

GLOBALISATION AND SUSTAINABLE DEVELOPMENT - STARTING-POINTS FOR AN IMPROVED INTEGRATION OF ENVIRONMENTAL REQUIREMENTS INTO FOREIGN DIRECT INVESTMENT

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Table of contents

1. BACKGROUND OF THE PROJECT	3
2. THEORETICAL, EMPIRICAL AND METHODOLOGICAL FOUNDATIONS	3
2.1 Globalisation and foreign direct investment	3
2.2 The policy context.....	4
2.3 The strategies and behaviour of TNCs.....	4
2.4 The environmental impacts of FDI	5
2.5 Conclusions for the research project	5
3. CASE STUDY HIGHLIGHTS.....	6
3.1 BSH: Technology switch: from CFC to HC refrigerators.....	6
3.2 HMR: Responsible care and reputational risks as driving factors for EMS transfer.....	6
3.3 Adtranz: Indian Railways push technology transfer with Adtranz	6
3.4 Burgmann: High quality ensures environmental protection and technology transfer	7
4. KEY FINDINGS OF THE PROJECT.....	7
4.1 Globalisation is a driver for standardisation.....	7
4.2 TNCs organise their corporate environmental responsibilities internationally.....	7
4.3 Management commitment to environmental issues is essential; corporate values and training can greatly enhance this commitment.....	8
4.4 Environmental supply chain management is starting.....	8
4.5 TNCs' high reputational risk requires strict global standards	8
4.6 Global environmental transparency requires integration of TNCs' foreign subsidiaries into environmental reporting.....	8
4.7 Cost reduction is an important incentive for energy conservation.....	9
4.8 Public purchasing can play an important role in improving technology transfer	9
4.9 NGOs can initiate technology transfer	9
4.10 TNCs can be subject to more stringent enforcement of regulations than local companies	9
4.11 Summary	9
5. CONCLUSIONS AND RECOMMENDATIONS OF THE PROJECT	10
6. OUTLOOK – IN THE RUN-UP TO RIO PLUS 10	10

1. BACKGROUND OF THE PROJECT

The German Federal Ministry for the Environment and the German Federal Environmental Agency in co-operation with UNCTAD commissioned the Institute for Environmental Management and Business Administration at the EUROPEAN BUSINESS SCHOOL with the research project 'Globalisation and sustainable development – starting-points for an improved integration of environmental requirements into foreign direct investment' in August 1998.

The basic assumption is that foreign direct investment (FDI) can accelerate the diffusion of modern eco-efficient management know how, technologies and their spill-overs and thereby contribute to sustainable development.

The objective of the study is to identify starting-points for an improved integration of environmental requirements into FDI, from the perspective of German companies investing in developing countries.

The study especially aims to evaluate the critical success factors concerning: practices of environmental management and communication; and transfer and diffusion of eco-efficient technologies and management practices. Furthermore, recommendations regarding improved corporate environmental practices concerning FDI shall be provided.

To examine these questions – based on a review of previous theoretical and empirical work - four company level case studies have been carried out in co-operation with Adtranz DaimlerChrysler Rail Systems GmbH (Adtranz), Aventis Pharma AG (Aventis), BSH Bosch und Siemens Hausgeräte GmbH (BSH) and Burgmann Dichtungswerke GmbH & Co. KG (Burgmann). This report presents the results of the case studies as well as conclusions and recommendations concerning starting points for an improved integration of environmental aspects into foreign direct investment.

2. THEORETICAL, EMPIRICAL AND METHODOLOGICAL FOUNDATIONS

2.1 Globalisation and foreign direct investment

FDI is of special importance for developing countries. Although the most of worldwide FDI flows takes place between OECD countries, FDI has become the dominant part of capital flows to developing countries in the 90s. It can be safely stated that the further increase of FDI and its structure will shape the economies of developing countries to a large degree.

German firms are the third largest investors in developing countries. Therefore, they have an enormous potential to influence the economic and ecological performance in these countries – not only directly by using modern and environmentally friendly technology but also indirectly by giving examples that could be imitated by others.

