Environmental management at Indian subsidiaries of OECD based TNCs; Islands of environmental excellence?

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Report as part of UNCTAD /CBS Project:
Cross Border Environmental Management
in Transnational Corporations

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Background to the paper

The globalization of economic activity in general, and the growing role of transnational corporations (TNCs) in particular, has increasingly directed attention toward the environmental consequences of these developments. Increasingly, TNC activity in developing countries has become an issue for various normative initiatives at the international level, in the OECD and in the WTO. However, there remains a pertinent need to gain a better understanding of the environmental implications of TNC activity in developing countries. On this background, the United Nations Conference on Trade and Development (UNCTAD) and Department of Intercultural Communication and Management, Copenhagen Business School (DICM/CBS) in 1997 received a grant from the Danish International Development Agency (DANIDA) to conduct a study of environmental practices in TNCs. The project is called: «Cross border Environmental Management in Transnational Corporations». The project examines environmental aspects of foreign direct investment (FDI) in less developed countries by conducting case studies on environmental practices in Danish and German TNCs with operations in China, India and Malaysia. The project will produce a series of research reports on cross border environmental management seen from home country, host country as well as corporate perspectives. The reports will serve as input to a conference on Cross Border Environmental Management hosted by UNCTAD.

Abstract

The aim of this paper is to seek further understanding of the environmental role of transnational corporations (TNCs) in India. The focus is set on foreign direct investment (FDI) as FDI constitutes the mere existence of TNCs and enable the transfer of not only finance, but also technological, organizational, managerial and human resources to strengthen local practices of affiliated units in India. The overall question of the paper is to discuss to what extent and how local environmental practices at affiliated units are influenced by TNC headquarters. The study finds significant evidence that environmental management at TNC affiliated units in India are strongly influenced by their parent's polices and standards. However, it is also found that there often are significant deviations from intentions and policy commitments stated at corporate headquarters and the actual implementation at the affiliate level in India. Thus, the main conclusion is that institutional factors related to the intra-firm dynamics are significant, but that local contextual factors still counts in regard to the content and nature of environmental management at TNC affiliates in India and that local practice is not necessarily a replicate of HQ practices.

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Islands of environmental excellence?

By Audun Ruud[1][2]

1. Introduction

The aim of this paper is to seek further understanding of the environmental role of transnational corporations (TNCs) in developing host countries. The focus is set on foreign direct investment (FDI) as FDI constitutes the mere existence of TNCs and enable the transfer of not only finance, but also technological, organizational, managerial and human resources to strengthen local practices of affiliated units in India.

The overall question of the paper is to discuss to what extent and how local environmental practices at affiliated units are influenced by TNC headquarters.

The linkage between FDI and the environment is particularly salient in an Indian context: As a direct consequence of the Bhopal tragedy in 1984, TNCs in general but particularly chemical TNCs, became more scrutinized both by the general public and regulatory authorities. Many TNC involved in chemical as well as other pollution-intensive manufacturing, have since then felt a "Bhopal syndrome" both in terms of strengthened regulatory control and informal "regulation" (Shrivastava 1987). Popular mobilization against numerous TNC projects was triggered (Lepkowski 1987). Public negative attitudes were further strengthened by evidence indicating a lack of consistency and stringency in the implementation and enforcement of environmental regulation at particular plant sites (Murti 1997).

In spite of growing regulatory strength in recent years, it is reasonable to expect that the Indian regulatory framework still provides an incentive to environmental exploitation by TNCs. What the paper looks at is current management challenges and dilemmas for TNCs operating pollution-intensive

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[1] Center for Development and the Environment, University of Oslo

[2] Substantial inputs have been provided by Michael W. Hansen, Copenhagen Business School.

manufacturing units in India. As documented by Murti (1997), environmental issues are increasingly included on the Indian corporate agenda. However, much focus has been made on technological and mechanical solutions regardless of how these are handled. The way these measures should be managed economically and environmentally efficient has not equally been dealt with (Murti 1997). Thus, there is a need to strengthen the focus on environmental management, particular as research suggests an extensive neglect or mismanagement of technical measures formally initiated. Many agencies approach environmental problems solely from a natural scientific and engineering based angle, proposing a variety of hard-ware, physical technology options in terms of pollution control equipment.[3] However, it has increasingly been acknowledged that environmental protective measures in terms of managerial solutions (software), are equally important, assuming that the technology (hardware), is in place (World Bank 1998). The importance of focusing more explicitly on environmental management is also verified by Kuik et al (1997) comparing environmental policy approaches in India and the Netherlands.

The paper raises the following three research questions:

1. How are TNCs promoting improved environmental management performance at affiliated units in India?

The existing literature on TNC environmental performance indicates that there is a significant variety of environmental strategies pursued by TNCs (Hansen 1998). These strategies are partly influenced by the TNCs' need for local adaptation of technologies, processes and products, partly their need for global co-ordination and standardization. Thus, the paper proceeds by asking:

2. To what extent and why are environmental practices at Indian affiliates a function of headquarters environmental policy and practices?

The HQ involvement in affiliate environmental management we will label 'cross border environmental management'. The existing literature suggests that TNCs may influence local plants to promote practices beyond formal regulatory requirements, especially in countries having embryonic regulatory structures (Brown 1993, Himmelberger 1994, Hansen and Ruud 1995).

The question of cross border environmental management is a special case of the wider question of TNCs' growing need to co-ordinate and integrate their global assets. Inflows of FDI are strengthening transnational ties and interdependencies between traditionally separated national markets. Some firms remain domestic, servicing global markets through exports, but others take advantage of new investment opportunities like those offered in India. Motivations driving investment decisions vary, even within the same TNC.

[3] As illustrated with the traditional work of UNEP, UNIDO or the World Bank

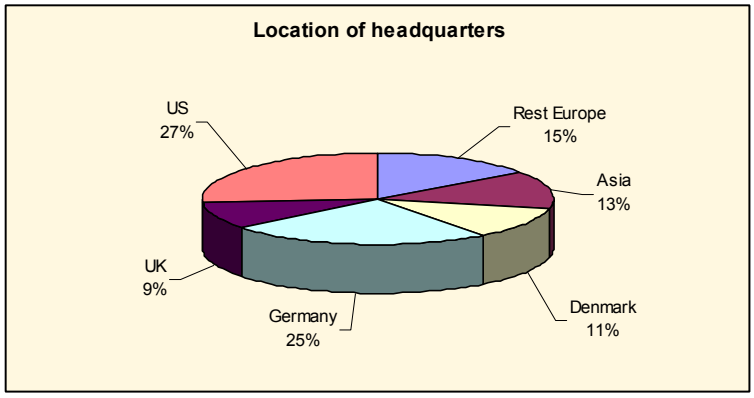
Some are primarily concerned with costs and production inputs while others are more concerned with market opportunities. Beyond specific local factors, an increasing number of TNCs are further approaching new and older FDI projects with an objective of strengthening co-ordination and collaboration of global corporate activities (UNCTAD 1993a). Cross border management concerns are put more centrally on the corporate agenda. The location-specific advantages initially motivating the FDI decisions are still prevailing, but these concerns are increasingly supplemented with the needs of balancing global policy co-ordination and local commercial adaptation. The major objective of this study is to extend this into the area of environmental management. The central question is thus to what extent and how are environmental practices at affiliated TNC plants in India influenced by current needs of balancing global policy co-ordination and local commercial adaptation?

If TNCs are in fact setting new environmental standards beyond local requirements and integrating their environmental management globally, it is relevant to ask whether this will have any wider implication for environmental protection in India. The implications can be related to other economic agents within the value chain, to public perception in general, as well as to regulatory authorities. Thus, the paper summarizes the analysis by asking:

3. What are the potential wider implications of TNC environmental management practices for environmental protection in India?

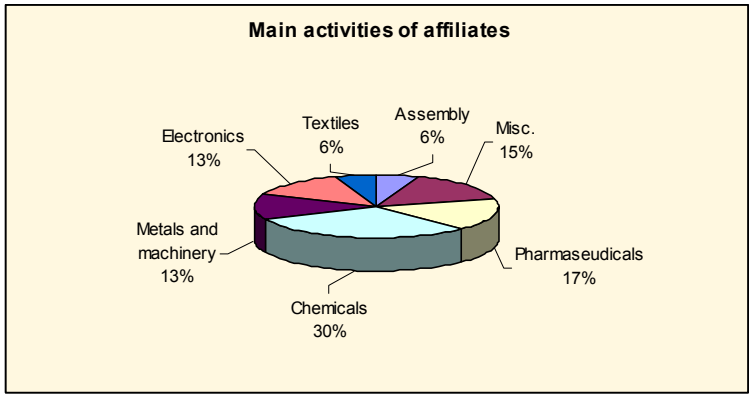
1.1 The research set up

Surveys on related issues are increasingly available (UNCTAD 1993b, Hansen 1998), but very few have actually conducted detailed case studies of the environmental management policies and procedures of TNC affiliated units in developing countries. In order to obtain a better understanding of environmental management at affiliates in India this paper draws on two types of information, namely responses to a questionnaire (see Hansen, 1999 for a print) and detailed case studies. Through benchmarking of a total of 53 TNCs and affiliated Indian units, valuable information is collected and extensively used as a reference throughout this report. In addition, the findings included in this paper draws from specific case studies of a number of those 53 benchmarked TNCs.

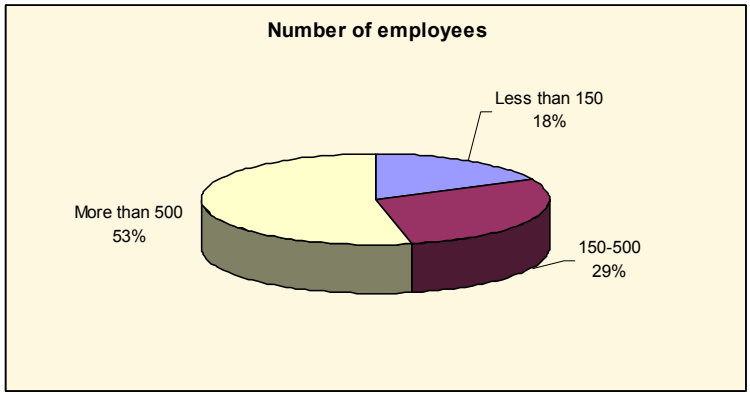


The research design has aimed at analyzing environmental practices of European TNCs, in particular Danish and German TNCs. As a result, 60% of the respondents are from Europe. 27% of the benchmarked TNCs have the corporate headquarters (HQ) located in the US. The rest is distributed between Japan (4%) and rest of Asia (9%).

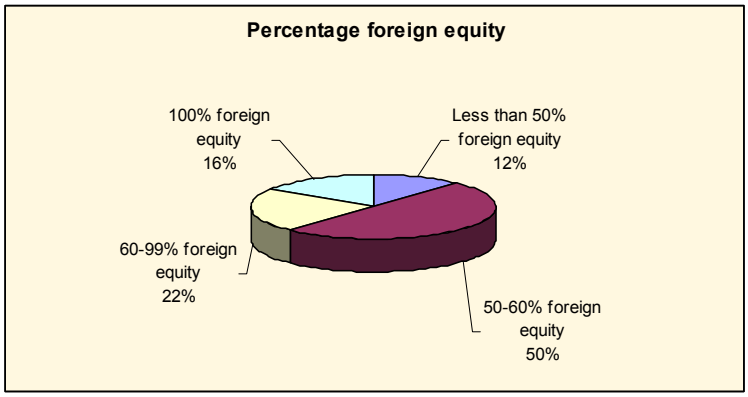
The research design focuses on chemical manufacturers as this sector in general represent significant pollutants. Thus, the sample includes 47% chemical and pharmaceutical TNCs. In addition, 13% are firms involved in metals and machinery production, and 13% are involved within the electronics industry. All the TNCs studied are confronted with significant environmental challenges at affiliated Indian units.



