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Chapter 7

Employee participation in environmental work in companies

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Introduction

In this text the term environmental work is preferred to the term environmental management to indicate that permanent changes in companies' environmental performance requires something more than a systematic and controlled effort from the top. The attention towards involving the employees in the environmental work can be traced back to the end of the 1980s. At this time it became generally acknowledged that the environmental efforts could not be limited to technical improvements in the form of pollution control or cleaner technology but needed organizational changes as well. Public concern and regulation had driven the environmental move in companies, but it was not from this part that the initiative to involve the employees came.

Employee participation more likely evolved from traditions of management-lead 'Human Resource Management' (HRM) or cooperation between the social partners already embedded in the companies' organisation. The forms of employee participation have been different in continental Northern Europe compared to the Anglo-Saxon area due to differences in industrial relations and management philosophies. American management philosophy and style have spread in Europe (Knudsen 1995), manifest in the dissemination of management systems for quality and environment (ISO 9000 and 14000 standards-series). But the traditions and institutions of cooperation between the social partners and the influence from institutional actors like trade unions have prevailed in Europe. Eventually in the 90s, when authorities in Europe spotted the potential of participation, initiatives were taken to prompt companies to involve employees as a means to 'root' the environmental work in companies and thus ensure continuous environmental progress.

Research has documented the effectiveness of participation to change the attitudes of the employees as well as build capacity for change in the companies' organisation, which is generally assumed pivotal to continuous environmental improvements. Furthermore, concrete results of participation in the form of improved environmental performance of companies have been empirically demonstrated. The issue has awaked interest among different research areas: business studies and management-oriented organisation theory, natural science-based environmental research and sociology-based working life research. The research findings, e.g. the demonstration of a close connection between employee involvement and the embedding of the environmental work in the companies' organisation as well as the existence of an employee resource for environmental innovation, are in the main concordant.

Nevertheless, one should be cautious about speaking of a general tendency towards employee participation in companies' environmental work. Especially, one must be careful about what is meant by participation or involvement. First, there is a clear tendency that companies dominated by Anglo-Saxon management style by participation primarily understand attitudinal formation and limited involvement of individual employees in a management-run initiative. Secondly, although the institutionalised cooperation between the social partners, typical to Northern Europe, has promoted a high level of representative participation this has not ensured shop floor-based or collective participation in the environmental work. Thirdly, as demonstrated by a number of development projects and experiments with direct and collective participation, when participation in environmental issues evolves it appears to trigger off processes of change and conflict, which the companies' organisations in general are not capable of containing.

In this chapter we shall look closer into the dynamics of employee participation, its forms, potential and preconditions. The presentation sets out to explain *the paradox* that although the significance of participation for the rooting and strengthening of the environmental efforts in companies has been clearly documented and is encouraged by external actors; the actual participation of employees seems subject to major limitations. The general increase in companies' awareness of the environment, indicated by the increasing number of ISO 14001-certificates, makes it even more surprising. On the other hand, this manifest preference of management systems to handle the environmental challenges may be part of the explanation. A clear indication of the paradox is the fact that a specific environmental training programme in the Danish vocational training system, developed by the Confederation of Danish Industries and supported by researchers from Aalborg University, is only used by a small number of companies today.

The overview intended in the chapter is partly founded on experiences and material from Denmark where both the extent of environmental work in companies and the character of industrial relations provide for optimal conditions of employee participation. The author's professional involvement in research and developments in companies as well as in institutional initiatives as an officer in 'SID', the Danish General Workers Union (GWU) colours the presentation. Furthermore, targeted research into the subject has been carried out in Denmark, including a series of 'intervention projects', where the researchers have taken part in experiments in companies. Experiences and research from other countries, especially Northern Europe and USA are, however, included.

Participation is the term commonly used to describe all forms of organisational initiative in companies aimed at some sort of sharing and cooperation between management and employees. It may be useful, however, to distinguish between *involvement* as a management-led initiative and *participation* as an initiative on the premises of the employees, allowing for their opinions and interests to unfold. In the text, moreover, a distinction between *individual* and *collective* participation as well as between *direct* and indirect or *representative* participation is used (Knudsen 1996).

Following this introduction the history of initiatives towards employee participation in companies and society is briefly presented. The growth of Environmental Management Systems (EMS) is discussed separately. Subsequently, an experience-based analysis of the different forms, potentials and preconditions of participation is presented. Finally, introducing a conceptual framework to grasp the organisational dynamics in companies, conclusions on the reasons for experienced barriers and failures in participative environmental work are drawn with a view to identifying the essential conditions for successful employee participation. In the succeeding chapter a particularly interesting example of employee participation in environmental work is presented.