2.2 The policy context

FDI takes place in an institutional context that influences its structure and effects. This context includes:

- international economic agreements and the plans for a multilateral agreement on investment: the current debate shows that international standardisation concerning the treatment of investments and further liberalisation (of FDI) is a top priority of the political agenda;
- international environmental agreements, especially the Montreal protocol (1987), the Basel convention (1989), the results of UN conference in Rio de Janeiro (1992) and the Kyoto protocol (1997).
- initiatives on environmental reporting and transparency: Transparency about the activities of companies – and transnational corporations (TNCs) in particular – has gained more and more importance and is part of some of the considered international environmental agreements. This trend is likely to accelerate in the future. Greater transparency about the activities of companies, and their environmental impacts in particular, can be seen as a chance for companies: by providing honest and complete information they can gain credibility and improve their dialogue with stakeholders and regulatory authorities. Several voluntary initiatives of business organisations aiming towards greater transparency show that these organisations have recognised the importance of this trend; an increasing number of companies is already acting according to one or more of these initiatives.
- the environmental policy in the home countries of TNCs and the host countries of FDI: A strict environmental policy in the home countries of TNCs can influence the environmental standards TNCs use in the host countries; furthermore, it can give the host countries of FDI valuable information about the conduct of environmental policy: These countries have often quite modern regulations but in some cases lack the capacity to enforce them. An exchange of experiences between industrialised and developing countries might also help improving the environmental performance of FDI.

2.3 The strategies and behaviour of TNCs

TNCs' behaviour has the most direct influence on the structure and effects of FDI. In the process of globalisation, FDI will remain an important (and increasing) part of companies' strategies.

In managing the environmental problems connected with their activities many corporations have introduced environmental management systems. Whether the introduction of those systems leads to a better environmental performance also in the host countries of FDI cannot be said a priori, but depends on the crucial question whether the TNC uses different standards in different countries or whether it uses an integrated cross border environmental management with company-wide standards regardless of the location of the plant. This decision of the TNC depends on a lot of factors which may vary from case to case. However, a new empirical study shows that, according to the affiliates of TNCs, the policy

of the company headquarter and the local regulatory environment are very important factors in influencing the environmental performance of TNCs and their affiliates.

Similar considerations apply to the transfer of technologies through TNCs. TNCs have to decide which technologies they choose: they can use modern (and environmentally friendly) technologies in the host countries or they can use older (and more pollution intensive) technologies. Although there is a lot to be said for using rather modern technologies it is not possible to draw a definite conclusion on this question as there do not exist many empirical studies.

2.4 The environmental impacts of FDI

The discussion about the environmental impacts of FDI has focussed on two inter-related questions:

- What is the impact of host country environmental standards on TNCs' investment decisions? In other words: Do developing countries have an incentive to create so-called 'pollution havens' in order to attract FDI?
- Countries compete internationally for FDI and try to deliver favourable conditions for companies. Does this lead to a competitive lowering of environmental standards ('race to the bottom')?

The evidence shows that most investment location decisions are not made on the basis of environmental criteria. Environmental costs are typically a small element in these decisions.

Overall, therefore, there is not much empirical evidence of 'pollution havens' affecting either FDI or trade flows on a systematic basis. If anything, the imposition of higher environmental standards seems more likely to generate a technological response, rather than leading to capital flights.

2.5 Conclusions for the research project

The structure and effects of FDI depend on a lot of economic and institutional factors. Concerning the environmental effects of FDI, previous research mainly focus on the question whether low environmental regulations in the host countries provide an incentive for FDI. For most companies and industries, (lower) environmental standards are not a relevant factor in the site-selection process.

Fears that today the site competition FDI in general leads to a 'race to the bottom' or a general lowering of environmental standards in the FDI host countries cannot be supported by the empirical studies. However, the empirical findings do *not* prove either that FDI necessarily leads to a transfer and diffusion of modern 'clean' technologies. Regarding this problem the results of the studies were inconclusive.

The ways in which technology is spread in the host countries through FDI are diverse and depend on several factors which differ from company to company and from country to country. In order to draw valid conclusions about the critical factors influencing FDI and to give recommendations as to how its environmental and technological effects are shaped, it

is necessary to investigate several FDI cases in detail. For this reason, the research questions are addressed by a case study approach so that all possible effects of FDI might be taken into account. Using company-level case studies in selected industries and selected countries, the contribution of FDI to sustainable development is analysed.

In the case studies the hypothesis was further evaluated that FDI can accelerate the diffusion of modern eco-efficient management know-how, technologies and their spill-overs and thereby contribute to sustainable development.

3. CASE STUDY HIGHLIGHTS

Four company level case studies using a multi-stakeholder approach have been carried out together with German TNCs and partner institutes in China, India and Malaysia.

3.1 BSH: Technology switch: from CFC to HC refrigerators

BSH Bosch und Siemens Hausgeräte GmbH (BSH) recently switched from chlorofluorocarbons (CFC) to hydrocarbons (HC) refrigerators worldwide. Greenpeace was an important external driver of this change. BSH successfully launched the HC-technology in China in early 1999. In the wake of this development some of BSH's Chinese competitors have changed their production partly and now offer the HC-technology as well.