In terms of size, the majority or 53% of the TNCs studied are large firms with more than 500 employees. Only 18 per cent of the benchmarked TNCs have less than 250 employees.



Indian authorities have historically imposed strict regulatory requirements on TNC ownership and foreign control in general. Nevertheless only 12 per cent of the benchmarked TNCs do currently hold minority equity shares in the affiliated Indian units. This is directly related to radical changes in economic policies, which took place in the beginning of the 1990s. Due to severe balance of



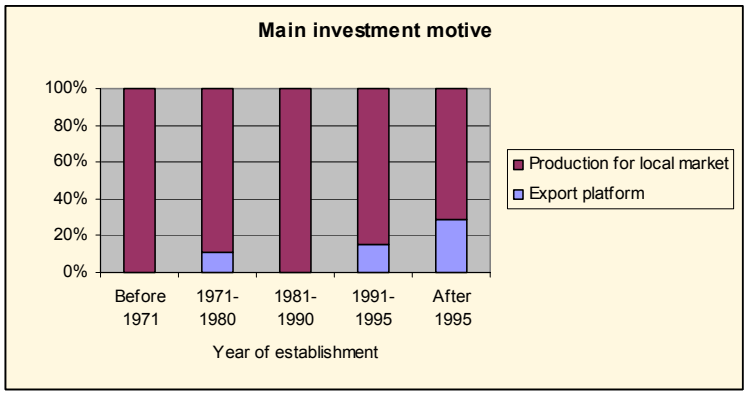
payment problem combined with increasing foreign debt commitments, in 1991 a more liberal investment regime was launched. The TNCs responded quickly, not only by increasing FDI inflows to India, but also by increasing ownership shares in older projects. Currently, half of the TNCs have a slight majority share between 50 - 60 percent. But still only 22 per cent have equity shares between 60 - 99 per cent, and only 16 per cent have wholly owned subsidiaries.

Examples of motives behind investment in India

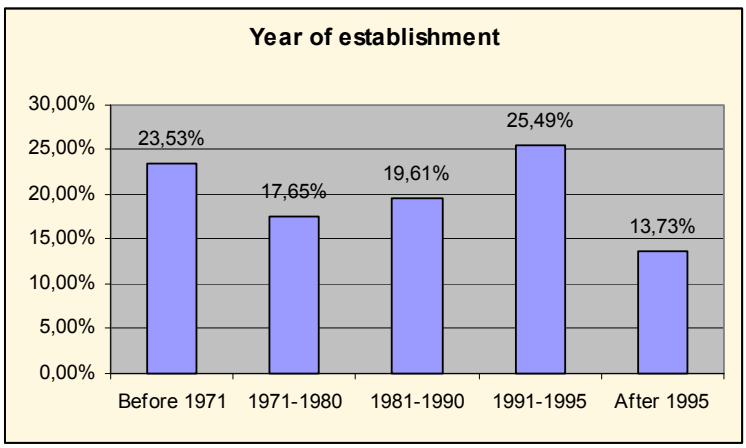
Three examples illustrate the market seeking and effieciency seeking motivation of TNCs locating FDI projects in India.

Aluminum Company of Canada (Alcan) and Norsk Hydro wanted to secure access to raw materials necessary to production aluminium through FDI, even if this is produced in Canada or Norway. The same TNCs are also strengthening the control of local down-stream fabrication of aluminium. IBM left India as a reaction to the economic nationalism prevailing by the end of the 1970s (Martinussen 1988). In response to the new FDI regime, IBM has recently returned to take advantage of India's abundant supply of skilled and cheap computer engineers, but IBM is also making efforts of conquering larger domestic market shares for IBM software products. A third example is found within the transportation sector. All the largest automobile manufacturers like General Motors, Ford and Toyota have recently inaugurated green-field FDI projects for automobile assembling in close collaboration with local Indian venture partners. Labour costs are instrumental, but as these cars are marketed in India, local market opportunities seem to be as an important motive as cheaper production inputs.

Quite surprisingly our findings show that none of the sample firms did locate activity in India primarily to get access to raw materials, and only 10 per cent of the TNCs reported that the primary investment motive was to use India as an export platform, although export oriented investments have risen sharply in recent years. The dominant motive driving the benchmarked TNCs to locate FDI projects in India, is the perceived commercial opportunities of potential and actual Indian markets.

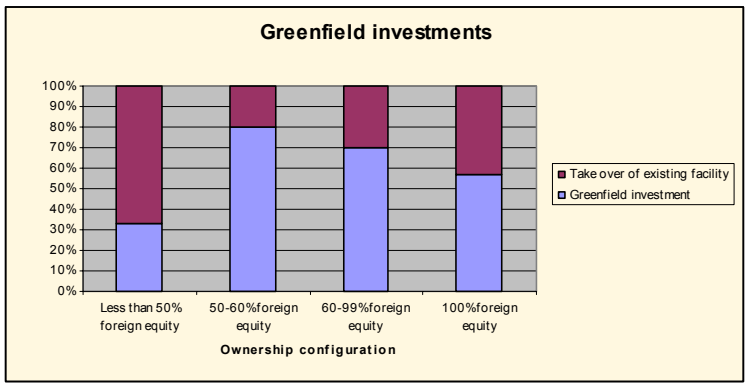


As many as one-fourth of the benchmarked TNCs own Indian factories that are more than 25 years old, and app. 60 per cent of the factories were established



before 1991. As documented by Jha (1999) a New Economic Policy was introduced in 1991, triggering increased inflows of FDI. This is also reflected in the sample as one-forth of the TNCs studied did establish Indian affiliates between 1991 and 1995.

2/3s of the projects are greenfield projects, especially projects where the foreign investor is a minority shareholder.



The survey focuses on FDI projects in Delhi and particularly Maharashtra, as these states remain the major recipients of TNC transfers as materialized through new or already existing FDI projects. Between August 1991 to January 1997 a total of 458 approvals with a value representing 17.1 per cent of total approved FDI, were located in Delhi. The second largest recipient measured in share of the FDI value is Maharashtra, receiving 12.5 per cent, but the total number of FDI projects is significantly higher than in Delhi, reflecting a relatively smaller size of each project or factory. The state of Mahararashtra is in fact the largest receiver of manufacturing FDI projects in India. A significant number of FDI projects are also located in Karnataka (computer industry like IBM), Tamil Nadu (automobiles like Ford) and Gujarat (chemicals). Concerning the latter, almost all the projects located in Gujarat are co-ordinated from national headquarters in Mumbai, the capital of Maharashtra and most of these TNCs still operates older chemical plants in Maharashtra.

State-wise distribution of approved FDI

August 1991 to January 1997

State	No. of approvals	Share in FDI value
Delhi	458	17,08%
Maharashtra	832	12,49%
Karnataka	434	5,41%
Tamil Nadu	543	5,39%
Madhya Prad.	110	5,19%
West Bengal	179	5,17%
Orissa	49	3,73%
Gujarat	251	3,71%

Source: SIA newsletter

1.2 Outline for report

The analysis of the state of environmental management in TNCs in India is presented in this report as follows. Initially it is asked what kind of environmental hazards are potentially relevant to the TNC affiliates included in

the study. This information is required in order to understand what kind of measures that actually are taken at local plants. The paper proceeds by documenting the degree of formalized transnational environmental control as well as environmental relations to local external stakeholders. With explicit reference to the current state of environmental management, various determinants of TNC environmental management in India are discussed. Three broad categories of determinants are identified; pressures and incentives of the Indian regulatory context, pressures and incentives of the market, and pressures and incentives of the corporate network. In the concluding chapter, major findings are summarized and policy implications in regard to improving TNCs' environmental conduct in India are drawn.

2. The state of environmental management in TNCs operating in India

In the following section we will present what kind of environmental hazards are potentially relevant to the TNC affiliates included in this study, and outline the managerial and technological solutions implemented.

2.1 What kind of environmental hazards are potentially relevant at the TNC affiliates

2.1.1 Potential pollution problems

The sample studied varies in terms of potential pollution intensity, but a significant majority of the TNCs are involved in manufacturing or handling of hazardous chemical compounds, including inorganic chlorine/alkali, acids and inorganic pigments representing significant environmental hazards if released untreated from the plants.

Large quantities of water are used by most of the TNCs included in our sample. This is applied in processing, cooling and washing procedures. During processing, water often becomes contaminated with chemicals or by-products. Pollutants, which may present a hazard, if released into waterways and underground aquifers, include toxic pollutants, carcinogenic compounds, suspended solids, and substances with high biochemical oxygen demand (BOD) and chemical oxygen demand (COD). Groundwater and surface water resources can be negatively impacted by rainwater from tank farms, product discharge and processing areas, pipe tracks, flushing and cleaning water and accidental release of raw materials, intermediate- and finished chemical and other hazardous products.

Generally, depending on the process used, air pollutants include particulate matter and a great number of gaseous compounds including sulfur oxides, carbon oxides and nitrogen oxides from boiler fuels and process furnaces,

ammonia, nitrogen compounds and chlorinated compounds. These emissions result from several sources including process equipment, storage facilities, pumps, valves, vents and leaking seals.

In the case of the sample TNCs, solid wastes generated by these include residuals from raw materials, waste polymers, sludge from boiler feed, tank cleaning or pollution control equipment, as well as ash from coal boiler operations. In addition, waste material may be contaminated with chemical substances from the processes.

2.2 The environmental protective measures taken at local plants

2.2.1 Technological measures

Chemical manufacturing is primarily associated with liquid hazardous emission, but as illustrated by the Bhopal tragedy there are significant hazards related to atmospheric emissions. Effluent control installed by the sample of TNCs include gas scrubbing, membrane separation, cyclones, electrostatic precipitators, bag-house filters, catalytic reduction or oxidation, incineration and absorption systems. Equally the TNCs studied have installed measures to control wastewater effluents. These measures include tanks that are neutralizing potential hazards. Further efforts are made to mitigate the hazards through evaporation, aeration, stripping, flotation, filtration, oil separation, carbon absorption, ion exchange, reverse osmosis, biological treatment and land application for process wastewater. As in the case of atmospheric emission, it did not appear that the TNCs studied were avoiding the technical installation necessary to mitigate hazardous waste water effluents.

A greenfield project within a brownfield industrial area

A UK based TNC has a 51% equity holding in an Indian subsidiary. The company is involved in the manufacture of industrial explosives, paints, pharmaceuticals, polyurethanes, catalysts, rubber chemicals and surfactants. The TNC has been involved in trading activities since the 1930s, and made the first FDI in the beginning of the 1950s. The majority of its chemical and pharmaceutical factories are old, and merely incremental environmental changes are made. However, in 1998 a brand new paints factory was inaugurated in Thane, located within an industrial area already hosting a surfactants and a polyurethanes factory set up in the 1970s and 1980s respectively. At these factories environmental control were conducted through traditional end-of-pipe pollution control measures, and the relatively environmental performance was modified in an incremental way as obsolete technologies were replaced and modernised.

Adjacent to these old chemical plants, but physically separated with fences, a brand new paints factory was inaugurated in 1998 in which all liquid effluents allegedly are eliminated. With the use of state-of-the-art technology originally developed in the UK, but tested and modified at a Malaysian affiliated unit, the TNC initiated manufacturing of solvent free paint for the house-hold segment, the production of which took place This was done without discharging any liquid hazards. Consequently, the need for end-of-pipe pollution control measures were eliminated as all industrial wastes are recycled and reused in the manufacture of solvent-free paint. The manufacturing cycle is closed, discharges of hazardous waste are eliminated and raw materials are saved.

There are very few similar examples found within India's paints industry, not even among the other paints plant of this UK based TNC. Zero discharge from production remains a radical exception not only in terms of hard-ware technological solutions, but also with respect to soft-ware, i.e. managerial solutions.

