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***Environmental Management
of Transnational
Corporations in India***

***Are TNCs Creating Islands of
Environmental Excellence in a Sea
of Dirt?***

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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) which constitutes the mere existence of TNCs and enables 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 (HQ). The study finds significant evidence that environmental management at TNC-affiliated units in India are strongly influenced by their parent's policies and standards. However, it is also found that there are often significant deviations from intentions and policy commitments stated at HQ for 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 count 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.

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) which constitutes the mere existence of TNCs and enables 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 (HQ).

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 by both the general public and regulatory authorities. Many TNCs 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). As a result popular mobilization against numerous TNC projects was triggered (Lepkowski 1987). Negative public 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 (Jha & Lal 1999).

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 this paper looks at is current management challenges and dilemmas for TNCs operating pollution-intensive 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 efficiently managed, both economically and environmentally, has not been equally dealt with (Murti 1997). Thus, there is a need to strengthen the focus on environmental management.

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 needs of TNCs for local adaptation of technologies, processes and products, and partly by 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 TNC affiliates a function of HQ environmental policy and practices?

HQ involvement in affiliate environmental management will be hereafter labelled '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 the growing need of TNCs to co-ordinate and integrate their global assets. Inflows of FDI strengthen 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 (Dunning 1988). 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 approaching new and older FDI projects with an objective to strengthen the co-ordination and collaboration of global corporate activities (UNCTAD 1993a, Dicken 1998). Cross-border management concerns are put more centrally on the corporate agenda. The location-specific advantages initially motivating the FDI decisions still prevail, but these concerns are increasingly supplemented by the need to balance global policy co-ordination and local commercial adaptation. The major objective of this study is to extend this into the area of environmental management.

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 implications for environmental protection in India. These 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 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 and detailed case studies. Through evaluating 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 draw from specific case studies of a number of those 53 benchmarked TNCs.

The research design aims to analyse the environmental practices of European TNCs, in particular Danish and German TNCs. As a result, 60 per cent of the respondents are from Europe. Twenty-seven per cent of the evaluated TNCs have their corporate headquarters located in the US. The rest are distributed between Japan (4 per cent) and rest of Asia (9 per cent).

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

In terms of size, the majority (53 per cent) 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 evaluated TNCs currently hold minority equity shares in the affiliated Indian units. This is directly related to radical changes in economic policies, which took place at the beginning of the 1990s.

Due to severe balance of payment problems combined with increasing foreign debt commitments, a more liberal investment regime was launched in 1991 (Kapila 1997). The TNCs responded quickly, not only by increasing FDI inflows to India (Jha 1999), but also by increasing ownership shares in older projects. Currently, half of the TNCs have a slight majority share between 50 and 60 per cent. However, only 22 per cent have equity shares between 60 and 99 per cent, and only 16 per cent of the plants in the sample are wholly owned subsidiaries.

As many as a quarter of the benchmarked TNCs own Indian factories that are more than 25 years old, and approximately 60 per cent of the factories were established before 1991. Due to the new economic policy, however, FDI inflows are growing. This is reflected in the sample, as a quarter of the TNCs studied established Indian affiliates between 1991 and 1995.

Quite surprisingly our findings show that none of the sample firms located 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. Export-oriented investments, however, have risen sharply in recent years. The dominant motive driving the TNCs to locate FDI projects in India is the perceived commercial opportunities of potential and actual Indian markets.

The survey focuses on FDI projects in Delhi and, in particular Maharashtra, as these states remain the major recipients. From August 1991 to January 1997 a total of 458 approvals, with a value representing 17.1 per cent of the total approved FDI, were located in Delhi. The second largest recipient measured as a 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 the relatively smaller size of each project. The state of Maharashtra is the largest receiver of manufacturing FDI projects in India

1.2 Outline of the paper

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 kinds of measures are actually 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 the environmental conduct of TNCs in India are drawn.

2 THE STATE OF ENVIRONMENTAL MANAGEMENT

In this section we will outline the managerial and technological solutions implemented at affiliated TNC units in India.

2.1 Environmental measures taken at TNC plants

Although only a few of the TNCs studied had imported state-of-the-art environmental control equipment, various state-of-the-art procedures were observed as processing technologies had been 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 the installation of incineration plants. In other cases, processing water was recycled and reused after treatment. But there are few examples of production technologies being entirely replaced to enhance environmental improvements. In general, however, TNCs remain reluctant to discontinue units that provide positive contributions to corporate profits. Retrofitting and upgrading appear to be preferred, rather than total replacement. Consequently a large proportion of the pollution abatement technologies remains old, although modified, but protective measures are taken at most examined facilities.