Evolution of environmental work in companies and employee participation

To companies with a tradition of cooperation and participation, e.g. in development of technology, it was a natural thing to involve their employees in the transformation of production and work to achieve better environmental results. Scandinavian and continental Northern European management phi-

losophy contains many formal and informal elements of workers' participation (Knudsen 1995).

In the Anglo-Saxon area cooperation involving more than the single employee is rarer. Roelofs (1999) compares the different forms of environmental cooperation between the social partners in USA and Europe through the 90s and finds two clearly different approaches. The European approach is characterised by a "harmony" or "triple-win" approach favouring the company, the environment and the employees, where the American is marked by mistrust and reservation from both of the social partners. Green (1998) also finds clear differences in the cooperation between the social partners in a survey on the chemical industry's "Responsible Care Programme" with positive experiences concentrating in Northern Europe and Japan and negative experiences dominating in USA and Southern Europe.

In the EU-sponsored IRENE-project Gregory et al. (1999) examined case-studies of the social partners' cooperation on environmental issues in 10 European countries 1990-97 and identified two groups of countries. One Northern European, including Austria, characterised by a fairly high degree of cooperation and participation, and a Southern European, including Great Britain, without much of the same.

Especially the partial overlap with health and safety, including the opportunity for synergy effects, has made it obvious for companies to involve the employees in environmental efforts. In the work environment field the employees are automatically participants and in most countries have formal representation in the organisation of the health and safety work. A frontrunner move was taken by the industrial partners of the metal industry in Denmark in 1993 when they settled on the 'IMO agreement' merging the companies' environmental organisation with their health and safety organisation.

Surveys of Danish companies' implementation of environmental audit and management through the 90s indicate a high level of employee involvement and integration of environmental work with health and safety work (Christensen & Nielsen 1992, Christensen, Nielsen & Remmen 1999, Kvistgaard et al. 2001). On the face of it this is surprising considering the lack of attention from the part of the environmental 'establishment'. Obviously some internal traditions and dynamics have entered into force when the environmental work was integrated in the companies' organisation. It is, however, impossible from these surveys to assess the intensity and extension of the employee participation, in other words to determine if we have to do with involvement or participation.

In 1999 the GWU carried out a survey among shop stewards and safety reps in EMAS-registered companies (Hjorth 1999). Whereas participation of workers' reps was fairly high, only in half the companies front-line workers assisted in the environmental review. This indicates that the implementation of a management system is no guarantee of collective participation. Similar quantitative studies from other countries have not been available, but research in Europe confirms the tendency towards some environmental cooperation between the social partners in the companies (Gregory 1999, Oates 1993, Zwetsloot & Bos 1998). Especially, representative participation and direct, individual involvement in EMS implementation are reported.

In Denmark the authorities did not take any interest in the matter until the positive experiences from employee participation were communicated from companies and steps were taken by the social partners themselves, e.g. the creation of joint training programmes. Urged by academics and trade unions the Danish EPA initiated projects to assess the potential of participation. The findings and results from these entailed clear statements from the authorities on the importance of participation. In 1995 the act on Green Accounting was issued requiring employee participation, and when EU's directive on 'Integrated Pollution Prevention and Control' in 1999 was implemented in Denmark, companies became obliged to report on employee involvement in the environmental work.

In Sweden and Norway the formal influence of employees in the environmental work was systematised in the beginning of the 90s, when legislation on 'Internal control' of the environment together with the working environment was issued. In the Netherlands the employees' right to be consulted in environmental matters was made statutory in 1998. In a series of countries, including Germany and Spain, agreements between the social partners have been signed. In Great Britain there has been a focus on employee participation from the social partners but no general agreements have been entered (Roelofs 1999, Oates 1993). The efforts to create a furthering institutional framework were carried on to the EU-level and found a clear expression in the revised EMAS-regulation from 2001, which in contrast to the ISO 14001 standard emphasizes considerations of the working environment and requires "active" employee participation.

Environmental management systems and employee participation

EMS has found widespread attraction among companies in Denmark and elsewhere to meet and master environmental requirements and challenges. The goals of companies to incorporate environmental considerations and, at the same time, control the activities at managerial level coincided with the goals of authorities to root the environmental work in the companies' organisation.