3.2 HMR: Responsible care and reputational risks as driving factors for EMS transfer

The reputation and the success of pharmaceutical corporations depend, among other things, on continuous improvements in health, safety and environmental issues. Therefore Hoechst Marion Roussel (HMR) has developed a worldwide environmental management system (EMS) to meet highest expectations. In addition, in order to ensure adherence to high quality and environmental standards, HMR has specifies suppliers for key products, whereas for other products the regulations of the pharmaceutical industry are stringent enough. Major suppliers are audited frequently by HMR.

3.3 Adtranz: Indian Railways push technology transfer with Adtranz

In order to facilitate the transfer and dissemination of a new eco-efficient railway-technology, Indian Railways (IR) negotiated a unique and unconventional transfer of technology with Adtranz DaimlerChrysler Rail Systems GmbH (Adtranz). IR bought the technology and licensed several Indian companies to produce the new technology or components for this technology and thereby installed a supply oligopoly. One of these Indian companies is Adtranz India.

3.4 Burgmann: High quality ensures environmental protection and technology transfer

Burgmann Dichtungswerke GmbH & Co. KG (Burgmann) has implemented very strong quality standards in Germany and in the host countries. Furthermore, the company expects their suppliers to implement these standards as well because the quality of the seals depends also on the quality of the supplied goods. High quality seals contribute not only to direct environmental protection but also to reduction of energy and resource consumption.

4. KEY FINDINGS OF THE PROJECT

4.1 Globalisation is a driver for standardisation

Due to the TNCs' strategies to rationalise development and production and due to a further integration of markets, there is a tendency to increase standardisation: that means TNCs standardise products and processes worldwide and adapt them to suit local needs.

However, this trend does not necessarily apply to 'end-of-pipe technologies', as these are additional investments which are not automatically linked to the introduction of new processes and products.

All in all, this shows that globalisation strategies and technology trends can support technology transfer through FDI. TNCs' overall technology- and product-strategies and the degree of innovation, especially with respect to 'integrated technologies', is critical to the relevance of this trend.

4.2 TNCs organise their corporate environmental responsibilities internationally

All TNCs involved in the case studies have organised their international environmental management, defining responsibilities, management processes and standards and reporting procedures etc. worldwide. Through these international systems or networks, TNCs push the transfer of management know-how to foreign subsidiaries.

The degree of international centralisation relates to management responsibilities for investments, technology decisions, compliance etc. The environmental standards differ in the scope of the aspects covered and the degree of specification. Some of the standards are pure management standards, some are technical specifications and others are material-selection or emission standards.

While it appears to be 'best practice' to organise corporate environmental responsibilities and reporting systems internationally there is not one overall best practice on *how* international environmental management is to be organised.

The observed management practices show that TNCs increasingly work on international transparency within their companies and managing their environmental responsibilities

globally. This helps to transfer good management practices and environmentally-sound technologies through FDI.

4.3 Management commitment to environmental issues is essential; corporate values and training can greatly enhance this commitment

Implementing environmental management procedures on an international level is not always a straight forward process. The successful implementation of EMS depends on its consistency with the overriding corporate values. If the conflicts of interests and the obstacles which occur during daily operations are to be overcome, then the top management's commitment in both host and home country is crucial.

4.4 Environmental supply chain management is starting

Traditionally, management requirements along the supply chain were strongly related to quality issues. All TNCs have ongoing training and auditing processes for their suppliers. Especially in sectors where the final product is subject to high technical requirements, the quality of the supplied goods is extremely important.

So far TNCs have just started to work in this direction and they agree that environmental supply chain management is an important trend and a challenge which could have an enormous impact. A critical factor for the successful integration of environmental requirements into specifications for the suppliers will be whether this will lead to cost reductions and/or whether the market will honour the improved overall environmental efficiency.

4.5 TNCs' high reputational risk requires strict global standards

TNCs are expected to operate to high environmental standards worldwide. They are subject to close scrutiny by the international public and Non Governmental Organisations (NGOs) and are permanently exposed to high reputational risks. The magnitude of the reputational risks seems to be a driving factor for the standards defined. The compliance with national standards of host countries is only the minimum requirement. In practice, operations will have to comply with the TNCs' global standards which are generally stricter than the local regulations. Depending on the degree of specifications, each TNCs' standard will be interpreted by the subsidiaries and the management in charge to suit the specific local situation and requirements.