Although only few of the TNCs studied had imported state-of-art environmental control equipment, various state-of-the-art procedures were observed as processing technologies were modified. In some cases imports were made to complement locally supplied equipment, for instance to combat more effectively the challenge of hazardous waste management. Within the sample there are only two cases of incineration plants installed. One of these incinerators was built in 1970s, but later retrofitted and up-graded with more modern technology. Currently the incinerator is capable of burning wastes at 800º to 1200º Celsius. According to plant Environmental Manager of this German TNC, all organic chemical substances are eliminated. Beyond the elimination of hazardous organic chemical compounds, energy generated in the incinerator is recycled and used in adjacent manufacturing processes. In other cases processing water was recycled and reused after treatment. This happened as a direct outcome of initial efforts strengthening environmental control, creating additional benefits as processing technologies are modified.

But there are few examples of production technologies entirely being replaced to enhance environmental improvements. In general, however, TNCs remain reluctant to discontinue units that provide positive contributions to corporate profits. According to the environmental manager of this TNC, there are a significantly more challenging task of promoting environmental excellence in older units compared to new ones. Arguments are raised of substituting a policy of retrofitting with installation of state-of-the-art processing technology, but there are still relatively few of the TNCs, which have actually discontinued older more inefficient units. Retrofitting and up grading appears to be preferred rather than total replacement. A large proportion of the pollution abatement technologies consequently remains old although modified.

As exemplified with waste management and water recycling, manufacturing systems and pollution control equipment was typically retrofitted and modernized. The consequence is that incremental rather than radical technological shifts are promoted at TNC entities in India. But as illustrated in the textbox describing the zero-discharge plant, there are exceptions involving radical changes:

In some cases it was reported that environmental hazards were reduced and even eliminated while economic and production benefits simultaneously were achieved. Thus, as a consequence of environmental investments, some TNCs created higher production volume and/or achieved lower operating costs. In one case the representative of a German TNC stated that more than 20 per cent savings

Operation of equipment essential

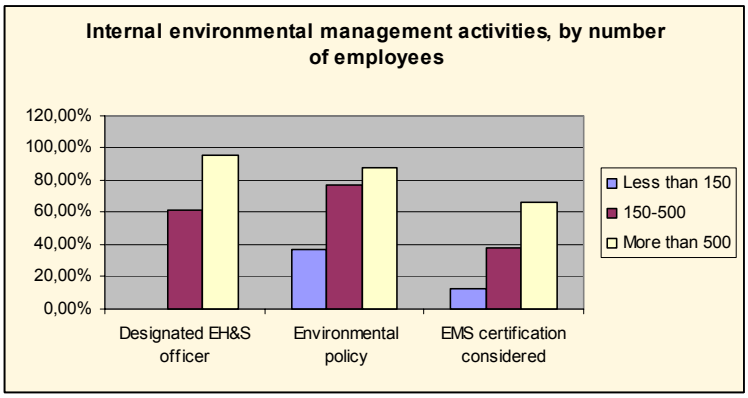
Despite installation of proper and well-designed pollution control equipment, it is not always operated in a consistent manner. During some of the plant visits, a striking discrepancy was observed between efforts of minimising occupational hazards and hazardous emissions. At a chemical plant involving a US. petrochemical TNC, all member of the project team were equipped with proper goggles and helmets. Labourers working at construction sites, close to hazardous areas inside the plant, did not wear equivalent safety equipment measures. This was explained as follows; "we have provided equipment, but they do not want to use

in raw materials consumption and 50 per cent reduction in water consumption were the direct results of modifying processing technologies.

Many of the TNCs studied have constructed particular end-of-pipe treatment of industrial effluents. Some of the TNCs have also set up treatment plants allowing reuse through re-cycling of processing water. Biological, chemical or physical treatment of industrial wastewater are treatment methods used among the sample of TNCs studied, but only a few have provided technologies facilitating re-cycling of processing water. Typically the need for end-of-pipe treatment is not eliminated in the examined plants. Consequently traditional pollution control of industrial effluents continue to be a major concern for most of those TNCs involved in pollution-intensive, hazardous manufacturing. Thus, it can be argued that in most of the cases studied, environmental management measures remain significantly important.

2.2.2 Environmental management measures

Thus, protective measures are taken at most examined facilities, but what are the implications for environmental management? Procedures are institutionalized to train in-house personnel to comprehend and manage pollution control technologies installed. This include air and water quality monitoring requirements, instructions for operators to prevent malodorous emissions, and directives to notify proper authorities in the event of accidental release of pollutants.



A designated environmental (safety and health) officer were in 74% of the affiliates appointed to be in charge of environmental emission controls, and formal operating procedures are established. A variety of monitoring and measuring exercises were continuously or periodically implemented to control environmental performance. TNCs are increasingly publicizing policy statements indicating a commitment to promote environmental protection and natural resource conservation. Annual reports also state that specific environmental measures are implemented in full accordance with requirements of regulatory authorities and expectation of public. This is at least the case at home country operations. When it comes to India, an increasing number of the TNCs have developed local environmental policies, specifically designed for Indian operations. Of the 53 TNCs included, as many as 78 per cent did respond positively to whether a local environmental policy was developed.

Environmental policy statements

"Company x" manufacturer of synthetic resins, construction chemicals, sealants, pigmented products, coatings and electrical insulation materials is wholly committed to environmental protection at identified production facilities.

"Company y "...caters to the need of Indian Petroleum Industry for speciality and performance chemicals at globally competitive price, quality and customer service standard in eco-friendly manner.

"Company z" aim to be the largest integrated chemical and pharmaceutical company in the world. And to achieve this the company believes that commitment to conserving natural resources, operating facilities safely and minimising the environmental impact while conducting its activities are essential.

While most benchmark TNCs have established environmental policies, it is also the impression that there is still some work to be done when in comes to public statements of corporate commitments with respect to environmental protection. According to the Managing Director (MD) of one TNC; "we have been complying with the same policy objectives for many years, but it was done in an informal manner". During negotiations preparing a sale from a German to a US TNC in 1996, a process of formalizing environmental procedures was triggered. During 1997 explicit efforts were made to write down both the environmental policy as well as objectives to achieve better and more predictable environmental compliance. Interestingly, the MD did not refer to these efforts as instrumental in improving local environmental performance, but rather these were carried out to accommodate benchmarking and control efforts by the new US owner.

Examples of environmental objectives set by TNCs studied

- reduce waste (either generally or with a specified percentage)
- reduce resources depletion - often generally stated
- minimise environmental pollution (either generally, with a specific percentage - even focusing on a variety of polluting sources
- design products for minimal environmental impact in production, use and disposal - often generally, but some TNCs did identify specific "green" products
- control environmental impact of new developments
- promote environmental awareness among the employees, contractors, users and transporters (inward and outward)

Areas where standards were stipulated

1.Commitment; formulation of environmental responsibilities
2. Management & resources: how it is implemented
3. Communication and Consultations; on enforcement
4. Training
5. Materials hazards
6. Acquisitions and divestment
7. new plants, equipment and process design
8. modification and changes
9. Environmental assurance
10. systems of work
11. emergency plans
12. contractors
13. environmental impact assessment
14. resource conservation
15. waste management
16. soil and groundwater protection
17. product stewardship
18. environmental performance and reporting
19. environmental auditing

The environmental policy statements are necessary but not sufficient measures to implement environmental objectives. More specific management procedures must

be developed, and the specific responsibility must be given to particular officers. The study confirms that almost all those TNCs having environmental policies in place also have designated environmental officers in charge. The total of 40 TNCs having a designated EH&S officer indicates that some form of institutionalization of environmental management is achieved.

As a further elaboration of environmental objectives some TNCs formulate more specific environmental objectives. A total of 19 areas where the TNCs set standards were identified All these initiatives reflect a pattern of co-ordination, which can be labeled an environmental management system, consisting of policy, standards, procedures, control, communication and reporting systems assuring that actual practice is promoted in accordance with policy and standards.

The survey examined to what extend the environmental management system had been verified by a certification agency. Within the benchmarked sample only 17 percent of the total of 53 TNCs had achieved environmental management system certification in accordance with the ISO 14000 series. According to statements, 30% more of the TNCs studied consider to do so, but available documentation is still limited.

2.3 The degree of formalized cross border environmental control from HQ

Referring to the issue-areas presented in the textbox above, there are significant differences in the actual profile and explicit consciousness among different TNCs. While some TNCs are providing clear and specified information on related issues of concerns, others are less explicit. Among those having

Bhopal and cross border environmental management

In the beginning of the 1980s Union Carbide had a growing reputation for its environmental management programmes, and it had made safety a priority in corporate policies (Piasecki 1995). External observers described Union Carbide as "possibly the best corporate citizen among multinationals studied",[1] but on December 3, 1984 one of the worst industrial disasters in history occurred in Bhopal the capital of Madhya Pradesh situated in the center of India (Shrivastava 1987). During the early hours of the morning a poisonous gas leaked and killed at least 3,500 and injured over 200,000 others. As proposed by Piasecki (1995), Bhopal can be perceived as the environmental equivalent of Pearl Habor, as a violent wake-up call for alternative action. Public became significantly more concerned as a "chemophobia" was triggered (Gladwin 1987). However, corporate initiatives were also taken to strengthen environmental procedures and practices world-wide (Shrivastava 1987). Policies and commitments were issued, standards were made more stringent and the environmental control and co-ordination of global activities were strengthened. The outcome was more formalised cross border environmental management systems developed by corporate headquarters of not only Union Carbide, but by the bulk of transnational chemical as well as other TNCs involved in hazardous manufacturing activities world-wide.

quite advanced environmental management systems implemented, the design was often developed at corporate HQ. What this means in practice is that an understanding of local environmental management procedures is not possible

without a more proper understanding of the modalities and content of the relationship between corporate headquarters and other affiliated units. This relationship is termed cross border environmental management.

Examining the degree of formalized cross border environmental control from HQ the following factors were found to be of importance; the character of environmental policies, environmental standards and environmental guidelines. Furthermore, the degree of environmental enforcement and the use of particular management tools, where found instrumental in influencing the current operations of TNC entities in India. To elaborate further on cross border environmental management, this section is organized accordingly. The section will conclude by asking whether cross border environmental management can be more than control, and whether it can function as an incentive and motivating factor for further improvement at local affiliated plants.

2.3.1 Environmental policies, environmental standards, environmental guidelines?

"We (HQ) are setting the targets, you are supposed to follow them!"[4]

Environmental protection is a new item on the Indian corporate agenda, and we did not find any of the affiliated units with environmental policies dating back earlier than 1991. While all the companies in one way or another have referred to environmental issues, a strong correlation and even replication of corporate statements originally developed at corporate headquarters was observed. According to the benchmarking, as many as 38 affiliates had environmental policies, which are formulated, by TNC headquarters. This is equivalent to 83 percent of all affiliates having an environmental policy. In line with this, in several of the TNCs more carefully studied, there were not made any attempts to make these commitments more specific for Indian conditions. Statements originally designed for US. or European operations, where transferred to local operations

The local environmental policy is often a copy of headquarters' policy

Local environmental policy of a TNC operating in India:

The company's objectives is at all times, to conduct its operations safely, protecting the health of employees and all persons who may be affected and with due regard to the environment

The TNC's environmental policy issued at HQ:

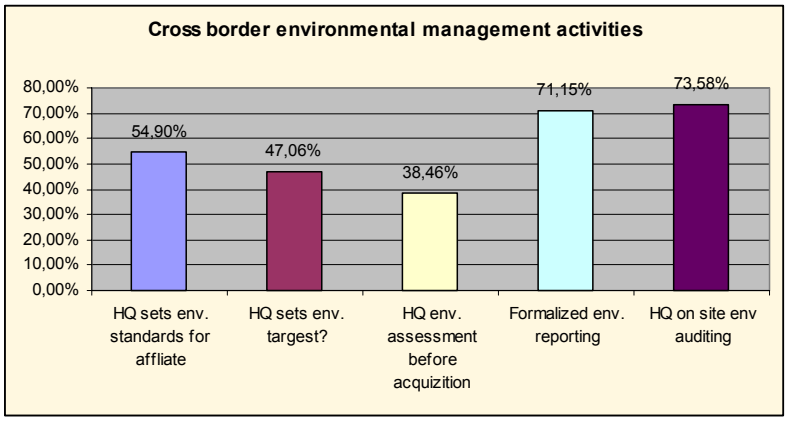
The "TNC" will ensure that all its activities world-wide are conducted safely, the health of its employees, its customers and the public will be protected; environmental performance will meet contemporary requirements and that its operations are run in a manner acceptable to the local communities.