Notably, the growth of EMS is connected with the increasingly market-based approach environmental politics has followed in the 90s in OECD-countries (Jamison 2001, Carter 2001). The implementation of EMS is an expression of companies' responsibility and readiness to self-regulation. But at the same time it signals the triumph of business' own approach to the solution of environmental problems in opposition to the influence of external forces such as public interest, green NGO's, environmental authorities, etc. It also indicates the success of the neoliberal approach to economic development dominant in Anglo-Saxon countries relative to the more state-based and social partners influenced approach dominant in continental Northern Europe concurrent with the growth of Anglo-Saxon management philosophy in European industry culture Knudsen 1995, Dalton 1998).

The question is here if the growth of EMS has meant a draw-back or an advantage to employee participation. Some researchers see the introduction of EMS as basically reasoned by requirements of control and efficiency and thereby *per se* hindering employee participation, (e.g. Lund 2002). The evidence of their argument, however, is based on few cases and can only confirm one tendency among others. Other cases show that EMS exists side by side with intensive employee participation (Lorentzen et al 1997, Christensen 1998). It seems that whether employee participation in the environmental work of a company is promoted or not is dependent of other features inherent in the company and its organisation than the mere existence of a management system. An argument that A. Kamp, indeed one of the authors Lund refers to, advocates (1997).

The research which is most closely associated with EMS, i.e. management-oriented organisation theory and business studies focusing on environmental work in companies (hereafter: management literature), actually more often than not advocate employee participation or involvement. In this literature there is a general emphasis on the need to combine environmental management with "*personnel management*" or HRM and to see the involvement of

employees as a *"strategic choice"* (Pollack 1996, Markey 2001). The efficiency of different management strategies and tools to promote involvement has been successfully tested (Milliman & Claire 1996, Ramus 2003, Klinkers & Nelissen 1995). The tendency in the literature to advocate involvement is evident and, according to Barrett and Murphy (1996), this nhas been the case since the HRM philosophy in the 80s focused on the importance of values and the organisational culture in companies: HRM and *'an enabling corporate culture'* are needed to make EMS work.

'Total Quality Management', including the environment and *'Environmental Re-engineering'* are concepts studied and encouraged inside this research tradition. Just like EMS they aim at improving the environmental performance in an efficient way in line with the core business goals of the company. It is generally emphasized that in order to be effective the environmental work must be rooted in the company's organisation and hence the employees involved. Front-line workers, furthermore, possess useful knowledge when it comes to improvements and therefore must be motivated and *'empowered'* to act (James 1996). Barrett and Murphy (1996) conclude from their study of the environmental work in a series of American companies that technical problems cannot explain the limited environmental results but rather the barriers towards human resources, values and attitudes.

The management literature, coincident with the two other mentioned research traditions, finds it conditional to successful environmental results that the environmental work is rooted in the company's organisation in the sense that management at top level as well as employees in the front-line are actively enrolled. When environmental authorities in Europe have increasingly emphasized employee participation they have drawn on these common findings and targeted employee participation or involvement as a shortcut to achieve the embedding of the environmental work in the organisation and thereby ensure continuous improvements. In 1995 the director of the Danish EPA made it quite clear that the motivation and knowledge of the employees, activated through participation, were important movers in the building of a capacity to change in the companies (Lindegaard 1995).

It should not be forgotten, however, that the company's organisation at the same time is the prime tool to exert management's control of economic performance, production results and work. The management literature explores ways of integrating new values and resources in the organisation and enriching the culture, but never questions the power-relations or management's control. *'Empowerment'*, for example, is something that is offered from above, just like the preferred term, involvement, is offered and asked for from above. When involvement evolves into or takes the form of participation, it has, however, a dynamic of its own that may transcend the manage-

rial perspective and challenge the goals and control of management as we shall see in the following.

EMS may be a path to involvement of employees and even participation but it is certainly not a guarantee. Interestingly, the ISO14001 EMS standard does not require participation. It requires information and instruction of employees in general and training of staff in environment-sensitive functions. On this background it would be misleading to attribute to the mere existence of a management system in a company that employee participation is either ensured or impeded. It depends on other factors, including the perspective of management and its preparedness for organisational change. A number of studies of companies with EMS have shown that it may function in two different ways: as a management tool to ensure the observance of certain environmental requirements, often with a legitimizing purpose, or as an instrument of change, capable of activating the employee resource to achieve continuous improvements (Kamp 1997, Zwetsloot & Bos 1998, Christensen, Nielsen & Remmen 1999, Busck 2000).

