

The Challenge of Economic Growth vs. Environmental Sustainability

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India currently generates over 110,000 million litres of wastewater a day. With India's population already well past the one billion mark and an industrial production annual growth rate of 7 per cent, waste generation is set to exponentially increase in the next 20 years. Proper treatment and discharge of industrial waste, and conflict resolution mechanisms for affected communities will become a growing need. We cannot continue to operate on a 'business-as-usual' model.

Seventy per cent of all available water in India is considered polluted. It has been estimated that approximately 73 million working days are lost due to water related diseases. The cost of environmental damage is estimated to be over 5 % of India's GDP, which is in excess of \$ 32 billion.

Given the finite supply of water, the increasing cost of supply, and the negative impacts of untreated or ineffectively treated water, pollution treatment and technologies for pollution treatment must make *business sense*. The link between environmental degradation and economic growth was perhaps first made formal with Simon Kuznets. The environmental Kuznets curve, derived from Simon Kuznets' work; stipulates that there is a link between inequality and environmental degradation. As incomes grow and wealth accumulates, pollution control and management will become more feasible. This theory makes the assumption that cost is a significant barrier for pollution control. It does however appear to be unclear about where the future for small and medium enterprises (SMEs), which number in excess of 3 million within India lies within this growth argument. In India SMEs are the backbone of industrialisation and environmental management strategies have to take into account this reality, rather than assuming it away.

One could argue that initiatives for pro-active pollution treatment, beyond the stipulations as set out by the Central and State Pollution Control Boards fall into the category of 'social responsibility'. However, we make the point that in fact all stakeholders will benefit from effective treatment. This is not a novel argument and many industries have already paved the way for innovative and cost-effective treatment technologies. The Ministry of Environment and Forests has also adopted the *Charter for Corporate Responsibility for Environmental Protection* in 2003. These steps should now be formalised with relevant regulatory and financial incentives that will be attractive to SMEs.

While we do argue that regulation and monitoring are central to finding effective and sustainable solutions to industrial wastewater treatment, we want to highlight the need for *practical* and deliverable regulation frameworks. Without this rent-seeking activities are likely to take place and act as dis-incentives for pro-active pollution mitigation. Regulation frameworks provide an equal starting for all players, from where behaviour can be incentivised.

Background

SMEs contribute to 40 % of India's economic growth. As such they occupy a position of central importance in India's economic portfolio. SMEs are credited with providing local employment opportunities, due to their lower capital requirements. They are also seen as promoters of indigenously available technologies. However SMEs are also responsible for generating over 40% of the country's hazardous waste.

Despite the extensive legal and policy structure for pollution control within India, the efficacy of effluent treatment plants (ETPs) and common effluent treatment plants (CETPs), in ensuring effectively treated effluent discharge has been disappointing.

CETPs were first introduced in the 1980s to realise economies of scale in pollution treatment. In theory this should act as an incentive for industries to treat their water since the financial burden of treatment is reduced. Other justifications for the CETP are; lack of space in SMEs, providing centralised technical support and minimising monitoring costs on the part of the regulator.

However the CETP in practice has not been as effective as had been first envisioned. With little zoning regulation, CETPs often treated pollution from units producing different goods. The treatment of intrinsically different contaminants has not always proven possible. Further, constant variation in the volume of influent limits the effectiveness of the CETP. In a study, conducted by the Central Pollution Control Board in 2002-3 of the 52 CETPs nationwide, it was shown that only 11 CETPs were receiving more than 90% of the designed inflow capacity. 41 CETPs were receiving between 25-65% of designed inflow capacity. As CETPs are not conventionally designed to handle large fluctuations in influent volume, this undercapacity is a problem for plant operation and functioning.

Table 1: Status of wastewater generation, collection and treatment in Class I cities and Class II towns (MLD)

		Wastewater Generated total (MLD)	Wastewater Treated	
			MLD	% of Collected
Class I	423	23826	6955	29
Class II	498	2428	89	3.7

Source: CPCB, 2005

One of the many problems with the existing regulation is that it operates on a 'one size fits all' basis. There is no flexible approach that differentiates between size and capacity of industries. There are over 3.1 million small to medium size enterprises (SMEs) in India compared to over 7500 large-scale industries. However, 'end-of-pipe' technologies, such as on-site pre-treatment facilities, require high capital investment, financial costs, and specialised technical skills. Lack of access to these inputs creates a disincentive framework for many SMEs. This situation provides opportunities for both rent-seeking and/or direct defaulting of pollution control parameters. The 2002-3 CPCB study concluded that even the *treated* water, being discharged from the CETPs did not meet the prescribed standards.