4.6 Global environmental transparency requires integration of TNCs' foreign subsidiaries into environmental reporting

In order to document their efforts, TNCs increasingly tend to integrate their foreign subsidiaries' environmental aspects and environmental performance into their international corporate reporting.

4.7 Cost reduction is an important incentive for energy conservation

Due to high energy costs or unreliable supplies, energy conservation is one of the main environmental issues for companies operating in newly-industrialised or developing countries. It seems to be an important customer requirement, too. The transfer of energy-efficient technologies (and identically, also for consumer products) has therefore been particularly successful.

4.8 Public purchasing can play an important role in improving technology transfer

By setting environmental requirements, public authorities can use their purchasing power to transfer environmentally-sound technologies into their country. Even more so, they can induce the diffusion of technologies by buying licenses and/or intellectual property rights for environmentally-sound technologies, thus making them accessible to the local industry.

4.9 NGOs can initiate technology transfer

This shows that NGOs - especially international NGOs and those which have technological competence - can have a huge impact on technology transfer and diffusion. Due to NGOs' activities, corporations may change their technologies and implement environmentally-sound technologies.

4.10 TNCs can be subject to more stringent enforcement of regulations than local companies

It appears that in some cases TNCs and their compliance with regulations are subject to very keen observation by the authorities. This could be due to two reasons: Firstly, TNCs are often comparatively large companies; secondly, they are foreign companies. Local environmental authorities seem to enforce TNCs' compliance with regulations more strictly than that of local, especially small, competitors.

4.11 Summary

These findings show that there are important drivers for eco-efficiency influencing the performance of FDI. Globalisation can be a driver for eco-efficiency in the industrial sector. Additional external drivers are: market opportunities, stringent enforcement of environmental regulations, energy prices, and reputational risks. Additional internal drivers are cost savings and a change of management attitudes both in the headquarters and the host countries.

As important general best-practices the following measurements can be defined: international co-ordination of environmental responsibilities, definition of worldwide environmental (management) standards, external or internal audits, dissemination of up-to-

date eco-efficient technologies and good management practices along the supply chains and integration of foreign activities into environmental reporting.

The diffusion of eco-efficient technologies to competitors in host countries can be an important side effect of FDI.

5. CONCLUSIONS AND RECOMMENDATIONS OF THE PROJECT

The study doesn't give an answer to the question whether in general FDI is a lever for eco-efficiency or contributes to sustainable development.

Therefore it certainly is difficult to build recommendations on four company level case studies. Of course, further empirical research is needed to corroborate the conclusions. But nevertheless, the case studies hint at two main starting points for the improved integration of environmental aspects into FDI: corporate environmental reporting and greening of the supply chain.

The improvement of the global environmental transparency, especially through global environmental reporting of TNCs in the host countries, can lead to the dissemination of environmentally-sound management practices and technologies into the FDI host countries. Environmental transparency, plays an important role in increasing access to technology and knowledge and improving both the companies' environmental performance and reputation. This could inspire other companies to follow their example. FDI can thereby have positive environmental impacts and effects.

The integration of environmental aspects and performance indicators into purchasing specifications can be an important driver for environmental improvements along the supply chain. The strong environmental policy of companies contribute to their environmental credibility. Thus their environmental policy has model character and support the transfer of know-how and initiate technology transfer and dissemination.

The enforcement of these two drivers certainly is a challenge for both TNCs and host countries. Therefore the implementation of measures which could help to use these drivers have to be designed with respect to different needs and interests.

6. OUTLOOK – IN THE RUN-UP TO RIO PLUS 10

In 2002, politics and business will (be) ask(ed) which of the objectives from the Agenda 21 have been achieved. TNCs and governments will have to report on their measures and programs to reach these objectives.

In addition, it is to settle to which extent FDI and trade liberalisation contribute or can contribute to sustainable development and to which extent this contribution supports the implementation of multilateral environmental agreements.

It is planned to create a network of institutes to carry out research on FDI, global supply chain management, eco-efficiency and sustainable development.

This network of research institutes will, inter alia,

- carry out further company and sector level case studies,
- support the dialogue between the participating countries and institutions,
- encourage TNCs to improve the transparency of their global activities concerning their environmental performance and sustainability,
- identify best practices and critical success factors,
- increase transparency,
- accelerate the transfer of technology and know-how along the supply chain,
- investigate the efficacy of specific best practice guidelines and develop them further.

Many international organisations (e.g. UNCTAD, WTO, EU) consider the improvement of transparency and such company and sector level case studies in particular to be very important in order to continue the international dialogue on globalisation and sustainability in a systematic and results-orientated way, especially after the WTO failed in Seattle.