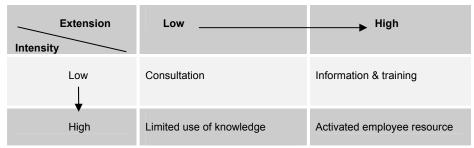# Forms, potentials and preconditions of employee participation

When analyzing the experiences from employee participation in environmental work the two parameters generally used to characterize workers' participation in general in companies appear relevant also here: the *intensity* or depth of participation based on the influence of the employees compared with the scope of participation and the *extension* based on how many are included in participative activities (Knudsen 1995). Based on a survey of experiences in the environmental field four typical forms of participation in environmental work can be identified. Characterized by increasing intensity the first three are termed involvement, the fourth participation referring to the previously made distinction. Experiences with participation of only managers or single staff members in key functions are left out of the analysis.

Typical forms of participation in environmental work:

1. ***Information and training*** (individual involvement), e.g.:
- *General introduction to the company's environmental policy*
- *Instruction in the procedures and other requirements of an EMS*
- *Brief training to motivate and change attitudes*

2. **Consultation** (indirect or representative participation), e.g.:
- *Workers' representatives in the environment committee*
- *Joint safety and health and environment committee*

3. **Limited use of the knowledge of employees** (individual involvement),
- *Involvement in environmental reviews, 'good housekeeping' etc.*
- *Rewarding of proposals to solve work-related environmental problems*

4. **Activation of the employee resource** (collective participation), e.g.:
- *Environmental training or learning through team work*
- *Transformation of knowledge and experiences of employees into techni-cal, behavioural and organisational solutions*
- *The employees used as 'agents of change' in the company's organisation*

The four forms may be schematically displayed in respect of their different (generalized) intensity and extension:

Extension / Intensity	Low ⟶	High
Low	Consultation	Information & training
High	Limited use of knowledge	Activated employee resource

Figure 1: *The four forms of participation in respect of intensity and exten-sion.*

1. Information and training - "greening" of employees

According to the literature this form of participation, which corresponds to the requirements of the ISO 14001 standard, is predominant in companies with environmental work. Training, including methods like "campaigning to arouse the attention of employees" (Klinkers & Nelissen 1995) is empha-sised as a necessary means to overcome resistance among employees (North & Daig 1996, Rohn 1996). Lack of training was found decisive for poor results among Spanish certified companies (delBrio 2001). Training, how-ever, has different connotations. The summoning of employees in the Rover group of UK to an hour of information in the canteen is termed 'training' in the management literature (Pollack 1996). More serious training or educa-tion is also described, but only for managers with environmental responsibil-ity or staff in specific environment-sensitive functions.

Like the management literature in general case studies of employee involvement in the Anglo-Saxon area indicate a fundamental view of the employees as being negative or ignorant about the environment. The motive for management to involve employees is to overcome resistance through forming of attitudes and motivation rather than expecting a special advantage. In continental Northern Europe a more positive view on the attitudes of the employees towards the environment is predominant (Christensen 1998, Gregory 1999).

Surveys among workers in Denmark, Germany and Spain have shown a high degree of environmental consciousness and interest in the environmental standard of their places of work (Jørgensen, Lassen & Madsen 1992, Duart 1998, Lorentzen & Remmen 2000). Whereas the opinions of workers and labour unions in Europe earlier were characterized by fear and resistance to environmental demands an adjustment took place from the late 80s and onwards (Roelofs 1999, Gregory 1999). Union policies in the 90s reflect the acknowledgement of simultaneous gains in the working environment as well as beneficial occupational effects of environmentally proactive companies (Oates 1993, Busck 1997). European unions have increasingly engaged in promoting environmental legislation and standards in industry (Gregory 1999, Busck 2000). In the USA the unions have not in general been hostile to environmental requirements to companies but have reacted by confronting management with other, social demands, based on a "just transition" strategy (Roelofs 1999).

The widespread focus on information and training at a superficial level among companies, also in Europe, hence, may indicate that the purpose of management of involving the employees is not so much a question of unleashing the employees' resources as it is of ensuring the smooth working of a management programme.

2. Consultation and negotiation – representative involvement

In Northern Europe most companies with an environmental work involve workers' representatives, safety reps, shop stewards, etc. and give them a say in the organisation of the environmental work (Gregory 1999), but not necessarily in an active way or aiming at wider involvement or participation.

If environmental work is established in the same branch of the organisation as health and safety work, which is often the case, it gives safety reps a say in the environmental issues. Coordination of environmental and health and safety work is important to achieve support from the employees. The formal

participation of shop stewards opens the opportunity to negotiate issues about hours and wages, etc. that might rise in connection with wider participation. But it is far from a guarantee of collective participation.