Annual reports state that specific environmental measures are implemented in full accordance with the requirements of regulatory authorities and the expectation of the public. This is at least the case for home country operations. When it comes to India, an increasing number of TNCs have developed local environmental policies, specifically designed for Indian operations. Of the 53 TNCs included, as many as 78 per cent responded positively to whether a local environmental policy was developed.

While most of the evaluated TNCs have established environmental policies, there is also the impression that there is still some work to be done when it comes to public statements 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 to prepare 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. Rather, he argued that the new US owner carried these out to accommodate benchmarking and control efforts.

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. A variety of monitoring and measuring exercises is continuously or periodically implemented to control environmental performance. Procedures are institutionalised to train in-house personnel to comprehend and manage the pollution-control technologies installed. A designated environmental (safety and

health) officer was, in 74 per cent of the cases, appointed to be in charge of environmental emission controls, and formal operating procedures are established.

The survey examined to what extent the environmental management system had been verified by a certification agency. Within the benchmarked sample, only 17 per cent of TNCs had achieved environmental management system certification in accordance with the ISO 14000 series. According to statements, an additional 30 per cent of the TNCs studied consider doing so, but currently a significant majority of the sample firms have not sought external certification of environmental management efforts.

2.2 The degree of formalized cross-border environmental control from HQ

When 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 were found to be 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 improvements at local affiliated plants.

2.2.1 Environmental policies, environmental standards, environmental guidelines?

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 HQ were observed. According to the evaluation, as many as 38 affiliates had environmental policies formulated by HQ. In line with this, in several of the TNCs more carefully studied, there were no attempts to make these commitments more specific for Indian conditions. Statements originally designed for US or European operations were transferred to local operations even in situations where the characteristics of local operations differed significantly from home country operations.

Around 50 per cent of the affiliates reported that HQ sets specific environmental standards. According to specified guidelines developed by one of the sample TNCs, all units should 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 were developed. If the unit complies with the standards by other means, this is acceptable. But in case of local deviations below mandatory corporate standards, guidelines become compulsory. Another mandatory TNC standard set by HQ is related to environmental impact assessments (EIA). At one particular plant, specific environmental assessments must be taken into account, but not be limited to solid, liquid and gaseous wastes produced.

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

Among the TNCs studied, the explicit enforcement of environmental standards varies, but a large majority of the evaluated TNCs do have institutionalised procedures of environmental management control by corporate headquarters of current Indian activities. Seventy-three per cent out of the 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 evaluated have formalized environmental reporting systems between headquarters and affiliates. The cross-border control efforts vary, however, depending on the issues in question.

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 happened despite the fact that serious environmental problems were documented at the plant. Furthermore, there was no feedback and no recommendations for improvement. The only outcome was a continued evaluation of current environmental performance, which had to be improved. Apparently, environmental control is not always accompanied by 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 were organized under regional or global business units. The Indian activities organized regionally were subject to audits co-ordinated from 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 those integrated in transnational global networks. Such a dual track approach can obviously create confusion, particularly at local affiliates. In spite of this, environmental auditing procedures normally appear to impact local activities, as local managers are reminded of the status of local performance compared to specific, prevailing corporate standards, and are given an opportunity to compare the performance of their unit with other units in the corporate network.

2.2.3 Cross-border environmental management - more than control?

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 an 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.

In one case involving a US TNC, corporate headquarters had developed a specific, computer based reporting system, which functioned both 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. Interestingly, the use of on-line reporting created a more integrated, standardized management system. At the same time, local managers were entrusted with more reporting responsibility. Corporate HQ remained in control, but responsibility was delegated.

2.3 Environmental relations beyond company borders

In OECD countries, industry representatives and business groups often point 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. However, we did not find much evidence that this is actually taking place in India. The evaluation gave a clear indication that relatively few of the TNCs studied actually took extensive initiatives beyond formal equity interests. Although several specific projects like funding of local schools, roads, parks and neighbourhood organizations are referred to by managers, more long-lasting relations with external stakeholders to improve the environment were rarely identified.

2.3.1 Environmental control of activities beyond equity interests?

Concerning the environmental control of suppliers, this appeared more evolved when referring to suppliers providing raw materials, equipment and services. Thirty-eight per cent reported efforts to screen environmental performance of suppliers or sub-contractors. However, only in very few cases did TNCs take the effort to actually monitor suppliers, and this was limited to supplier activities creating direct risks for the TNC's own employees and/or products.

