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SUCCESSFUL ENVIRONMENTAL MANAGEMENT IN EUROPEAN COMPANIES.

SUMMARY FINAL REPORT

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I. OBJECTIVES :

This research investigated exemplary cases of successful environmental management in European companies in order to point out the reasons and dynamics underlying them and the role environmental policy played and could play in this respect.
The basic orientation of the comparative research project can be summarised in the following research questions:
1. What are real substantive cases of successful innovative environmental protection in companies ?

2. What are the influencing factors and determinants of these innovative success stories?
3. How can environmental policy support these influencing factors?
4. What distinguishes the investigated case studies of innovative environmental management from other (ordinary) cases of successful environmental protection?
According to the basic socio-structural differences between West and East European countries the respective case studies were dealt with in two groups which cannot be simply compared on a common evaluative basis.

II. METHODOLOGY

The project combined the case study method and comparative policy analysis. Nine empirical case studies referred to various Danish, Dutch, German and Swiss companies of different size and from different industrial branches within the social context of relatively advanced Western industrialised countries. Three case studies traced environmental improvements in Polish and in Latvian companies, respectively, under quite different socio-political conditions of East European societies in transition, supplemented by an inventory of the role of environmental protection in Latvian industries with significant environmental impacts. The case studies described the social processes leading to substantive environmental achievements and corresponding environmental management systems. They pointed out the variety of specific formal, organisational, economic and political mechanisms which may lead to such improvements, the interplay of internal and external determinants of companies' behaviour, and the general characteristics of processes leading to improved environmental management, as far as they can be deduced from these and similar case studies. The case studies were carried out in 1993/94 on the basis of a common analytical framework with the help of extensive interviews with the main actors involved in the success story and of related documents and literature.

Essential background knowledge about successful environmental policy was compiled by 24 cases of (policy-related) successful environmental protection presented at an international conference during the beginning of the project. The function of this first step of the project was to indicate general conditions and influences relevant for environmental improvements in advanced industrialised countries on the basis of clear concepts evaluating 'success' or 'failure' in environmental policy and management, and to get background information about a broad variety of environmental policy and management achievements. These 24 case studies pointed to the eminent importance of the interaction dynamics within the actor constellation, the high significance of regulatory command-and-control policy, the need for appropriate mixes of policy instruments applied according to structural framework conditions and situational context, and the importance of public awareness or even direct public pressure for successful environmental policy action.

The particular case studies addressed the following processes of improved environmental protection by companies:
1. Optimisation of the ecologically and economically favourable reduction of water, energy, and chemicals in washing returnable bottles in the medium-sized German Amecke Fruchtsaft fruit beverage producer;
2. The recycling of paint sludge and the reduction and substitution of harmful compounds in the medium-sized German paint manufacturer Diessner Farben und Lacke;
3. The development and introduction of water-based and low-organic solvent paints on big steel constructions in the medium-sized Danish company ABC Coating, which coats steel constructions;
4. The multiple reduction of environmental burdens in glass wool production and the establishment of an eco-accounting and auditing scheme in the medium-sized Danish company Glasuld, (a subsidiary of the French Saint Gobain Group); producing glass wool
5. The ecological reorientation of the large German retailer Hertie with corresponding check-out of its assortment of goods;
6. The establishment of a comprehensive eco-accounting system in the large German textile company Kunert;
7. The efforts towards environmentally conscious design in the engineering and design department of the Dutch automobile company NedCar;
8. The installation of a rather comprehensive environmental management system in the large European company General Electric Plastics Europe (a subsidiary of the American General Electric Company) with its headquarters in the Netherlands;
9. Improvements in environmental protection and attributes of the comprehensive environmental management system of the large Swiss chemical company Ciba;
10. Utilisation of cleaner technology in the Polish chipboard mill in Grajewo by reducing emissions, sewage treatment and recycling chemicals;
11. Improvements in technology and equipment of the Polish Kujawy vegetable fat factory in Kruszwica concerning seed extraction and refinery;
12. Environmental improvements in the Polish fishery and fishing service company Szkuner in Wladyslawowo concerning processing technology, waste management and energy management;
13. The waste minimisation programme of the Latvian chemical company Dautekss;
14. Environmental management efforts of the Latvian pharmaceutical company Grindex;

15. Environmental protection and increased energy efficiency in local heat supply by the new Latvian Malpils boiler house, a gift of the Danish government.

The comparative evaluation of the nine West European case studies pointed out typical as well as varying actors and structures behind the success stories investigated. An analytical framework with five different dimensions was utilised to trace the interaction dynamics leading to successful environmental management. There was an extended two-dimensional model of the sociosphere, a set of various classes of environmental management determinants, five different competitive forces determining industry competition, analytically distinct primary (performative) and secondary (supportive) environmental management activities/fields of a company, and an ecological stress matrix indicating different environmental impacts of the whole cradle-to-grave value chain.