[4] Stated by the chief environmental officer of one of the TNCs benchmarked during a training seminar for the TNCs environmental managers at Indian units in June 1996

even in situations where the characteristics of local operations differed significantly from home country operations.

The similarity of the two environmental policy statements in the box is not a coincidence. First of all, these statement will always be rather general. Besides, in several of the companies, the environmental policies of affiliated units were part of the global environmental strategy of corporate headquarters in Europe as well as the US. Some of the companies have an explicit focus on environmental issues, other related environmental concerns to energy issues, while the majority combined environmental issues with concerns for health and safety/occupational hazards.

Around 50 percent of the affiliates reports that HQ sets specific environmental standards. According to specified guidelines developed by one of the sample TNCs, all units shall have arrangements for proper management and disposal of wastes and for the maintenance of records of all solid, liquid and gaseous wastes. To comply with this requirement, more specific but only recommended guidelines are developed. If the unit by other means comply with the standards, this is acceptable. But in case of local deviations below mandatory corporate standards, guidelines become compulsory. Information obtained from local TNC staff indicate that these guidelines in practical terms, were considered and applied as mandatory requirements set by corporate headquarters. As one local TNC representative told us; " we were told to comply with these corporate environmental emission standards". Another mandatory TNC standard set by HQ is related to environmental impact assessments (EIA). At one particular plant, specific environmental assessments must take into account, but not be limited to, solid, liquid and gaseous wastes produced. Measures for their



Standards for waste management at company x

The general principle for all waste streams from a particular plant is that these streams should be identified, characterised and qualified. Further it is a principle that the waste streams should be disposed of in accordance with specific technical guidelines, including particular concepts for effluent treatment. Finally it is stated as a principle that the impact of the environment of waste disposal operations, should be kept to a practicable minimum, by use of waste minimisation and by appropriate choice of disposals technique, contractor disposals route and site. It is interesting to observe that the perception of these guidelines as mandatory was only limited to in-house, plant specific waste management procedures. In case of external contractors procedures were less stringent and not subject to the same control.

disposal as specified in the waste management guideline, are also included. Further it must also take into account any land contamination issues and/or any unplanned releases of materials or energy. In general the guidelines make it mandatory for any affiliated manufacturing activities to assess any environmental impact caused by this activity.

2.3.2 Cross border environmental controls - using what kind of management tools?

Having obtained a more profound understanding of policies and standards formulated by corporate headquarters, it will be examined how HQ ensures that these mandatory policy standards and procedures are followed by all affiliated units. This is done both by environmental reporting, more formal environmental auditing as well as the allocation of necessary resources not currently available at the affiliated TNC unit in question.

Among the TNCs studied the explicit enforcement of environmental standards varies, but a large majority of the benchmarked TNCs do have institutionalized procedures of environmental management control by corporate headquarters on current Indian activities. 73 per cent out of 53 TNCs have systems where corporate headquarters perform environmental auditing of Indian affiliated units on a regular basis. And a similar number of the TNCs benchmarked have formalized environmental reporting systems between headquarters and affiliates. The cross border control efforts vary depending on the issues in question.

According to specific TNC standards developed by a UK based TNC, formal auditing procedures are defined and implemented to ensure that environmental management systems adopted locally actually meet specific environmental standards of HQ. Observed deficiencies identified during audits shall be formally recorded, their implications assessed and corrective actions prioritized and acted upon. As illustrated in the textbox, specific guidelines for the audit of the management system has been developed.

When discussing auditing procedures, a frequently cited term of reference is "recognized good practice". In most cases this means national standards. In such cases the environmental auditing only ensures that local units are complying with local regulatory requirements. Others were referring to international standards and codes of practice as the point of reference for

Environmental Impact Assessment (EIA) at company x

Each location shall prepare and maintain an up-to-date assessment of the environmental impact of the following:

- Solid, liquid, and gaseous wastes produced during normal operations and the measures used for their disposal.
- Any unplanned releases of materials or energy, spill or leaks,
- any soil or groundwater contamination,
- noise levels,
- traffic movements and, finally,
- visual effects.
- The assessment is limited to those activities where the TNC has formal equity interests.

audits, including Responsible Care, good manufacturing practice, German standards, BS 7750 or ISO 14000. Others again referred to acknowledged 'professional standards'. The most common international standard used as a basis for audits was standards developed by corporate headquarters. International or HQ standards are typically used when there are no local regulatory standards lowering a particular problem.

There is variation in the perception of the usefulness of HQ audits. In one particular US based company located in the metropolitan area of Delhi, the environmental officer in charge never obtained a copy of the operational audit. This despite serious environmental problems at the plant. There was no feedback and no recommendations for improvement. The only outcome was a continued benchmarking of current environmental performance, which had to be improved. Apparently environmental control is not always accompanied with appropriate environmental communication!

Another observation is related to the complexity of control and co-ordination among TNCs with a variety of production lines or business groups. In one case, the TNC operated with two completely different environmental auditing procedures depending on whether the Indian activities where organized under regional or global business units. The Indian activities organized regionally were subject to audits co-ordinated by local corporate headquarters located in New Delhi while those organized by global business groups were audited by the regional office in Singapore. Asking the environmental manager how this functioned in practice, he admitted that he felt 'informed' rather than 'involved' in those activities controlled by the global business divisions. His primary orientation was the regional activities, not integrated in transnational global networks. Such a dual track approach can obviously create confusion at local affiliates. Environmental auditing frequently resulted in specific improvement plans, but given the actual pollution control equipment installed, and knowing that the proposed initiatives required additional resources which at that time were not available locally, in those cases the enforcement of these plans was difficult if not impossible to implement in the short term**.**

In spite of this, environmental auditing procedures do normally appear to impact local activities significantly particularly as local managers are reminded of the status of local performance compared to specific corporate standards prevailing, and is given an opportunity to compare the performance of his unit with other units in the corporate network.

2.3.2 Cross border environmental management - more than control?

Control procedures in terms of auditing procedures are typically functioning as more than a one-way process. An internal environmental dialogue between HQ and affiliates was documented in several cases. Normally audits lead to more

concrete improvement plans. Thus, control procedures facilitates the search for actual solutions to the challenges identified and the mitigating needs documented in the audits.

Beyond traditional access to technological, managerial and human resources, we observed an increasing use of the Internet both to facilitate access to information as well as to promote enforcement of specified agreements. Through Internet based communication systems and particularly electronic mail, several problems were solved in an almost "on-line" dialogue with corporate headquarters and equivalent representative officials at other affiliated units. For instance in one case, involving a US based pharmaceutical TNC, the modified pollution control equipment specified by an environmental audit, was not functioning as planned. A similar but more successful retrofitting had been achieved at US headquarters, and extensive exchange of experiences as well as suggestions were made directly through e-mail. The constituting factor was traditional environmental control initiated in accordance with the cross border environmental control system, but the outcome became more than merely control.

What is environmental auditing?

The auditing guidelines defines the requirements of the audit process to be executed. Documentation of actual performance is verified, and each affiliated unit subsequently writes an assurance letter on how to eliminate deficiencies and provide conformance with corporate environmental standards.

The notion 'environmental audit' normally refers to three basic types of audit*; operational, specialist and management audit*. The operational audit is a systematic check to establish whether all activities are being carried out in accordance with the current local management system. This audit can also be termed as a systems compliance audit, and this is by far the most common form of auditing, particularly as it normally is done by local experts, normally certified experts from other affiliated TNC units within India. The specialist audit is a particular, periodic, in-depth examination of the adequacy of particular aspects of the management system and its implementation against environmental standards and the so called recognised good practice. This could for instance be an in-dept audit of the effluent treatment system. The management audit, however is rather an overall assessment of the effectiveness of management implementation of environmental as well as energy, health and safety standards. In contrast to the operational and specialist audit, our findings indicate that this normally is conducted by audit teams sent by corporate headquarters. While the operational audits are conducted by local, trained and authorised experts, very often the audit team also consist of experts either recruited through other affiliated units or from corporate

In one case involving an US TNC, corporate headquarters had develop a specific, computer based reporting system, which both functioned as a general reporting scheme on a monthly basis as well as a reminder to those not having done what was agreed upon after the latest external audit. The local manager in charge reports the actual progress through an online reporting system with a predefined format for performance indicators. As long as this continues in accordance with the plans, no further action is taken by corporate headquarters - at least not until the next auditing - but the "on-line" control secures a better and more continuous information about the status of current improvements in accordance with deficiencies verified in the last environmental audit. Interestingly, the use of online reporting created a more integrated, standardized management system, but at the same time local managers were

trusted with more reporting responsibility. Corporate HQ remained in control, but responsibility was delegated. Perhaps we can characterize the process of local adaptation merging with global co-ordination in the field of environmental management, according to the notion; "glocalisation". Thus, in some cases it appeared that global standards formulated by HQ increasingly are embedded in local procedures.

The Internet is increasingly used on a cross border scale, and the performance of individual units are increasingly disseminated among affiliates around the world. In several cases there is a tradition of publicizing the best performers both with respect to economic and financial results such as turnover, profits and economic growth. In continuation of this, we found several examples of TNCs using the Internet to benchmark the relative environmental performance of individual plants to average corporate environmental performances as well as the best performer within the business groups of the TNC in question. In one US based pharmaceutical

A recent European FDI case in India - the motivation and current characteristics

In 1998 in joint collaboration with a local industrial group, a European large-scale producer of brake linings with a paid-up capital of approximately US$12 million, set up a brand new brake linings factory in the outskirts of Delhi. As the European and other car manufacturers are moving to India, this company decided to follow current customers. When planning for local manufacturing of its car, the European car manufacturer initially decided to use asbestos in brake linings. This is still allowed according to Indian legislation. However, this car manufacturer has made a global commitment to phase out any use of asbestos, and the European HQ did therefore not approve the decision, despite that almost all its competitors still are using asbestos supplied by local components manufacturers of brake linings. The company which we studied supplied the European HQ with asbestos free brake lining, and wished to extend supplies to India. Products produced at the Indian plant are designed in accordance with home country standards. Machinery and product technology is transferred from the home country factory, but the operational responsibility lies with the Vice President in charge of local management. The affiliated units are complying with all local regulatory requirements and the "license to operate" was granted without further problems. However, compliance did not fully include dust emissions as the plant operations started. The Vice President acknowledged that these emissions would not have been allowed at the home country plant. During our visit to the factory, operations were running well, and dust emissions were under control. There appeared to prevail a commitment to produce optimal products.