A related question is the out-sourcing of polluting activities to sub-contractors/toll manufacturers. This is a challenging question, as TNCs are rarely prepared to discuss such issues. Despite the fact that the TNCs studied generally assumed full environmental responsibility for current operations at plants with equity interests, there is little doubt that there are vast opportunities prevailing to out-source those activities which do not easily fit into the strengthened environmental strategy set by corporate headquarters. In one case, a large German TNC involved in dyestuff manufacturing changed its product portfolio through out-sourcing. As a direct function of import bans in Germany, this TNC changed the procurement policy in which all azo-dyes were to be phased out of the local production line. Consequently, this TNC is no longer involved in such hazardous manufacturing, it has become cleaner. However, the same TNC remains involved as a supplier of several production inputs enabling the manufacturing of identical dyestuffs.

Despite several publicized commitments to product stewardship and life-cycle management, the general observation is that these efforts are normally limited to those areas where the affiliated unit has formal equity interests.

2.3.2 Environmental relations to local communities

Among the evaluated TNCs, a quarter reported dialogue with local state pollution control boards in regard to standard setting and 13 per cent 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 per cent of the TNCs stated that they co-operate actively with local environmental NGOs. Even among some of these cases, the collaboration was often limited to the financial support of local welfare projects. Very few have established active dialogues with local or national environmental NGOs. Apparently a muted, withdrawn appearance, concentrating on keeping the in-house and back-yard clean beyond the scrutiny of external stakeholders, is preferred.

Thane Belapur Industrial Association (TBIA) organizes plants located along the Thane-Belapur road on the outskirts of Mumbai (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 associations like the India Chemical Industrial Association (ICMA). Perhaps it is no coincidence that those TNCs having documented advanced environmental progress were identical to those trying to impose equivalent environmental standards among ICMA members.

2.4 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 institutionalised environmental management systems, which include a more systematic approach to strengthen environmental protection through formalized performance standards, guidelines, and 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.

3 DETERMINANTS OF TNC ENVIRONMENTAL CONDUCT IN INDIA

To discuss the determinants of TNC environmental conduct in India, we will start with local forces, pressures and incentives of the Indian regulatory context. Then the focus is turned to pressures and incentives of the market, including global markets. Finally, we will direct the focus towards 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 in India due to perceived market opportunities there. 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. The section will subsequently focus on political and ideological factors affecting the environmental performance of the affiliates.

3.1.1 Institutional factors

Environmental authorities receive growing numbers of new applications for environmental licenses, both to obtain consent to establish an individual plant as well as the subsequent consent to operate it. However, administrative resources allocated to strengthen environmental governance remain limited. The outcome may be weak enforcement of environmental regulatory requirements. Pollution-intensive industrial growth is stimulated, but the actual regulatory capacity to handle current environmental challenges remains inadequate. In recent years legal, and in particular, judicial activism has forced state pollution boards to strengthen environmental controls (Jha 1999, Jha and Lal 1999). Specific polluting units are identified and, with explicit reference to court rulings, those 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. While affiliates generally reported good relations to local environmental authorities, a relatively large proportion of the TNCs (23 per cent) reported having a "problematic" relationship with local environmental authorities. This finding could be related to the above observation, that environmental regulation of industry in the wake of the Bhopal tragedy of 1984 is relatively antagonistic.

Beyond the general institutional context of environmental regulation, some of the companies were explicitly referring to weak patent protection, as a reason for neglecting to install the necessary pollution control measures equivalent to the home country. Pharmaceutical companies in particular stated this. As far as we could document, these

TNCs do not possess patents on processing systems. They do, however, 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 for other chemical products, we can more easily comprehend the argument.

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 and 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.

Currently there are few institutional barriers for strengthened imports of environmental technologies, and for certain industries these imports are even exempt from custom and tax duties. Despite changes in economic policies, history apparently counts.

3.1.2 Political and ideological factors

The Bhopal tragedy created a particularly difficult situation for TNCs operating within environmentally sensitive industries such as chemical manufacturing. Environmental problems created by industrial activity increasingly appeared on the political agenda. At the same time, economic nationalism created a generally hostile attitude towards foreign controlled activity, and the Union Carbide-caused chemical disaster fitted into a general "observation" that foreign economic agents were not wanted.