Some researchers have noticed the similarities between the formal, representative participatory system and the systematic top-down approach of EMS. Oates (1993) studied the industrial relations in Great Britain regarding the environment and found a striking correspondence between the preferred management system approach of companies and the hierarchical traditions of trade unions. Gregory et al. (1999) highlight the bureaucratic and conservative forces in the unions that influence the industrial relations in the environmental area. Lorentzen (1997) notes the resistance of the union reps to new forms of direct, collective participation in the environmental work.

Participation by the wide group of employees, i.e. collective participation, *may* arise from both individual and representative involvement. The existence of a "workers collective" in the company (Lysgaard 1972) may imply dissemination of the environmental responsibility and participation. Through informal "*work bench meetings*" groups of employees, not included formally, may be activated through a '*workers-to-workers*' approach (Lorentzen 1997). However, if this wider participation is not acknowledged and offered a structure or an organisation to maintain itself, experiences show a high risk of decreasing activity by the employees and professionalization of the environmental work (Forman & Jørgensen 2000 & 2001).

Experiences show that companies aiming at participation rather than involvement are inclined to organise it in new structures, parallel to the existing representative system, e.g. "*a decentralised organisation with a certain level of autonomy in the single departments*." (Christensen 1998, p.6) or "*Cross-cutting environmental teams*" (Lorentzen & Remmen 2000). This may indicate that the companies view the representative system as a brake on the release of the employees' resources or as an irrelevant forum of environmental cooperation, which is meant to be internal and to the best of the company, not of the social partners.

Research is limited, but there is a striking lack of available experiences of extensive and intensive participation in environmental work through the representative system. Results should be expected in Denmark after the settlement of the previously mentioned IMO-agreement. The agreement, however, was resented by a large part of industry and was cancelled after a few years. The findings of Gregory et al. (1999) in a European context confirm the impression of limited potential of the representative system to lead to collective, shop floor-based participation.

3. Utilizing the concrete knowledge and experience of the employees – a 'goldmine', but slightly extracted

Arrangements to receive proposals from employees on environmental issues are widespread in companies. Companies that implement EMS, in specific, are prone to utilize the concrete work-process related knowledge of the single employees and have good experience with this (Höglund 1995, Hansen & Lund 2002). But this is not a rule. According to the SID-survey only 50% of EMAS-registered companies in Denmark made some use of the knowledge of employees (Hjorth 1999).

It appears to be precisely in this question of how much the company values the employees' knowledge and how seriously it tries to activate it that the boundary lies between involvement and participation; between a style of management in which the scope and usefulness of employees' contributions are defined by management and another style in which the responsibility for environmental progress is delegated and the fund of knowledge among the employees set in motion.

This is not to say that involvement, although framed by management directives and programmes, may not be successful. It may indeed be a precondition to effectively carrying through environmental programmes. All the research traditions mentioned find the knowledge of the employees based on their experiences from daily work extremely useful in the environmental work. Plenty of evidence exists in the form of expressions from companies and research results. An investigation of US-companies' replies to the 'Toxic Release Inventory'-questionnaires of EPA, for instance, showed a clear coincidence between successful reduction of emissions and organised employee participation in the companies (Bunge 1996).

Management-lead involvement seems especially helpful, when it comes to environmental programmes of the 'good housekeeping' sort, i.e. 'do not use more water or chemicals for cleaning than necessary', 'remember to switch off the light or the machines, when not in use' etc. Also for making EMS-instructions adequate and relevant to the employees involvement is successful. But to ensure the motivation necessary for wider transformation of behaviour and release the creative potential of employees in changing production processes and designing cleaner technology and products, which has been demonstrated to exist, involvement hardly suffices.

Companies with a traditional, hierarchical or modern Anglo-Saxon management style concept of involvement aiming at utilizing the employee knowledge typically focus on the individual, not the collective. 'Environmental champions', much focused on in the management literature, may be offered

participation and rewarded through a career lift. Preferred means are positive or negative sanctions. Arrangements to receive proposals from the broad group of employees are combined with individual economic rewards just as environmentally inadequate behaviour may bear economic consequences (Milliman & Claire 1996, Barrett & Murphy 1996).

Research on companies where fertile contributions from employees have been reported shows, however, that it takes much more than boxes for proposals or economic sanctions to activate the employee resource. Indeed, Hansen and Lund found that *"management by reward and economy did not mean much in the investigated companies."* (2002 p.13). 'Environmental pay' was tried in a larger Danish company, Danfoss. The amount of pay depended on a measure of the environmental behaviour of the single employee but without significant results in the environmental performance of the company (Andersen 1992). Furthermore, the experiences from successful employee participation in general show that wage demands are not released.