However, six months after the inauguration, at the time of our visit, there were still not made any efforts neither by local management nor the parent, to institutionalise a more systemic approach to environmental management. Simultaneously, rather stringent quality audits were institutionalised. Product quality is highlighted, including quality of suppliers' inputs. Efforts are recently made to strengthen local supplies, but it is challenging as few suppliers have a satisfactory grade of mineral fibres. Among those capable of providing supplies, all samples were sent to the home country for testing at parent company's laboratories. This testing was also done with respect to the company's own products, the brake linings. This reflects the policy stated and published by the parent; *"It is the (company name's) Quality Policy to develop, manufacture and market products which meet customers expectations and needs. Through focus on cost control, the company would be able to offer its products at competitive prices, both in the domestic as well as international markets. Consistency in product quality would be achieved through implementation of quality system conforming to ISO 9002 and active participation of all employees".*

Significant resources were invested to comply with this commitment, but when it comes to processing concerns and environmental issues at the Indian plant, we could not find similar commitment. Beyond those aspects influenced by the quality product policy, and the decision of not using asbestos, we could not find any corporate environmental standards being formally transferred and institutionalised. The only explicit requirement is to comply with local statutory standards. This does not necessarily imply that environmental performances at the Indian subsidiary are worse than the equivalent home country factory, it only indicates that there are less corporate efforts initiated locally to secure environmental quality and to avoid negative external impacts compared to local efforts of satisfying the quality commitments of the parent as well as the customers

company this was done by measuring environmental indicators like energy consumption, various liquid and atmospheric discharges. Over a specific time period these indicators were compared and improvement of individual units reported. Those with the relatively more significant improvements were benchmarked as the "best", even if other affiliated TNC plants in India and elsewhere, might have lower emission in absolute terms.

Affiliated units are increasingly functioning as independent profit centres, and all access to resources are made available only on payment. Thus, despite being part of the same TNC network various affiliated units are competing for limited resources. One respondent reported that dissemination of information on relative environment performance among affiliated units could be a means to create better goodwill within the TNC network and thus indirectly facilitate more easy, perhaps cheaper and/or better access to resources controlled or at least co-ordinated by corporate headquarters.

2.4 Environmental relations beyond company borders

In OECD countries, industry representatives and business groups are often pointing to the beneficial impacts on the environment of TNC activity in developing countries (Schmidheiny 1992) and that TNCs frequently promote dialogue with concerned external parties on environmental improvements.[5] However, we did not find much evidence that this is actually taking place in India. The benchmarking gave a clear indication that relatively few of the TNCs studied did take extensive initiative beyond formal equity interests. Although several specific projects like funding of local schools, roads, parks, neighborhood organization are referred to by managers, more long-lasting relations with external stakeholders to improve the environment were rarely identified.

2.4.1 Environmental control of activities beyond equity interests?

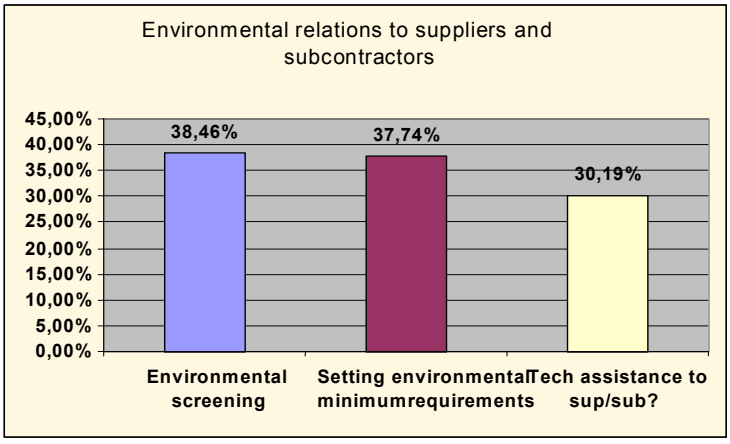
As demonstrated when referring to the specific guidelines on waste management and environmental impact assessments, most of the standards and control procedures refer to plant specific activities. However, examples of TNCs extending the environmental control to external parties were found. According to more specific environmental standards developed by several of the chemical TNCs included in this study, affiliated units are asked to review the environmental performance of their suppliers and contractors. No specific environmental impact assessment is required, but arrangements are proposed to ensure that competent contractors are selected, monitored and supplied. In one case involving a UK TNC, this was done by providing on site contractors

5. As illustrated with initatives taken inter alia by the World Business Council for Sustainable Development promoting stakeholder dialogue and corporate social responsibility.

with sufficient information to ensure that the safety and health of their employees is not at risk at TNC facilities. However, little focus is explicitly set on external activities in general. Consequently, concerning contractors operating outside the premises of the TNC, the environmental standards and control appear to be insignificant.

Concerning environmental control of suppliers, this appeared more evolved when referring to suppliers providing raw materials, equipment and services. 38 per cent did report efforts to screen environmental performance of suppliers or sub-contractors. According to specified guidelines developed by one TNC, these externally oriented activities shall be monitored to ensure that environmental requirements, as set in the mandatory standards, are met. However, only in very few cases did TNCs take the effort of actually monitoring suppliers. Frequently questionnaires were used, asking suppliers whether they complied with certain standards set by the TNC. Particularly in cases were supplier activities created a direct risks for the TNC's own employees and or products, a stronger focus on environmental performance was made. No similar concern was identified when it comes to the external environmental concerns.

A related question is outsourcing of polluting activities to subcontractors/toll manufacturers. This is a challenging question as TNCs rarely will be prepared to discuss such issues. Despite the fact that the TNCs studied generally did assume full environmental responsibility for current operations at plants with equity interests, there is little doubt that there are vast opportunities prevailing to outsource those activities which not easily fit into the strengthened environmental strategy set by corporate headquarters. In one case, a large German TNC involved in dyestuff manufacturing, did change its product portfolio through out-sourcing. As a direct function of import bans in Germany, this TNC changed the procurement policy in which all azodyes are going to be phased out of the local production line. Consequently, this TNC will then no longer be involved in such hazardous manufacturing. The TNCs has become cleaner. This is also what corporate representatives stated, that the TNCs are operating manufacturing units which will become cleaner proving less hazardous products. However, the same TNC remains involved in this hazardous business as supplier of several production inputs enabling the manufacturing of identical dyestuffs.



Consequently, this TNC has redefined its strategy from being a manufacturing of hazardous azodyes, to become a supplier, enabling the same hazardous manufacturing activity. In this case, product stewardship is apparently not part of their concern.

The guideline on product stewardship developed by a UK based TNC, illustrates the interconnectedness of the various environmental issues of concern both internally and externally. As illustrated in the textbox, the product stewardship program is not only focused on TNC products and down stream activities in general. According to management guidelines, TNC environmental consideration shall also be integrated in the purchasing policies. It is stressed that contract manufacturers and contract distributors should be selected to conform with the TNC's environmental, health and safety requirements. The actual environmental management procedures very much resemble those efforts initiated towards suppliers, and again we found few specific details on how this selection is actually done. When asking local managers, it was normally stated that this is currently 'under preparation'.

Despite several publicized commitments to product stewardship and life-cycle management, the general observation is that these efforts normally are limited to those areas where the affiliated unit has formal equity interests. Besides, the validity of product stewardship objectives become somewhat undermined when product stewardship guidelines only request compliance with all local environmental legislation. The philosophy behind product stewardship is to act proactively in local markets in the development of stricter environmental standards. This implies that the TNC is defining itself as an environmental leader trying to influence both market behavior and indirectly regulatory authorities. However, as illustrated with the German case of outsourcing the production of akzo dyes (at a generic level) it is difficult to see that this is the case of affiliated TNCs currently operating in India.

Product stewardship at company x

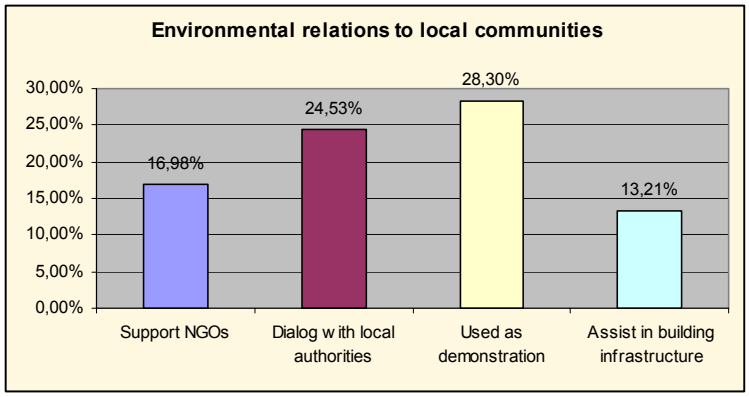
Product stewardship is defined as a demonstrable process by which a business can identify and manage its environmental conduct arising in development, manufacture, distribution, marketing and the use and ultimate disposal of its products in a safe. healthy and environmentally sound way which will ensure conformity with local requirements and company policy.

According to the proposed guidelines, management should demonstrate that environmental issues related to the actual product rank amongst the highest priorities and should maintain commitment to continuous improvements. Further the business products should be designed, developed and modified both to meet customers needs and to minimise environmental impacts. A third principle is related to information on the potential adverse environmental effects of products and their uses. Risks from reasonably foreseeable uses and misuses of products should be evaluated and periodically updated. Further, appropriate systems to manage risks throughout the product life-cycle should be developed and implemented, and all proposed changes likely to affect the environmental assessment of the product should be reviewed

2.4.2 Environmental relations to local communities

Among the benchmarked TNCs, 1/4 reported dialogue with local state pollution control board in regard to standard setting and 13% reported to be assisting

local authorities in environmental infrastructure development. The relatively low propensity of involvement in local external affairs is also evident with respect to civic groups or NGOs. Only 16% of the TNCs benchmarked stated that they co-operate actively with local environmental NGOs. Even among some of these cases, the collaboration was often limited to financial support of local welfare projects, safety measures, technical provisions to a local fire brigade and general information to local adjacent communities on environmental awareness. But very few appeared to establish any active dialogue local or national environmental NGOs. TNCs appear to be particularly wary of Indian NGOs and regulators and appear to want to keep a low profile. Apparently a muted, withdrawn appearance concentrating on keeping their in-house and back-yard clean beyond the scrutiny of external stakeholders is preferred.



As previously mentioned, many of the TNCs are involved in various forms of collaboration with local communities, normally adjacent to particular plants. Few have established any close collaboration with environmental NGOs, and it seems that TNCs are somewhat reluctant to get too involved in these issues even with an industrial association like Thane Belapur Industrial Association (TBIA) organizing plants located along the Thane-Belapur

The role of TNCs in the Indian Chemical Association

Two particular cases, including the UK based Imperial Chemical Industries (ICI) and the German based TNC Bayer, illustrate individual initiatives by TNCs to influence standar setting. The Indian Chemical Association (ICMA) is organized around regional cells of which the pollution control programmes of the western and eastern cell to a large extend have been influenced by the the initiatives of Bayer and ICI respectively. At the same time however, ICI has not been equally involved in the activities coordinated in the western cell by Bayer. ICI has rather concentrated on efforts among members in the eastern cell within and around Calcutta. This is done despite the fact that ICI do have significant manufacturing activity within the western cell. The case of ICI and the eatsern cell of ICMA is quite illustrative of, how some large TNCs are operating to affect environmental standards. As confirmed by representatives of the west Bengal Pollution Control Board, the efforts made by ICI to raise environmental awareness and strenghen actual initiatives regarding pollution control and pollution prevention were not limited to other memberfirms of the ICMA. ICI invited representatives of the WBPCP to establish a more direct dialog based on experiences which ICI had had at the Rishra plant located just North of Calcutta. Contributing to making this case interesting is the fact that these initiatives were undertaken in spite that environmental NGOs had targeted the Rishra plant, arguing that this plant was a major source of pollutive liquids being discharged into the Hooghly river. ICI wanted to convince the WBPCP not only that these allegations were wrong but also to share the experiences with retrofitting an old chemical plant from the 50s in order to have it comply with regulatory requirements as well as company internal standards with the regulatory authorities (according to ICI policy, all plants, regardlesss of location, must meet company internal

road located in the outskirts of Bombay metropolitan area. The majority of companies taking an active lead in TBIA were Indian, not necessarily local, but very few were TNCs. Our findings indicate that TNCs if involved at all, rather prefer to focus on establishing dialogues with regulatory authorities through nation-based, all Indian industrial association like the all India Chemical Industrial Association (ICMA).