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 particularly the local village representatives did not believe that DuPont would create the environmentally sound project that was already approved by local and central authorities. Despite this, relatively few cases of judicial activism have actually involved TNCs (Jha and Lal 1999).

Being continuously scrutinized, TNCs face a challenging situation. As explained by several corporate informants, the only solution is to keep their plants clean and tidy, and it is a challenge 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 environmental friendliness of products and the company in general. It is striking that no similar campaigns are launched in India - at least not on the same scale. TNCs generally keep 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

To understand the actual dynamics influencing the environmental management of TNCs, it is important to distinguish between local and global market pressures.

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 household market, demanding cheaper and more general quality products. Products with a green premium are withheld, at least in the household market.

There might be a similar situation within the industrial market segment. However, industrial consumer preferences are changing as illustrated by the case of a manufacturer of brake linings. We found several examples where the industrial customer sets specific environmental standards on both intermediate and final products supplied. This is quite similar to the environmental supply-chain management that some of the TNCs studied, require their own up-stream suppliers to comply with. These requirements refer to both the raw materials procured and 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 indicates that local market structures rather seem to represent a barrier to strengthened local environmental management by TNCs.

3.2.2 Global market pressures

Several of the TNCs studied manufacture dyestuffs, which are often exported back to Europe. As local manufacturers, TNCs have traditionally focused 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. The case of the import ban on azo-dyes to Germany is an extreme one (Jha 1999).

There are examples of companies applying chemical inputs at Indian plants that 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.

What we have 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 previously 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 functions as a dynamic factor

within the Indian chemical industry because certain individual TNCs have taken a hegemonic role within the RCP in bringing the sector towards a heightened environmental awareness. It appears that it is a few individual firms, including some TNCs, rather than the sector associations that are actually setting environmental, health and safety measures on the industrial agenda.

The ISO 14000 series of environmental management standards is 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 of ISO 14000 and environmental management in general. According to the evaluation, approximately half of the TNCs have been or are considering seeking ISO 14000 certification. Local market pressures, however, may countervail these efforts.

3.3 Pressures and incentives of the corporate network

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

What are the reasons for this apparent strong influence of HQ? Traditional explanations 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 from India, but also through networks of corporate affiliations and transnational political campaigns. TNCs based either in the US or Europe are becoming increasingly scrutinized by stakeholders that are not only concerned with local issues. As illustrated by the Bhopal disaster, and perhaps even more vividly with the more recent case from Nigeria where Shell was criticized by numerous environmental and human rights activists, NGOs are capable of performing rather effective, worldwide campaigns. TNCs are aware of this and subsequently act 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 decision-makers as well. While the study has not focused specifically on this question, the concerns among local TNC managers expressed in interviews could suggest that reorientation among managers in corporations could be a contributing factor in explaining progress towards stricter environmental controls within the global corporate network.

One of the more surprising findings is related to pressures and incentives from HQ, which is not especially 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, either related to 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 that did not show any equivalent responsibility when it came to environmental issues and occupational hazards. We found indications that the culture of quality was basically driven by product orientation as this had a direct impact on market performance and the satisfaction of customers. The same customers do not always express equivalent concerns with

environmental issues, and the TNCs have consequently avoided these concerns. A striking example was found at a US TNC manufacturing pollution control equipment. At this factory, which was set up at the beginning of the 1990s, external emission standards were set in compliance with standards of local pollution control boards, but internal occupational standards, particularly those related to coating procedures, were not equally advanced. Knowing that this TNC created its competitive advantage by 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 per cent of the sample firms that still have a minority equity share. Among these seven TNCs, there are clear indications that environmental procedures are not integrated on a cross-border scale equal to those TNCs having majority interests.

Environmental control from corporate headquarters in particular seems to materialize 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 cultures of local adaptation. Among those TNCs with a prevailing engineering-based culture, there was 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

4 CONCLUSION

We found significant evidence of environmental management initiated at TNC-affiliated units in India, but often with significant deviations from intentions and policy commitments stated by corporate headquarters. Thus, institutional factors related to the intra-firm dynamics are significant, but still local factors count. Despite the fact 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.

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 on-site environmental auditing was conducted by corporate headquarters. Several TNC informants stated that increased internal controls functioned instrumentally to sustain higher environmental standards. 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.

Although most of the effluent treatment plants installed at TNCs are designed and procured through local suppliers, HQ is increasingly setting very specific formal standards on how hazardous wastes should be treated, possibly recycled or finally disposed of. However, the study indicates that Indian TNC units frequently fail to comply with these corporate environmental standards. Those TNCs having a cross-border environmental management system in place generally facilitate and enable local management to improve waste management procedures, particularly at the plant site.