Research in a Californian automotive plant, known for its "participative work structures" the employees were found to contribute with "contextual knowledge" rather than knowledge associated with the planning of environmental work, the propensities of hazardous chemicals or external factors (Rothenberg 2003). Danish research, however, has shown that if the employees are participating in a continued process with the opportunity to work together in teams, a learning process that raises the level of knowledge above the contextual level may occur (Handberg 1993 and 1994, Lorentzen et al 1997, Sæbye 1998).

It is evident that the employees possess a kind of knowledge about the concrete production process which no one else does. In companies aiming at cleaner production, and not just the improvement of isolated techniques or the establishment of a documentation system it seems irrational not to exploit this knowledge. The manager of the Casco-Nobel company in Denmark who had initiated the implementation of EMS expressed it this way: *"If we had not involved the employees and heard their actual experiences from the production process we would never have discovered the actual waste of chemicals that even the mass-flow account did not reveal."* (Bauer, Busck & Christensen 2001, interview appendix).

Given the ability of employees in connection with environmental work in companies; their knowledge and their indispensability when it comes to the organisational rooting of capacity to change to ensure continuous improvements, it seems obvious to assume one of two reasons why a company does not seek participation or let involvement develop into participation:

- *Either* the company in reality does not aim at rooting the environmental work and intend continuous improvements, but satisfies with a 'paper-implementation' of EMS for purposes of image or legitimization
- *or* a resistance is built into the company's organisation that together with a lack of preparedness by management does not allow for the changes that an activated employee resource calls for.

4. Activation of the employee resource - and its pre-conditions

The scientific sources of experience with participation in this intensive form are less numerous. A large number of journalistic reports and interviews with managers and employees exist but few studies. The following analysis rests on the Danish intervention studies, a few case studies from other countries and the author's professional experiences.

The environmental coordinator of Danfoss, Viby, a pioneer company in environmental work expressed herself in this way: "*50 percent of the efforts in our environmental work is about getting systematic environmental management to function. The remaining 50 percent is about motivating our employees and utilizing their experiences in the daily routines.*" (ibid). However, if the knowledge and experiences of the employees are to be utilized and turned into improvements, a certain attitude and initiatives from management towards the employees are required much different from the boxes for proposals, reward-systems or tailor-made information- and communication-processes that the management literature concentrates on.

The experiences suggest two basic preconditions. In the first instance it is pivotal that management when building up the environmental work has confidence in and prioritizes *the internal knowledge and capacity* in the company rather than external experts. Secondly, the *commitment of management* itself both to environmental improvements and to participation must be serious and openly declared.

The enrolment of employees in a programme does not suffice to ensure their commitment. It takes openness and responsiveness with management, which is not inherent in traditional, hierarchical company management or in the modern management systems' more subtle but still top-controlled type of leadership. An outstretched hand from management is conceived by the employees as a form of recognition and respect which together with the creation of confidence is fundamental to their participation and contributions in the environmental work.

In the same instance, however, that management declares its expectations to the participation and contributions of the employees it must be prepared to meet the expectations that the employees are likely to have towards management. These expectations may also be termed the *'soft' demands* of the employees (where 'hard' demands would be wage demands) when entering into a more contributing relation with management. They are in general concerned with three items:

- Simultaneous improvements in the work environment
- Increased competences through training or learning processes and access to realize knowledge and skills in the process of change
- Influence in the environmental work including in matters of work organisation

Safety and health

Research generally notifies that employees participating in environmental work expect health and safety considerations to be included. In companies with existing technically related safety and health problems such considerations are often put forward as a fundamental demand for participation. They may, however, also be raised where such problems do not exist but where the process of environmental change is envisaged to possibly solve problems related to the work organisation. Research has shown that the self-realization and influence associated with participation produces a dynamic, which counteracts the strain inherent in subordinated work and lack of opportunities for personal development in the job (Handberg 1993, Sørensen 1993, Hasle & Hvid 2003).

Furthermore, the employees feel deceived if the changes do not encompass the work environment. Basically, they do not see environment and safety and health as two distinct issues (Kamp 1997, Lund 2002). Secondly, the sources to environmental and safety and health problems are to some extent identical, the preventive measures concurrent and synergy effects possible. The implementation of EMS without the inclusion of the work environment has few chances of success, if it is meant as an instrument to create continuous improvements. Without the support and contributions from the employees it seems futile to root the system in the organisation and change performance.