The majority of TNCs studied are operated on an individual basis, and few were involved actively in local industrial organizations. We did, however, identify some cases of TNCs were conveying internal environmental managerial procedures to the Indian Chemical Industrial Associations (ICMA) work on the Responsible Care Program (RCP) and environmental, health and safety standards in general. Perhaps it is no coincidence that those TNCs having documented advanced EMS procedures locally, were those trying to impose equivalent environmental standards among ICMA members. According to the corporate environmental manager of the German TNC chairing the RCP group of the western region of ICMA, the initiative were taken; "to improve general awareness both in environmental questions within the chemical sector and how to integrate these concerns with commercial strategies." Apparently TNCs are trying to capitalize environmental achievements through enhanced competitiveness.

The Centre for Science and Environment (CSE), an environmental NGO based in New Delhi, recently launched the Green Rating Project. This is an initiative to address industrial pollution problems by measuring environmental performance of individual companies through collection and analysis of industrial data. By publicizing these data CSE believes that an improved general understanding of actual environmental performance of particular firms will be improved. Attempts are made to study the environmental performance of the pulp and paper and automobile industries in which TNCs increasingly are involved. The CSE initiative must be treated as an exceptional effort made by NGOs. Still, as verified by the CSE officer in charge of the Green Rating project, the general NGO attitude is that TNCs are using India as an industrial waste dump. Rather than establishing documentation of environmental performance, NGOs are prepared to limit these presumably hazardous activities, by promoting public protest or by filing cases through courts, initiating so called judicial activism.

TNCs studied in this project acknowledge that there is limited dialogue with environmental NGOs, and the general dialogue with civil society is more related to community groups and other stakeholders living in the vicinity of the plant. Issues of concern are less related to the environment, and more to financial support of primary education and vocational training, fire-safety measures and health information. The only examples we found of actual dialogue with NGOs were in relation to social functions of the local community or when adjacent communities were invited to the plant facility. Even at these

plant specific occasions, the dialogue were not at all on equal footing. The TNC was in charge both of designing as well as managing the social activities, and in practical terms, the TNC's focus remained quite plant specific.

2.5 A general evaluation of the state of environmental management

It appears that most of the examined TNCs have established environmental management systems. But still, relatively few affiliates can document institutionalized environmental management systems, which includes a more systematic approach to strengthen environmental protection through formalized performance standards, guidelines, local procedures that are reported and audited within transparent governance structures.

Based on the findings in this section, the following can be concluded:

1. *Despite the existence of techniques to eliminate hazardous discharges, proper managerial systems to avoid such discharges are not always in place*
2. *Local environmental management systems of TNC affiliates are rarely certified.*
3. *There seems to be rather elaborate environmental ties between HQ and affiliates as signified by the widespread cross border environmental management procedures.*
4. *However, in terms of management beyond equity interests, the practices appear quite embryonic.*

We found a clear tendency among TNCs to compare and even benchmark their own performance to local firms. Thus, indirectly the performance and procedures of local comparable firms can be used as a benchmark for our sample. In this context it is interesting to observe that only three of the total sample of 53 TNCs stated that their environmental performance were 'equivalent to other comparable Indian firms'. All others claim to have local performances, which are 'above average of industry standards in India' or 'more similar to parent country/OECD standards'. Assuming the average OECD standards are above Indian standards, this signifies that almost all TNCs benchmarked considered their own activities to be superior to industry environmental standards in India. Apparently, TNC managers consider it socially unacceptable to be depicted as following Indian standards only. TNC representatives typically report that technologies and equipment employed by TNC affiliates are more modern and more recently constructed than comparable local firms.

As studies of local firms have not been conducted, it is difficult to verify these statements, but several external sources both from the NGO community, regulatory bodies and some representatives from industrial associations

indicate that there seems to be a tendency that TNC plants are better maintained and more efficient in terms of waste control management. But this does not necessarily signify that this is due to transnational ties. Local performance improvements can be locally driven, particularly as many of the respondents showed a strong commitment to environmental protection.

On the other hand, the TNC network potentially represents a channel for transfer of product and environmentally sound technologies which are not easily available through arms-length transactions. This refers both to transfers of hardware pollution control equipment as well as environmental management systems and know how. In the following section we will examine the influence of headquarter factors vis-a-vis other factors for improving environmental performance of affiliates.

3. Determinants of TNC environmental conduct in India

In June 1991, in the midst of severe fiscal and external imbalances, which had generated double- digit inflation and put India on the verge of defaulting on its external debt obligations (Kapila 1997), a new government undertook the major task of stabilizing and liberalizing the economy. Various economic reforms were subsequently initiated impacting domestic markets, consumption patterns and investment opportunities both for national entrepreneurs and foreign investors. Policy changes triggered increased foreign trade and both exports and imports were stimulated. Foreign investors and particularly TNCs responded to these reforms by strengthening corporate controls of local manufacturing units through FDI.

Despite the TNC caused Bhopal tragedy of 1984, it took TNCs many years to initiate processes to strengthen local environmental management. Even today many of the TNCs involved in manufacturing have not made environmental protection and natural resource conservation an integrated part of their environmental management practice. The opinion of these TNC laggards is illustrated by this statement by a manager; "we are in the process of improvements, but responsibility for actual compliance remains with the local management in India"! In other TNCs, significant improvements are achieved even at the systemic level. TNC practices are apparently positioned between rudimentary practices and highly advanced practices. The question to be asked, is what brings about these variations in corporate practices?

A domestic market orientation, which drove almost all the TNCs studied to invest in India, may imply that the TNC units are operating more isolated from global competition and general requirements of the world market. This may have major implications both for the actual environmental procedures and performances, but also for the overall behavior of the affiliated TNC unit. The

objective of the chapter is to discuss the causes influencing the character of environmental management systems. The overall question is, whether the environmental performance is driven merely by local factors or whether we can identify other motivating factors.

We will start with local forces, pressures and incentives of the Indian regulatory context. Then a focus is set on pressures and incentives of the market, including global markets. Finally, we will direct focus to the pressures and incentives of the corporate network.

3.1 Pressures and incentives of the Indian context

Almost all the affiliated TNC units were initially located due to perceived market opportunities in India. Consequently, it is appropriate to start this section on the causality behind the character of environmental management procedures and practices of TNC affiliated units in India by focusing on pressures and incentives in the context of the host country. This is done by initially focusing on institutional factors, that is the role of environmental regulations and institutions. Subsequently, the section will focus on political and ideological factors, affecting environmental performance on the affiliates.

3.1.1 Institutional factors

Weak enforcement of environmental regulations

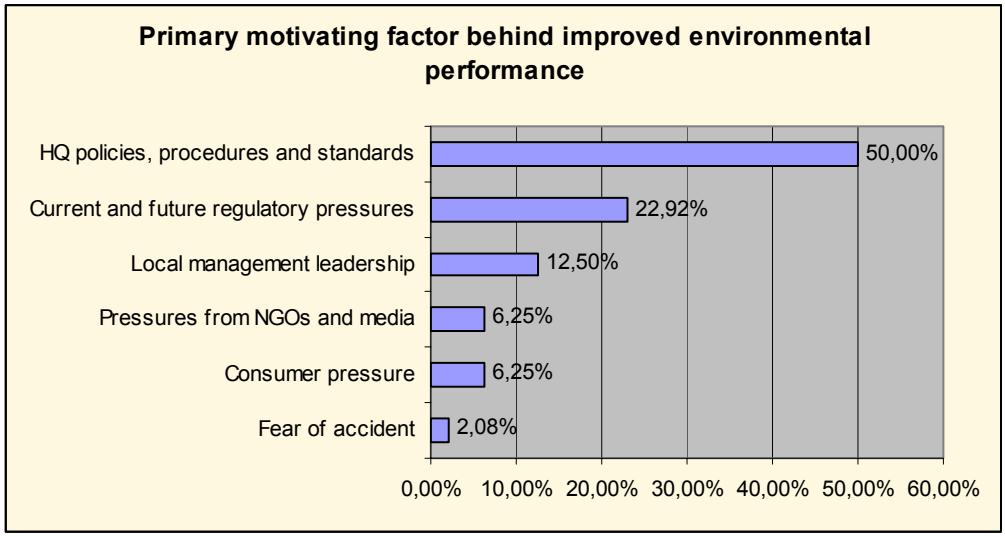
Surveys of environmental management typically conclude that TNC environmental management is mainly driven by regulatory pressures (UNCTAD 1993). In this regard, India has institutionalized formal environment control at an extensive scale. The formal environmental legislation is as advanced and demanding as the average European environmental legislation (Kuik et. al 1997). However, in several states of India there are examples that these formal normative requirements are not converted into actual enforcement and regulatory strength (Murti 1997).

Environmental authorities are receiving growing numbers of new applications for environmental licenses, both to obtain a consent to establish an individual plant as well as the subsequent consent to operate this plant. However, administrative resources allocated to strengthen environmental governance, remain limited. As pollution-intensive industrial growth is further stimulated, the actual regulatory capacity to handle current environmental challenges is becoming increasingly inadequate. The outcome may be weak enforcement of environmental regulatory requirements.

In recent years legal and particularly judicial activism has forced state pollution boards to strengthen environmental control (Jha 1999, Jha and Lal 1999). Particular polluting units are identified and with explicit reference to court rulings, units not complying with regulatory requirements are asked to find

appropriate remedies within specified time limits. Due to judicial activism, Indian environmental regulation has de facto been strengthened.

This is the political situation within which TNCs are operating affiliated units in India, but according to the TNCs surveyed only 23 per cent of them stated that 'current or future regulatory pressure' was the main motivating factor for improved environmental performance in India. Among those referring to regulatory pressures, the majority refers to either future regulatory strengthening in India (6 percent) or current regulatory requirements (17 percent). In two cases, the TNC managers reported that they had experienced relatively stricter environmental control and enforcement in their home countries, forcing them to retrofit older European and US facilities to comply with stricter regulatory control. When these TNCs made green-field projects in India, they wanted to avoid another time consuming and expensive retrofitting of processing technologies as Indian regulation was strengthened. As explicitly stated by the environmental manager of one of the German TNCs studied; "it is easier, more convenient and cheaper in the long run, to make environmental investment at an initial green-field stage, rather than retrofitting processing



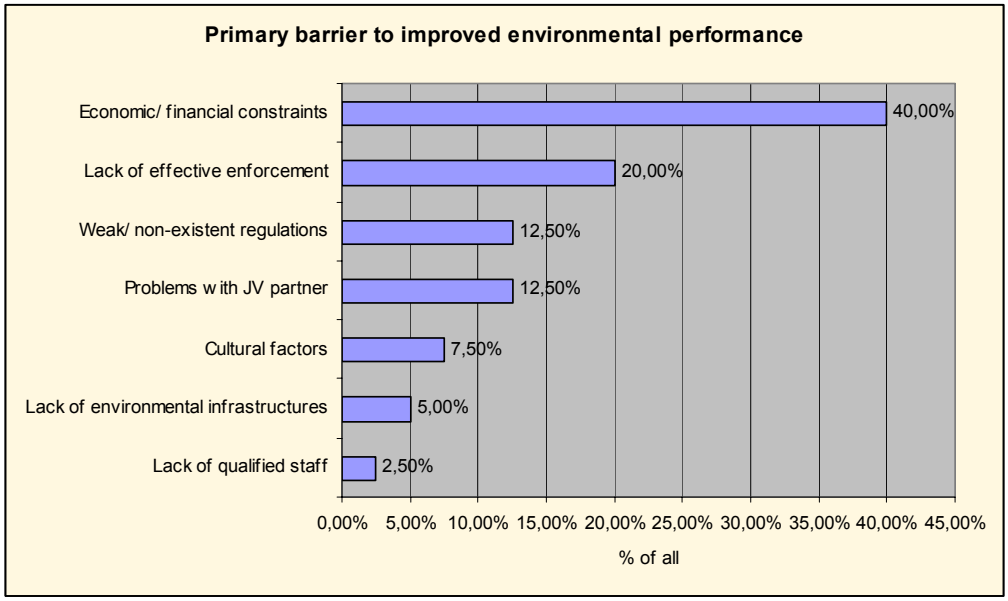
equipment at a later stage". The manager knew what he was talking about, as the same TNC, recently had conducted an expensive modernization program including retrofitting of processing equipment at several comparable units located in Germany. However, this case refers to green-field project, and our findings document that the large majority of TNCs are still operating relatively older processing plants; More than 60 per cent of the benchmarked TNCs control Indian plants that are set up prior to 1991, and 1/4 were even set up before 1971.

