to the proposed changes, the need of the hour is to strengthen environmental regulations by improving the quality of baseline surveys, introducing a

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stronger system of checks and balances and making the process more transparent and inclusive for different stakeholders.

Ecological dimension

Natural environments globally provide services worth \$44 trillion annually, according to a study by The Economics of Ecosystems and Biodiversity and UNEP in 2012. Due to their inherent complexity, however, ecosystems can be extremely difficult and disproportionately costly to recover after a significant disruption. Aligned with this, the NGT designated the 'precautionary principle' to be among the basic tenets of environmental justice.

The provisions for post-facto clearance in the new draft allows industries to violate EIA norms first and seek a clean chit afterwards contrary to the rule of law, according to the Supreme Court. A one-time amnesty protocol was developed in 2017 for projects that violated the rules under EIA 2006 and these were to be remedied through compensation or penalties.

LG Polymers India Pvt Ltd in whose plant in Visakhapatnam, a tragic gas leak occurred in May 2020 was among these violators. Incidents such as these will likely increase in frequency if post-facto clearance becomes commonplace. While the preparation of EIA is just a starting point, the exercise is meaningless without diligent monitoring and compliance with the mitigation measures.

Ecosystems often respond to external changes after a time lag and continuous monitoring is critical to capture tipping points. At a time when violations such as the gas leak in Visakhapatnam and the oil field incident in Baghjan have become increasingly frequent, relaxing compliance reports from twice a year to once a year is seemingly regressive. Additionally, the provision of EIAs based on a single season of data can potentially make the analysis incomplete and misleading, masking the full environmental impact of a project.

Ecological studies from around the world showed there was a lot of within-year and between-year variation in ecological data, environmental conditions and population sizes of plants and animals. Single-season data is not representative of natural variations and cycles, making extrapolations inaccurate. In general, biodiversity assessments take a backseat in EIAs, since pollution control boards (PCB) that play a prominent role in these assessments are likely to prioritise issues associated with pollution of natural resources.

The EIA must be multi-faceted and more representative of the environmental impacts of the project, including indirect effects of biodiversity loss, if biodiversity assessments performed by expert personnel were made a part of it. In order to make the process more transparent and robust and to hold consultants accountable, the Union government must also devise an accreditation system for such professionals.

Human dimension

Communities living in close proximity are affected the most when a project is granted clearance. EIA 2020 reduces opportunities for public participation by reducing the time window for public response to 20 days from the existing 30 and excluding a number of projects from public hearings.

'Strategic considerations' is a vague new category that does not require hearings, something that can be misused to bypass the public process, compromising transparency and accountability. Further, complaints against compliance measures of the project can now only be reported by the developer themselves or the PCBs, keeping the public out of the purview.

There are additional barriers to accessibility, as EIA reports are often not available in local languages or are jargon. For meaningful participation, summaries of the EIA with major take-away and impacts on the local community must be made available to the communities who might be affected, with sufficient time at hand and in their local tongue. The Panchayat system and local organisations at grassroots levels can play a prominent role in facilitating these discussions. Inequalities exist even among communities that may be affected, with public hearings not representing all voices equally. Linking EIA public hearings to existing laws under Social Impact Assessment may improve transparency and inclusivity for all stakeholders.

Legal dimension

The new rules tip the power sharing in environment governance strongly towards the Union government, weakening the federal arrangement. The proposed changes give the Union government full powers to appoint the State Environmental Impact Assessment Authority. Laws such as the National Biodiversity Act, 2002, give a very prominent role and significant autonomy to local bodies such as Gram Sabhas in the protection and conservation of native biodiversity.

Such decentralisation has, thus, helped reduce instances of bio-piracy and promoted a harmonious and sustainable co-existence of biodiversity in human settlements. In the light of these positive outcomes, it only makes sense for allied environmental laws to follow a similar 'bottom-to-up' approach. With EIA set to play a key role in sustainable growth going forward, there is a need to elevate its legal importance from just an executive notification to a full-fledged parliamentary act on its own.

As an executive notification, the provisions get lesser protection and are liable to differing interpretations based on the whims and fancies of the administration at the ground level. As an act, it would bring greater stability and uniformity in the EIA process. A parliamentary committee must be constituted to examine the scope and powers under such an act.