Competence-building

Whereas the integration of safety and health considerations in environmental work is common and seldom causes problems, it appears much more problematic to meet the expectations of the employees concerning increased

competence and influence which are invoked by the more intensive forms of employee participation.

Training of employees in the form of one or more weeks of experience-based and competence-building education connected with organised participation in environmental work has proven effective to motivate front-line workers and activate their resources of knowledge (Sørensen 1993, Handberg 1993 and 1994, Sæbye 1998, Pedersen 1999). Competence-building by continuous learning through 'environmental teams' has also been demonstrated (Lorentzen & Remmen 2000)

The building of internal environmental competence in the company facilitates the organisational rooting of the environmental work and continuous improvements. Research on companies' implementation of cleaner production and EMS shows that the chances for establishing a persistent capacity to change and improve are reduced, when the environmental efforts are carried by external forces (Christensen, Nielsen & Remmen 1999). Internal competence-building ensures compatibility between the company's internal functioning and new methods and performance standards (Christensen 1998, Pedersen 1999). An investigation among environmentally leading Danish companies in 1995 found clear correspondence between improved environmental performance and the exploitation of internal resources (Busck, red. 1995).

When the Confederation of Danish Industries in 1994 decided to establish a special education inside the national vocational training system (AMU) to promote employee participation in environmental work they drew on this general experience. Furthermore, it was inspired by a development project at a fish-processing company that had shown surprisingly positive results. The project, fostered by S. Handberg of Aalborg University, built on an environmental training programme for 300 primarily unskilled, female, front-line workers and included group-organised project work in the plant. In a collective, experience-based learning process combined with new participative structures the employees elaborated action plans and engaged in a step-by-step transformation of work and production processes (Sørensen 1993, Handberg 1994). The innovative potential of an activated work force is apparently great and may contribute to the design of cleaner technologies and products, when the initial preconditions are met and confidence established.

The reports from this project and from experiments in other companies built over the same template (Sæbye 1998) show that the attitude-forming part of the training programme, i.e. the idea of overcoming the employees' resistance towards improving the environment, played a minor role in the process. As soon as the employees realized that management respected their

knowledge, proposals and readiness to change poured out. Neither these nor similar experiments report difficulties regarding the persistency of employee motivation as long as the commitment of management is upheld.

In the AMU system much positive experience is accumulated among teaching institutions and participating companies from carrying out the training programme. The companies have praised the education for its ability to make the environmental work a common case to all employees and providing them with competences to act (Pedersen 1999). As a central experience, however, it is emphasized that "*the development of the qualifications of the employees should go hand in hand with the development of the organisation*" (Ibid. p.48). This notion corresponds with the central thesis of the management literature; where insufficiencies in companies' organisational capacity, flaws in its 'culture' and lack of adequate instruments are held responsible for the poor results of environmental work.

Other research, including the Danish intervention projects, suggests that the problem is more profound as the organisation of companies is not a harmonious creation but contains contradictions, which the 'culture' may not conceal. The fragile balance of power and control relations framed by the organisation may be disturbed by the new competencies and patterns of influence that employee participation at this intensive stage brings with it.

Influence

The borderline between the demand for increased competence and the demand for influence is fluent. The employees naturally wish to put the learned qualifications into practice and realize their competencies, e.g. contribute to the implementation of improvements and organisational changes. This implies delegation of responsibility, new rights and co-decision.

Hansen and Lund, highlighting the concrete results of employee participation in energy management in a number of companies, conclude that not only are clear signals of responsiveness from management and willingness to delegate responsibility important for the results, but "*the involvement of employees as agents of change in processes of transformation shows to be a decisive factor with regard to the involvement of employees in management-systems*" (2002, p.7). The question is, however, how many companies that, after all, are interested in having front-line workers as 'agents of change' in their organisation?

In the first instance intensive participation raises questions concerning the immediate work conditions: Time and resources for participative activities, extension of participation, access to information etc. But by and by questions

of a more profound organisational nature arise: How is the work effort controlled in the new functions? How is the competence and power of superiors maintained towards employees with new competences? Who decides which of the employees' proposals are to be carried out and when? How much room for safety and health issues? This second kind of questions is hard to handle and agree about in an organisation, which is not very flexible or fundamentally oriented towards participation. Kamp (1997), Forman and Jørgensen (2000 and 2001) and Lorentzen and Remmen (2000) term them 'themes for negotiation'.

Experiences show that workers' influence on the questions of an immediate character, including questions of training and safety and health, may be exerted if participation is organised through the representative system. As regards the more profound organisational questions, however, the say of the elected representatives seems limited to information. When the participation is directly organised, isolated from the representative system, the experiences show even less accommodation of the employees' 'soft' demands.