While affiliates generally reported good relations to local environmental authorities, a relatively large proportion of the TNCs (23%) reported to have a 'problematic' relationship to local environmental authorities. This finding could

be related to the above observation, that environmental regulation of industry in the wake of Bhopal is relatively antagonistic.

Weak patent protection

Beyond the general institutional context of environmental regulation, some of the companies were explicitly referring to weak patent protection as a reason for not installing equivalent pollution control measures equivalent to the home country. This was particularly stated by pharmaceutical companies. For the



record it is important to keep in mind that these companies, according to local pollution control boards, did not represent a problem in terms of violating local environmental regulation. Actually one of the TNC's did both have extensive dialogue with local pollution control board as well as a good relation with environmental authorities in general. Weak patent protection was nevertheless stated as an impediment to transferring the latest environmental technologies. There might be certain health hazards related to patented drugs and certain formulations, but environmental hazards are merely created during the production of bulk drugs, prior to actual formulations. As far as we could document, these TNCs do not possess patents on processing systems. They do control several worldwide patents for particular drugs, but weak patent protection was mentioned as a factor limiting environmental initiatives with respect to pollution control in India. Thus, in terms of pollution control, weak patent protection seems to be an excuse for not transferring state-of-the-art pollution control technology and processing equipment. In the case of product related environmental hazards, as is the case of other chemical products, we can more easily comprehend the argument.

Industrial policy

Another institutional factor influencing the current character of environmental management at the affiliate is industrial policy. Several of the informants representing the relatively older establishments, pointed to the fact that historical restrictions in terms of limited installed capacity, costs and limited opportunities for technology imports as well as traditional restrictions on integrating Indian affiliated units into the global strategy of the TNC, have impeded the environmental management procedures and practices at Indian affiliates.

Traditional industrial policies did in fact constitute significant limitations on designing and operating affiliated plants in India. The installed production capacity was often smaller than what was applied for, and many Indian operations controlled by TNCs have characteristics both in design and general logistics that deviate from those found in Europe or the US. Import restriction and requirements for local contents further limited TNC's preference for global standardization.

Currently there are few institutional barriers for strengthened imports of environmental technologies, and for certain industries these imports are even exempted for custom and tax duties. However, as retrofitting of current operations is both time consuming and costly and knowing that local regulatory requirements are not as demanding as equivalent requirements abroad, there are no strong drivers locally to force TNCs to respond to the opportunities of environmental improvements provided by the new economic policy launched in 1991. History apparently counts despite changes in economic policies.

3.1.2 Political and ideological factors

The Bhopal tragedy caused a particularly difficult situation for TNCs operating within environmentally sensitive industries such as chemical manufacturing. Environmental problems created by industrial activity increasingly came on the political agenda. At the same time, economic nationalism created a generally hostile attitude to foreign controlled activity, and the Union Carbide caused chemical disaster only fitted into a general observation that foreign economic agents were not wanted. Today, despite economic liberalization, informants indicate quite clearly that TNCs are relatively more scrutinized than comparable local firms regardless of actual environmental performance.

The case of DuPont's proposed «Nylon 6,6 project» to be located in Goa, is a relevant example (Jha 1999). In this case the general public and particular local village representatives did not believe that DuPont would create the environmentally sound project which was already approved by local and central authorities. Despite this, relatively few cases of judicial activism have actually involved TNCs (Jha and Lal 1999). This must indicate that TNCs

currently are not involved in many activities justifying such litigations. Beyond the expected strengthening of the normative regulative framework and particularly the formal enforcement procedures, informal political control through public vigilance and judicial activism, will remind TNCs to keep an eye on any issue which might evoke anger among the public in India.

Being continuously scrutinized, TNCs face a challenging situation. As explained by several corporate informants, the only solution is to keep their houses clean and tidy, and it is a challenge in itself to approach society and to generate goodwill, not only in markets but also among communities. Some of the TNCs have launched quite extensive PR campaigns in Europe, telling the general public and particularly customers, about the environmentally friendliness of products and the company in general. It is striking that similar campaigns are not launched among those studied in our sample - at least not on the same scale. TNCs are generally keeping a low environmental profile. As stated by one informant; "high exposure normally equals more criticism, even if it is not fair".

3.2 Pressures and incentives of the market

3.2.1 Local market pressures

Some of the sample TNCs can document worldwide commercial success in launching green products. However, the same products are not yet launched on the Indian market. The official reason is that these "greener products" are too expensive as the minimum retail price TNCs have to charge is only suitable for a very limited upper tier market segment. The same companies are therefore concentrating on the more rapidly growing middle tier of household markets, demanding cheaper and more ordinary quality products. Products with a green premium are withheld, at least in the household market.

TNCs are not openly acknowledging it, but green consumerism is still very weak in India, particularly in the household market segment. Thus, when trying to understand the influencing factor of the local market, it is important to distinguish between industrial and household customers. Our informants referred to market surveys indicating that very few household customers are actually prepared to pay an environmental premium. A producer of paints reported that a factor contributing to this was that very few middle-class Indians are actually painting their houses themselves. This in striking contrast to the market demand among European households, where health and environmental concerns are driven by a personal need to avoid exposures to hazardous substances. This implies that for those of the TNCs actually providing final goods to households, to remain competitive in the local markets, any environmental cost generating investments must be internalized into current corporate margins. The actual outcome observed indicate that

these greener but more expensive products still are not launched in the local market.

There might be a similar situation within the industrial market segment. However, industrial consumer preferences are changing as illustrated with the case manufacturer of brake linings. We found several examples where the industrial customer is setting specific environmental standards on both intermediate and final products supplied. This is quite similar to the environmental supply chain management which some of the TNCs studied, are requiring their own up-stream suppliers to comply with. These requirements both refer to raw materials applied, to specific production methods used as well as transportation and handling of those items supplied to the TNC in question.

The general impression is that the local market as such does not appear to be a dynamic factor in promoting a strengthening of environmental management among TNCs. Quite the contrary, the evidence presented indicate that local market structures rather seems to represent a barrier to strengthened local environmental management by TNCs.

3.2.2 Global market pressures

Several of the TNCs studied are manufacturing dyestuffs, which often are exported back to Europe. As local manufacturers, TNCs have traditionally been focusing on the manufacture of azo-dyes compared to more environmentally sound organic dyes. Recently, however, Indian exporters of dyestuffs and particularly textiles, have experienced that importing European countries are setting certain import criteria, which also include environmental standards. For instance Indian exporters have been met with "eco-protectionism" in Germany in the case of textiles with azo-dyes. Despite that all the relevant German TNCs were initially motivated to set up the Indian FDI due to local market opportunities, the current export performance back to home country is driving some affiliated Indian units to comply with German regulatory requirements.

The case of import ban on azo-dyes to Germany is an extreme case. The global pressure, which can be found more instrumental, is European prohibitions to apply certain hazardous substances in European facilities. There are examples of companies applying chemical inputs, which would not be allowed in equivalent European facilities. However, the study did not provide evidence that such an opportunity to pollute has been a driving factor in locating TNC units to India. Actually, as these hazardous activities are subject to rather stringent environmental control regimes in India, no evidence was found that TNCs shifted pollution-intensive production to India merely to avoid pollution control.

What we found quite clearly is the pressure of standardizing environmental procedures as a consequence of intra-firm trade. In one case, an intermediate

product was manufactured at plants, which previously were relocated from Germany. However, the product was being re-exported to Europe, and this intra-firm linkage appears to be quite instrumental in setting certain minimum standards both of environmental and quality procedures. The Indian outputs are designed to fit into a global logistics system, and consequently Indian TNC units cannot compromise on certain standards, which increasingly include environmental issues.

3.2.3 Industry specific factors - and initiatives at the branch level

Industry specific factors and particularly the strengthened environmental awareness within the chemical industry and certain global market segments may also influence affiliated TNC units. In this connection we find it appropriate to mention sector specific initiatives like the Responsible Care Program (RCP). It appears that the RCP is functioning as a dynamic factor within the Indian chemical industry because certain individual TNCs are taken a hegemonic role within the RCP in bringing the sector towards a heightened environmental awareness. It appears that it is a few TNCs rather than the sector associations which actually are setting environmental, health and safety measures on the industrial agenda.

Particularly the ISO 14000 series of environmental management standards are increasingly functioning as a benchmark for corporate improvement. Normally the number of firms certified in accordance with the ISO 14000 standard is assumed to be a reflection of environmental consciousness within particular markets. In India where markets are not particularly green, however, certain companies are driving other firms to increase the awareness on ISO 14000 and environmental management in general. According to the benchmarking, app. half of the TNCs have been or are considering seeking ISO 14000 certification. These efforts, however, may be countervailed by local market pressures.

3.3 Pressures and incentives of the corporate network

3.3.1 Pressures and incentives of environmental function at HQ

Responding to our question on what is the major motivating factor for improvements in environmental performance as many as 50 per cent of the 53 TNCs responded that this is related to policies of corporate headquarters.

As previously documented an increasing number of TNCs operating in India have rather recently specified particular environmental policies. This is further followed up with more stringent environmental standards and particular guidelines that are audited by local management or corporate headquarters. The outcome is a strengthening of environmental management systems. A growing number of reports are submitted which explicitly are related to environmental issues. Apparently, headquarters wants to know what is going

on and whether the affiliated units are operating in accordance with commitments stated worldwide.

What are the reasons for this apparent strong influence of HQ? Traditional explanations will relate these initiatives to external factors and one such explanation could be that TNCs, unlike larger domestic rivals, tend to be more vulnerable to demands and pressures emanating not only in India, but also through networks of corporate affiliations and transnational political campaigns for instance co-ordinated by environmental NGOs. TNCs based either in the US or Europe are increasingly becoming scrutinized by stakeholders that not only are concerned with local issues. As illustrated with the Bhopal disaster and perhaps even more vividly with the more recent case from Nigeria where Shell was criticized by numerous environmental and human right NGOs, NGOs are capable of performing rather effective campaigns worldwide. TNCs are aware of this and act consequently by strengthening global (environmental) controls.

The question is however, whether stronger external pressures alone can explain the environmental initiatives documented among the TNCs operating in India. It could be hypothesized that we are witnessing notable changes in the values and perceptions of corporate decisionmakers as well. While the study has not focussed specifically on this question, the expressed concerns among local TNC managers expressed in interviews could suggest that reorientations among managers in corporations could be a contributing factor to explaining progress toward stricter environmental controls within the global corporate network.

3.3.2 Pressures and incentives of HQ not specifically related to the environment

One of the more surprising findings is related to pressures and incentives from HQ, which are not specially related to the environment. Among those TNCs having formalized environmental management systems in place, almost all had already made equivalent efforts in terms of quality management, that is BS 5550 or ISO 9000. It thus appeared that the culture of quality trickles down into environmental awareness. On the other hand, there are still several examples of companies with a relatively high level of quality consciousness, which did not show any equivalent responsibility when it comes to environmental issues and occupational hazards. We found indications that the culture of quality was driven basically by product orientation as this impacted rather directly on market performance and the satisfaction from customers. The same customers did not always express equivalent concerns with environmental issues, and the TNCs consequently did avoid these concerns. A striking example was found at a US TNC manufacturing pollution control equipment. At this factory which was set up in the beginning of the 1990s, external emission standards were set in compliance with standards of local pollution control boards, but internal occupational standards particularly

related to coating procedures were not equally advanced. Knowing that this TNC created its competitive advantage on promoting a cleaner environment, such double environmental standard setting appears striking.