India has not only pledged ambitious goals in environment and climate change on several international forums, but has also taken a lead role in renewable energy in the form of the International Solar Alliance. Diluted domestic regulations seem inconsistent with these ambitions and the overall aspiration to be a global leader in the fight against pressing contemporary challenges. We need to go beyond stating development comes at an environmental cost and innovate ways to develop with reduced negative impact on the environment. The economic slump post the novel coronavirus disease pandemic might seem a justifiable reason to disregard environmental rules, but the long-term impacts of deteriorating natural ecosystems can only worsen our economic woes.

CONCLUSION

Three decades since the establishment of the Indian environmental institution, the formal monitoring and enforcement capacity remains inadequate. However, environmental compliance has been improving despite this deficiency, aided by several factors, including informal monitoring by NGOs, judicial activism, and client demand, both domestic and foreign, for cleaner production and environmental certifications. While specific data on industrial compliance are not available, there is recorded improvement in environmental quality (air and water) in terms of some pollution parameters.

There is also a consistent increase in international certification of environmental management systems, which indicates that Indian firms are voluntarily upgrading their plants driven by economic

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reasons. This is true not only for large and medium firms, but for small firms, too. Contrary to the popular notion that small-scale units find adoption of cleaner processes unviable, there are cases in India where small units have voluntarily undertaken eco-friendly measures in a cost-effective manner. The example of Arjan Auto in the study highlights that the industry mind-set changes when firms are convinced that environmental planning, resource efficiency, and greater profits are complementary. Thus in spite of a lax enforcement system, firms are willing to move beyond compliance with domestic standards when it makes good business sense.

NOTES AND REFERENCES:

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4. The Green Rating Project is an effort to rate industrial units within specific sectors based on their environmental performance, and was initiated by a New Delhi-based NGO, Centre for Science and Environment. Paper and pulp and chlor alkali are among the 17 industries in the "highly polluting" category of the Central Pollution Control Board. For details see Shreekanth Gupta and Biswanath Goldar, "Do Stock Markets Penalize Environmentally Unfriendly Behavior: Evidence from India" *Ecological Economics* 52 (2005): 81–95.
5. M. E. Porter and C. van der Linde, "Green and Competitive: Ending the Stalemate," *Harvard Business Review* 73, no. 5 (September–October 1995): 120–134.
6. CPCB, Annual Report from 2004 to 2020, Central Pollution Control Board, New Delhi.
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8. The class I and class II cities in India generate about 29,129 MLD of sewage, while the installed sewage capacity is only 6,190 MLD. CPCD, Highlights 2005: Water Quality Assessment, Central Pollution Control Board, New Delhi (2006).
9. This is an estimate made by the CPCB, as there is no data available. The Centre for Science and Environment, however, contends that the small-scale industrial sector's wastewater discharge may be barely 5 percent of the total (instead of 40 percent), and of this half is contributed by the small engineering sector. www.cseindia.org/programme/industry/new_images/industry.pdf.
10. CPCB, Annual Report 2019-2020.
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13. Prior to 1990 India had no environmental standards for vehicles, and the new rules for cleaner vehicles on city roads largely followed from Supreme Court rulings in public interest litigations to reduce urban air pollution. The first petition was filed in 1985 by the Supreme Court advocate M. C. Mehta. See Aparna Sawhney, "Managing Pollution: PIL as Indirect Market-Based Tool," *Economic and Political Weekly* 38, no. 1 (2003): 32–37.
14. Under a government financial incentive scheme to encourage ISO 9000/ISO 14001 certification among small-scale units, a one-time reimbursement of certification fees is available. www.smallindustryindia.com/schemes/eediv.htm#waste.
15. New environmental policy of 2020 (draft).

16. For details see TERI, *Cleaner Is Cheaper: Case Studies of Corporate Environmental Excellence* (New Delhi: The Energy and Resources Institute, 2005).

17. Non-compliance in the industry has also been accepted on social grounds by the Indian regulators, most significant among them being the industry role of employment and income generation for the population at large.

18. The company, however, has other quality certifications, like ISO 9000 and automotivespecific ISO/TS16949. 19. The Eco profit or Ecological Project for Integrated Environmental Technology project is funded by the EU and Austria, and was introduced in Gurgaon in 2002. www.ecoprofit.org/ourmembers.htm.

20. Rajat Batra, director, Arjan Auto Pvt. Ltd., personal communication, October 2006.

21. The investment made by the firm under the Eco profit project yielded much greater savings for the firm in the medium and long terms. For some simple measures the investments were negligible but paybacks quick and high (Rajat Batra, director, Arjan Auto Pvt. Ltd., personal communication, October 2006)