Environmental management appears to be concentrated on plant-specific and equity-related activities. Despite the fact that as many as 38 per cent of the sample stated 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 had actually lost a contract regarding deliveries to TNCs due to environmental concerns stated by the TNC in question.

TNCs are to some extent setting specific minimum standards for suppliers and sub-contractors directly influencing their plant-specific activities, but when it comes to downstream activities and product stewardship, no documentation at all was provided. Many TNCs explicitly state that they strive to become the preferred suppliers to certain customers. If the customers don't care about the environment, why should the supplier?

The examples of waste management, supply-chain management and product stewardship give quite clear indications that local environmental management of TNCs operating in India focuses primarily 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 to combat industrial pollution and improve environmental management in India are inadequate. 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 requests 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 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?

4.1 Policy implications

Clear indications were found that global, more than local, markets influenced the environmental management of TNCs operating in India. But market forces as such showed significantly less influence 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 TNC equity interests. Environmental impacts on local economic agents are limited if not insignificant, perhaps with the exception of those becoming directly involved in TNC manufacturing activities such as on-site sub-contractors or 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. In particular the FDI projects, inaugurated in the wake of the new economic policies launched in 1991, suggest that state-of-the-art technologies, in terms of productivity, quality and environmental concerns, are frequently transferred to India. But even more important is the fact that environmental management at older plants is increasingly becoming subject to cross-border environmental control. The number of TNC plants in India being formally 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 the fact that the majority of TNCs studied have relatively new units, a significant number are still very old. As these units were set up during a time of radical performance requirements in terms of installed production capacity and local content specification, plants are not considered to be optimal either in terms of promoting economies of scale or 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, and despite the strengthened TNC efforts, it must be concluded as follows. 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 establish more direct and long-term contact with the local community and domestic industries. 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.

REFERENCES

- Brown, H. et al. 1993: *Corporate Environmentalism in a Global Economy: societal values in international technology transfer*. Conn: Quorum Books
- Dicken, P. 1998: *Global Shift. Transforming the Global Economy*, 3rd ed. London: Paul Chapman Publishing
- Dunning, J. H. 1988: *Explaining International Production*, London: Unwin Hyman
- Hansen, M. & A. Ruud. 1995: *Managing the environmental across borders*. Paper presented to the American Academy of Management annual meeting in Cincinnati, August 1996.
- Hansen, M. 1998: *Transnational Corporations in Sustainable Development. An appraisal of the environmental implications of foreign direct investment in less developed countries*. A PhD thesis submitted to the Department of intercultural communication and management, Copenhagen Business School, Ph.D.-series 3.98.
- Himmelberger, J. 1994: *Environment, Health and Safety at Third World Multinational Subsidiaries: The Role of Interactions between corporations and host countries*. Ph.D dissertation Clark University
- Jha, V. and Lal, P. 1999: *Judicial activism and the environment in India. Implications for transnational corporations*, Paper # 6 in the Cross Border Environmental Management Series, Copenhagen Business School and UNCTAD.
- Jha, V. 1999: *Investment liberalization and environmental protection*, Paper # 2 in the Cross Border Environmental Management Series, Copenhagen Business School in cooperation with UNCTAD.
- Kapila, U. ed. 1997: *Indian Economy since independence. A comprehensive and critical analysis of the Indian economy since independence: 1947-1997*, New Delhi: Academic Foundation.
- Lepkowski, W. 1987. "The disaster at Bhopal - Chemical Safety in the Third World". chapter 11 in Pearson ed. *Multinational Corporations, Environment and the Third World*. Durham: Duke University Press.
- Murti, M.N. 1997: *Integrating Environmental Considerations in Economic policy making: Institutional arrangements and mechanisms at national level in India*, A research project of Economic and Social Commission for Asia and the Pacific (ESCAP)
- Schmidheiny, S. 1992: *Changing Course. A Global Business Perspective on Development and the Environment*, London: MIT Press
- Shrivastava, P. 1987: *Managing industrial crises: lessons of Bhopal*, New Delhi: Vision Books
- UNCTAD 1993a: *World Investment Report. Transnational Corporations and Integrated International Production*, Geneva: United Nations
- UNCTAD 1993b: *Environmental Management in Transnational Corporations. Report on the Benchmark Corporate Environmental Survey*. New York: United Nations.