Another factor influencing environmental management procedures is ownership control vis-à-vis Indian partners. Even if almost all TNCs included are majority controlled foreign entities, there are still 12 percent having a minority equity share. Among these seven TNCs, there are indications that environmental procedures are not integrated on a cross border scale equally to those TNCs having majority interests. One example is a Swiss-German joint venture in which all environmental responsibility formally was delegated to local management. The owners set quite specific standards on manufacturing practice. The quality control of products was stringent, including formalized reporting procedures to corporate headquarters in Switzerland and Germany. In terms of formalized environmental reporting or on-site environmental auditing, however, there were no requirements from owners. In another case, the US owner explicitly delegated environmental responsibility to local partners on formal grounds, and no explicit requirements were set to environmental management or performance. The local management did not recognize any environmental problems in spite of the fact that the local environmental practice was potentially hazardous with obvious on-site leakages and improper treatment of industrial effluents. In both these cases, the lack of formalized environmental reporting and environmental auditing by HQ appeared to be directly related to lack of majority control. Environmental management to a large extent is associated with risk avoidance management, but apparently these references indicate that such avoidance only appear among those affiliated units subject to majority control which is formally controlled by the TNC in question.

The case of a Norwegian TNC is quite illustrating. This conglomerate is among other things involved in petrochemical manufacturing, and for many years it had a 33 per cent equity share in three South India plants manufacturing polypropylene and related products. However, in 1997, the Norwegian equivalent of Multinational Monitor - the Norwegian voluntary organization "Future in our hands" - documented through its newsletter "Norwatch" that this TNC did not operate its Indian activities in accordance with stated environmental, health and safety standards and far below standards implemented at comparable European units. This happened at a time when the same company also had been scrutinized for other Indian activities related to a proposed bauxite/alumina project on the East Coast. The outcome was that the Norwegian company through its regional subsidiary in Singapore, hiked the equity shares to 51 percent, replaced the local managing director and initiated various initiatives which both strengthened local environmental performance and transnational corporate control. A formalized environmental reporting system was set up, and more regular environmental auditing procedures was

initiated. According to the TNC this was already in the pipeline when the Norwegian watchdog publicized their findings. The actual outcome is a significant strengthening of Indian equity interests, which currently are majority controlled.

Environmental control from corporate headquarters in particular seem to be materialized among those TNCs having a general corporate culture of global co-ordination. We might distinguish between the engineering based cultures of global standardization and the marketing based culture of local adaptation. Among those TNCs with a prevailing engineering based culture, there were a higher propensity to promote standardized environmental control and co-ordination as a part of the general corporate governance system. On the other hand, in TNCs with prevailing marketing based cultures, standards were developed in accordance with local specifications. The different characteristics of two UK based TNCs illustrate this point quite clearly. Both TNCs started their operations in India in the interwar period selling chemical products manufactured in the UK, and both set up local manufacturing plants in the 1950s. However, local manufacturing differences erupted on various dimensions particularly as a consequence of the radicalized Indian industrial policy of the 1970s. While one of the TNCs did continue the production of a production range quite similar to what was produced in the UK, the other did modify the product range to satisfy particular Indian preferences. This company did also change the name as well as the brands of some of the household products. Although differences may be explained by external market factors, the internal culture did create significant differences, which also can be related to environmental management. As stated by the environmental management of the TNC with a prevailing marketing based culture; "the Indian customers are setting the environmental standards". The UK based environmental management of the engineering based TNC on the contrary stated to Indian environmental managers;" we are setting the targets, you are supposed to follow them".

4. Conclusion

As reflected in the questions raised initially, the overall consideration is whether we can identify processes towards global standardization both in terms of product, process and management specification within the TNCs in question or whether the affiliated units are left to conduct their operation in accordance with local business and market conditions. If the latter is the case, then the affiliated units would be allowed to develop a performance of local adaptation both to adjust products to local preferences, to adjust processes to local conditions, and to adjust management to local capabilities and priorities.

The study gives clear indication that many TNCs operating in India are strengthening the environmental management of affiliated units. Economic and

political matters remain important, but the study indicate quite clearly that institutional factors, and particularly those related to the intra-firm dynamic between corporate headquarters and affiliated Indian units, turns out to be essential factors driving local environmental performance.

4.1 Major findings

We did find significant evidence of environmental management materialized at TNC affiliated units in India. Efforts were initiated, but often with significant deviations from intentions and policy commitments stated at corporate headquarters. Thus, institutional factors related to the intra-firm dynamics are significant, but still local factors count. Despite that HQ policy, procedures and standards are considered to be the major factor influencing local environmental performance, local practice is not necessarily a replicate of HQ practices.

4.1.1 The case of environmental auditing and reporting

As far as we can document, one of the most significant changes taking place at affiliated TNC units in India is the strengthening of global environmental corporate control through various forms of environmental auditing and reporting procedures. As many as 74 per cent of the sample stated that an on-site environmental auditing was conducted by corporate headquarters. Affiliated units have always been forced to report on financial and commercial affairs. During the 1970s and particularly 1980s, an increased focus was set on health and occupational hazards. However, until the 1990s there were no systematic attempts by TNCs to verify and control environmental affairs and actual impact of affiliated TNC units. This was the sole responsibility of local management. It remains a local responsibility but local activities are increasingly scrutinized by various stakeholders, and TNCs are responding by strengthening environmental auditing procedures. Several TNC informants stated that increased internal controls did function instrumentally for sustaining higher environmental standards. A more systematic reporting also appears to be in the process of being institutionalized on a more or less frequent basis. The study thus documents that as many as 71 per cent of the affiliated units are asked to submit formal environmental reports to corporate headquarters. These reports are often complementing the auditing procedures initiated by corporate HQ. Through managerial, specialist and operational auditing, affiliated TNC units are becoming subject to global TNC control. This is for instance the case in regard to waste management.

4.1.2 The case of waste management

Despite that most of the effluent treatment plants installed at TNCs are designed and procured through local suppliers, headquarter is increasingly setting very specific formal standards on, how hazardous wastes shall be

treated, if possibly recycled or finally disposed of. However, the study indicates that Indian TNC units frequently fail to comply with these corporate environmental standards. Often the environmental benefits were not achieved despite pollution control technology installed, because various plant activities were not co-ordinated and managed properly. In other cases, however, efficient measures were implemented as a consequence of appropriate local management procedures. Efficient and appropriate waste management measures were also seen among those TNCs not having documented a systematic approach to waste management. Further it is seen among TNCs not formally promoting a strengthened integration of local activities with global commitment. Cross border environmental management is becoming a significant factor explaining local TNC behavior, but the case of waste management indicates that responsible behavior may found regardless of strict corporate standards and cross border environmental auditing procedures. However, at the same time those TNCs having a cross border environmental management system in place, did generally facilitate and enable local management to improve waste management procedures, particularly at the plant site.

4.1.3 The case of supply chain environmental management

Environmental management appears to be concentrated on plant specific, and equity related activities. Despite that as many as 38 per cent of the benchmarked sample did state that suppliers and sub-contractors were subject to minimum environmental requirements, these did not appear to be enforced. What was normally done among those setting minimum requirements, was a request for self-documentation with respect to various health, safety and environmental parameters. It was not documented that any suppliers actually had lost a contract regarding deliveries to TNCs due to EH&S concern stated by the TNC in question. Thus, TNCs appear to limit the environmental concerns to factors, which can influence internal TNC conditions, TNCs processing situation and final TNC products.

4.1.4 The case of product stewardship

TNCs are to some extent setting specific minimum standards for suppliers and sub-contractors directly influencing plant specific activities of TNCs, but when it comes to downstream activities and product stewardship, no documentation at all was provided. This was the case with several waste handling contractors, and the TNCs in question did not know what actually happened to the TNC generated waste. Further, environmental concerns are not easily conveyed if consumers preferences indicate otherwise. The opinion of many TNC representatives can be illustrated by the following statement; "we are in business to serve the customer". Many TNCs explicitly state that they strive to

become the preferred suppliers to certain customers. If the customer don't care for the environmental, how could the supplier care?

Actually the study documented that a UK based TNC had to withdraw an environmentally sound paint from the Indian market despite that the same paint became an commercial success in the UK and in the US. In India, the TNC wanted to steward local consumers into an environmentally sounder consumption pattern, but a price premium did hamper these plans. Local consumers rather preferred cheaper but more polluting products.

4.1.5 Islands of environmental excellence?

The examples of waste management, supply chain management and product stewardship give quite clear indications that local environmental management of TNCs operating in India are primarily focussing on internal affairs, and those formally related to equity based, and normally majority controlled plant activities. This particular focus is further strengthened by various HQ initiated environmental auditing and reporting measures, requesting local management to document efforts on special processes, particular operations or environmental management in general.

At the same time it is widely documented that efforts of combating industrial pollution and improving environmental management in India are inadequate. Financial, technological, organizational and human resources are lacking to fulfill necessary environmental tasks. Despite a rather demanding regulatory regime, with specific emission standards on acceptable liquid discharges and atmospheric pollutants, the limited staffing of state pollution control boards make actual enforcement of standards weak. Consequently, polluters frequently get a free ride as few are caught for violating environmental regulations. The study documents that intra-firm dynamics of environmental controls are strengthened in TNCs. HQ is requesting Indian units to report local performance in a more formalized way. Environmental assessments are made prior to mergers and acquisition and self-reporting schemes are complemented with mandatory auditing procedures. The outcome can easily be perceived as a strengthening of environmental performance in a country, which is struggling with the most basic environmental challenges. The question is, whether we are witnessing processes in which TNCs are creating «islands of environmental excellence» in a "sea" which is becoming dirtier?

4.2 Summary

Clear indications were found that global more than local markets were influencing environmental management of TNCs operating in India. But market forces as such did influence significantly less than institutional factors like environmental regulations and TNC environmental policies and programmes. TNCs are increasingly setting environmental performance criteria and standards for affiliated units. At the same time, it is documented that these

standards remain limited to TNCs equity interests. Environmental impacts on local economic agents are limited if not insignificant, perhaps with the exception of those becoming directly involved in TNCs manufacturing activities as on site sub-contractors or as suppliers of raw materials. What are the policy implications:

First of all, the project documents that TNCs are not necessarily using India as a dumping ground for obsolete and polluting technologies. Particularly the FDI projects being inaugurated in the wake of the new economic policies launched in 1991, suggests that state-of-the-art technologies both in terms of productivity, quality and environmental concerns, frequently are transferred to India. But even more important is the fact that environmental management at older plants increasingly are becoming subject to cross border environmental control. The number of TNC plants in India formally being screened through environmental reporting or auditing procedures illustrates the strengthened control quite clearly.

Secondly, FDI inflows do not automatically create a general improvement in environmental performance of local industries. The study documents significant impacts on TNC affiliates, but not equally on local partners, suppliers and local consumers.

A *third* finding is that history counts. Despite that the majority of TNCs benchmarked have relatively new units, a significant number is still very old. As these units were set up during time of radical performance requirements in terms of installed production capacity and local content specification, plants are not considered to be optimal neither in terms of promoting economies of scale not environmental protection. For this reason, TNC HQs are strengthening environmental control through various intra-firm environmental measures with the overall aim of limiting any environmental liabilities.

Finally it must be concluded that sustainable development will not be triggered by TNCs as long as affiliated Indian units are treated as enclaves without more explicit and elaborated concerns for local environmental challenges. Assuming local acceptance, TNCs ought to take more direct contact to the local community, in particular local industry but also environmental NGOs. As long as TNCs remain merely focused on their internal environmental procedures, the opportunity of strengthening environmental excellence within India's industrial sectors will be missed.

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