Case Study - the limitation of regulation

Before the initiation of Industrial Development Areas (IDA's) in the 1980's, industries were not aware of the damaging effects of untreated effluent and often discharged these into water bodies and agricultural lands. This action resulted in the large scale destruction of land as well as ground and surface water reserves. Peri-urban agriculture and livelihoods have subsequently been affected.

The industrial belt in Hyderabad and its adjoining areas are a perfect example of how faulty planning by the Government, and the compulsion of the industries to survive often in situations of cut throat competition, leads to the destruction of the environment. Hyderabad has six IDA's in and around it. These areas are mostly owned by private developers and lack the minimum infrastructure required for the proper disposal of industrial wastes. Patancheru, a small town near Hyderabad depicts a picture of what faulty environmental planning can lead to.

SMEs have very limited capital to spend on environmental measures, and are unable to treat the various effluents that are produced even to a primary level. Regulatory measures have proven to be inadequate and these industries discharge untreated effluents into the water bodies. According to government data, the extent of damaged land is more than 2000 acres. Chemicals leached into the groundwater enter the food chain through peri-urban agriculture. Although the exact cost of this polluted agriculture has not been estimated, NGOs and civil society groups argue that the impact is substantial. Inadequate regulation leaves industry with little incentive to comply with existing policy, and affected communities receive no remuneration for lands laid bare by industrial pollution. There is a stand-off between stakeholders.

Legal recourse is the most favoured route of community agitation, but even this is of little positive advantage. In Patancheru, community groups filed a Public Interest Litigation in 1991 to seek compensation for agricultural losses due to dumping of untreated wastewater. It took six years for a final decision to be given - a result that served neither party positively. The Supreme Court directed the Andhra Pradesh Government and the Pollution Control Board to take various measures based on task force recommendations. Tough regulatory measures were formulated to tackle the issue and standards were set for the discharge of effluents into water bodies.

In the last year more than 80 industries have been closed in Patancheru. Industries that are permitted to reopen are required to provide bank guarantees that are now in excess of 1 crore. This clearly illustrates the way in which ineffective pollution management has come at a cost to industries, communities, and the environment. Community groups were not greatly served by the decision and industries were investigated as well as being given tougher regulations. Communities and industry have been sparing partners for too long. Technology should be seen as a potential way to bring together previously hostile parties.

Ways Forward - Beyond the CETP to PPCP

Current practice in wastewater treatment has focused on 'end of pipe solutions', such as common effluent treatment plants. However, implementation of post-facto treatment has been difficult to achieve both for political and practical reasons. Whilst many initiatives

have focused on putting existing policy to work, few have investigated the reasons behind current failures and viable input alternatives.

It is essential that initiatives towards clean development have multi stakeholder representation including: civil society organisations, industrial membership bodies as well as government regulators and national policymakers, at all stages. The model of Public Private Community partnerships provides a new way of thinking about the management of an old problem. Such stakeholder inclusion will provide for sustainable solutions where all parties share the responsibility for clean water, responsible use and effective management.

Knowledge Partnerships - Svaraj held a multi-stakeholder conference in Bangalore and Hyderabad to discuss pollution treatment alternatives. Present were members of regulatory bodies, private industries, and international resource persons. Discussions focused on the need for in-process treatment technologies. Such technology would treat wastewater at every stage of production. Standardisation of effluent is easier to achieve. The final effluent, sent to the CETP would therefore be much easier to treat and altogether less harmful. This can also result in a more efficient use of raw materials, energy and water.

Relevant and adequate fiscal Incentives - In our discussions with many of the individual industries and industry bodies, it is clear that there is a frustration with the current incentives in place for 'cleaner production', 'green business' etc. Most SMEs also cited the immediate need for basic site upgradation before engaging in debates on technology assisted pollution management.

Conclusion

Water is a crucial component in industrial production processes. Its use and treatment can no longer be seen as an externality. Costs have to be internalised as part of the final product prices. This is being done in developed countries and indeed has served as positive public relations for many industries that have gone 'green'. Tax incentives and subsidies will also be required for industries that do take up the challenge of cleaner production and wastewater treatment, in order for industries to actually institutionalise their actions and best practices, they have to take on some of the financial burden themselves. Many NGOs and international development bodies have been working on technology initiatives for industrial wastewater treatment. This is an important and positive step. However solutions will only be viable in the long-term if the recipient industry is required to put forward a beneficiary contribution. Water treatment and cleaner production can no longer be seen as an act of good will. It is good economics.