III. MAIN RESULTS

The main results of the (West European) case study investigations can be condensed to the following conclusions:
1. Under circumstances of (radical) change, competent motivated individuals play a key role to initiate and effect this change, whereas institutionalised provisions may substitute this precondition later on.
2. As would be expected, the prominent role of key individuals is especially significant in the smaller companies studied.
3. Typically, the bigger companies having continuous working relations with public authorities emphasise communication policy in environmental affairs.
4. The main actors involved in successful environmental management tend to belong to the upper management levels of the company and of cooperating organisations, such as suppliers or public authorities. Although the shop floor finally has to implement environmental management concepts in everyday working practice, employees on this level at least get training in environmental management practices, but hardly have any influence on general decision-making in this respect.
5. Cooperation within and between companies matters in environmental management. However the type of actors collaborating to achieve substantive environmental improvements varies considerably from essentially company internal actors only (Diessner) over common projects with one or two other companies (Amecke Fruchtsaft, NedCar) to joint ventures with public institutions and environmental consultants, including environmental organisations (Hertie, ABC Coating, Glasuld).
6. When good profits are being made, available financial resources allowed for some attempts to sell environmentally friendly products or additional environmental investments which were earlier on not profitable and implied economic losses.
7. On a general abstract level, the initiating events and starting points to improve the company's environmental management were always negative ones aiming at avoiding certain effects, but they differed with respect to their internal or external causation. Sometimes the conditions triggering environmental management efforts are due to competitive strategy considerations (cost reduction, environmentally oriented consumer demand), sometimes they are due to the negative consequences and scandals resulting from (illegal) environmental effects of production processes or products (ABC Coating, Glasuld, GEP).
8. Compared with other investigations of environmental management, there are no marked characteristics distinguishing these cases from others. By the selection criteria chosen, the (West European) case studies are by definition success stories and therefore mark a certain terrain of favourable factor constellations, for instance an environmentally oriented corporate policy and engaged management. However, the development path followed by these companies is in principle open to most other companies, too.

In general abstract terms, one may conclude:

1. Overall, successful (innovative) environmental management depends on the positive interplay of company internal and external determinants leading to the technical, organisational, socio-economic and cultural encroachment of environmental management efforts, thus generating a self-supporting interaction dynamics towards substantive environmental protection. Therefore, successful innovative environmental management demands a systemic evolutionary reticulate perspective, which avoids single unilinear causal models and interpretations.
2. The specific configuration of substantive influencing factors explaining individual success stories is particular for each case, allowing little generalisation.
3. Some communality is given by the preponderance of economically profitable environmental management by the limited number of individual (10 - 20) and organisation (1 - 5) actors usually involved, and, with the exception of the Danish case studies, by the minor significance of public environmental policy for innovative environmental management.
4. Environmental policy appears to be more important for the subsequent diffusion of examples of innovative environmental management than for their occurrence itself.

5. Initial experiences of success, the availability of resources, strategic action and cooperation of the actors seem to be a necessary condition for successful environmental management.
6. As known from general social and organisation theory, a company is an open system which has to be innovative to develop a high degree of resilience via flexibility in its situative actions and its adaptation and learning capabilities in order to cope with increasingly varying contextual conditions generating uncertainty. This open, innovative perspective is a more challenging, overall more promising but also more risky corporate policy than to rely on the relatively comfortable and secure scope of corporate action prestructured and delimited by bureaucratic environmental policy. However, taking an innovative stance is not simple and easy, since growing competitive pressures already confront firms with a lot of uncertainty and to inclusion of environmental criteria in strategic considerations can add uncertainty and complexity. Moreover, some global business trends, such as shorter production life cycles and smaller production series, are not easily compatible with environmental requirements. Therefore, successful environmental management requires rather comprehensive, systematic, resource demanding and long-term concerted corporate action addressing the various levels, functions, and groups of a company and taking into account the whole life cycle of its products.

The Polish and Latvian case studies clearly pointed to the enormous importance of the wider social context significantly differing from that of the West European companies investigated. Historical tradition hamper environmental management. Such tradition includes the following elements : lacking institutional differentiation between the spheres of economic production and (environmental) political regulation, lacking implementation of formal environmental standards, hardly any established bargaining system about environmental affairs with strong actors on the ecological ‘ side, missing financial resources of recently privatised companies, only few past investments in and experiences with (advanced) environmental technology, and uncertain future development of public regulations, enforcement and economic competitiveness. So, in spite of environmental policy programmes pushing stricter emission standards, better environmental control and inspection, and levies on polluting discharges, established in the 1990s, these are not yet common practice. Therefore companies are forced to adapt to such policy programmes, but frequently lack the economic and manpower resources, the corporate culture, education and know-how to do so. Nevertheless, major (basic) environmental improvements are often rapidly achievable due to the environmentally detrimental technologies and practices prevailing in the past. Missing environmental policy priorities, programmes and enforcement still seem to undermine the existing environmental regulations and institutions more in Latvia than in Poland. The case studies demonstrate the feasibility but also the low probability of successful environmental management in these East European countries and thus the tremendous importance of situational and personal determinants in favour of such efforts. Whereas companies in Western Europe formally have considerable scope of action in their environmental management efforts to go beyond the existing system of public environmental standards and regulations, (taking into account their know-how, their resources and the frequently still available potential of economically beneficial environmental improvements), companies in Eastern Europe formally have an even larger scope of action for successful environmental management because of lacking still emerging environmental policy and worse environmental pollution, but they lack the necessary socio-economic and -cultural resources to act accordingly.

IV SCIENTIFIC INTEREST AND POLICY RELEVANCE

The research indicated that environmental policy in favour of corporate environmental management for structural reasons has to primarily start on a meta-level of providing appropriate boundary conditions a push-and-pull strategy with an increasingly cooperative besides a command-and-control orientation Without such a favourable push-and-pull dynamics, optimal task orientation and fulfilment by one social actor or subsystem disposing of sufficient resources will not lead to the solution of a general social problem, such as ecological sustainability. Thus public environmental policy is but one component in the total interplay of factors such as public pressure, legal prescriptions, cost pressure, changes in perception, corporate commitment, reorganisation and self-development efforts leading to the diffusion of improved environmental management. Without appropriate legal and economic framework conditions to be set by environmental policy, industrial corporations have insufficient possibilities of effective environmental management not undermining their competitiveness and profitability. So, public and private environmental action may not be opposed to each other; instead, each social actor has to play his part if effective environmental protection or even more sustainable ecological development shall be achieved.

Environmental policy recommendations can be formulated on the basis of the research findings. These recommendations relate to providing adequate framework conditions that facilitate corporate environmental management and address the following elements :
1. gaining political and technical in-house capacity and competence in environmental policy programmes embedding environmental management in a sustainable economy perspective, with an environmental policy orientation towards sustainable development instead of regulations favouring end-of-pipe technologies,
2. striving for internal consistency and reliability of environmental policy, particularly in coordination with other, often opposing policies,

3. conceiving industrial corporations as (in the last resort) cooperative actors with their own legitimate interests, when aiming at improving the environment and sustainable development,
4. favouring contextual policy steering by attempting to install ecologically beneficial legal and economic framework conditions,
5. helping to generate actor networks capable to coordinate and organise rather comprehensive (cradle-to-grave) environmental management systems,
6. providing valuable information and well-targeted subsidies for environmental management efforts of (small and medium-sized) companies,
7. allowing for flexible decentralised organisation of concrete environmental management measures and programmes,
8. combining this cooperative approach to support the diffusion and improvement of (industrial) environmental management with rather stringent and enforceable environmental regulations as its necessary backbone, supported by the strategic use of prospective intervention, which gives industrial corporations the time to adapt to clearly foreseeable environment-related rules and standards.

If environmental policy follows certain administrative requirements (such as separation of monitoring and administrative action, separation of program formulation and implementation, intrapolicy cooperation transcending ecological media, interpolicy cooperation linking environmental authorities with other environmentally relevant authorities, regionalized enforcement, personnel education), then it will probably contribute most to improve environmental management and protection in society. In addition, such an environmental policy should be able to improve environmental management within public institutions themselves where it has easier access, and can demonstrate by positive examples the social (and economic) viability of environmental protection measures.

EU environmental policy is particularly dependent on such a policy orientation because of its even more limited (compared to national environmental policies) political resources and power to make its many directives actually work. So its main efforts to improve environmental management should be oriented towards communication, coordination, networking, besides strengthening harmonised environmental rules and standards. This demands competence in intrapolicy cooperation (communication with and coordination of various national environmental policies as well as different industries in their environmental management practices) and in interpolicy cooperation (internalisation of environmental concerns in other policies, especially economic, regional and agricultural policy).

With respect to East European countries, the strategy to provide targeted subsidies and to encourage collaboration and joint ventures with EU-located Western institutions, allowing a transfer of knowledge and resources supporting future self-organised environmental management of East European companies, has to be emphasised as a useful one.