In a simplifying format the forms, characteristics and knowledge-potential of employee participation may be illustrated as in the following table.

	Type of participation	Valuable/necessary for	Type of employee knowledge activated
Information & training	Involvement at a general level	Implementation of EMS and 'Good house-keeping'	____
Consultation	Participation at a formal level	Integration with safety & health work	____
Limited use of know-ledge	Individual, direct involvement	Implementation of EMS and 'Good house-keeping'	Related to work procedures and technique
Activation of employee resource	Collective participation	Real continuous improvements, including behavioural and organisational changes	Further related to production processes, product development, managerial procedures

Figure 2: *The typical forms, characteristics and knowledge-potential of employee participation.*

Barriers and conditions for intensive employee participation

In the conceptual world of the organisation theory and management literature the relation between management and employees in general and the way questions of influence are handled in the organisation reflect the '*company culture*'. To make involvement work it is important to create *"value-congruence between personnel and organisational goals"* (Wehrmeyer & Parker 1996, p.163), and the management system must be *"institutionalised as part of the company's core-systems, culture and values"* (Milliman & Claire 1996 p.52). The focus on attitudes, motivational barriers, etc. and the attention towards information, communication, brief training and individually-oriented HRM-techniques to facilitate change are based on this conception.

The concept, however, appears artificial and ideological. It discloses the fact that the dynamics and conflicts set off are socially and politically conditioned and that the employees have a collective consciousness. In the companies there are always 'we' and 'they' (Lysgaard 1972). A fundamental definition of the central concept of culture in the management literature runs as follows "*the basic assumptions and values that are shared by members of an organisation which are learned responses to a group's problem of survival in its external environment and internal integration."*(E. Schein after Wehrmeyer & Parker 1996 p.164). That is, 'we are all in the same boat'.

In opposition to this fundamentally Unitarian concept, based on the individual contract between employer and employee and a hypothetical common interest, the pluralistically based concept of the working life and participation research insists on the existence of divergent interests between the social partners inside socially based unequal power relations (Hyman & Mason 1995, Knudsen 1996, Markey 2001). Rather than being an entity with a common 'culture' the company and its organisation contains 'political' processes (Kamp 1997, Hasle & Hvid 2003).

European working life research on participation in environmental work has been inspired by the concept of the company's '*social constitution*', which conditions the opportunities and limitations of participation. The relation between the social partners in the company is conceived as a compromise developed over time and reflecting unequal power relations, influenced by social and political institutions. Implicit in the compromise management's control of the work process is maintained at the same time as the workers'

interest in the working conditions are accommodated (Lorentzen & Remmen 2000).

Participation in environmental work, associated as it is with the rise of new, albeit 'soft' demands, challenges the existing 'social constitution' of the company. When the initial preconditions to the participation of employees are met and the employee resource in an intensive and collective way is activated two simultaneous processes are set in motion. On the one hand 'hidden' knowledge and enthusiasm to improve the environmental performance are released, on the other hand expectations of being used properly, having a say and experiencing collective benefits are released. The same doubleness applies to the company organisation that, on the one hand, needs to adapt to the new scenario to provide continuous environmental improvements, on the other hand is put under pressure in so far as it is pivotal to management's control of the production and work processes.

If research does not understand the underlying power relations and contradictions of interests that the organisation contains and balances, it cannot explain the dynamics and tensions that arise when the employee resource is activated. Correspondingly, if management is not prepared for organisational changes to allow for workers' 'soft' demands and accept to delegate part of its authority in matters related to environmental improvements participation in environmental work seems futile.

Questions of democracy are, when they are not contained by the representative system, intimately linked to the company organisation. The organisation is, even when it is intended to be an instrument of change, still the fundamental tool of the management for maintaining control and upholding business objectives, production results and work efforts (Knudsen 1996). To the extent that participation and the struggle for influence challenges this side of the organisation's function and thus the power of management a democratic conflict appears that can either be dealt with through dialogue and cooperation on changes and thereby maintain confidence or become an insurmountable barrier.

It is remarkable how univocal the call for some sort of democratic development sounds from the available empirical material on participation in environmental work: A *"democratic space"* (Handberg 1993 and 1994), *"an active employee-democracy"* (Kofoed et al 1995), *"humanization of work"* (Lorentzen 1997), *"democratization"* (Sæbye 1998), or *"democratic dialogue"* (Christensen 1998, Lorentzen & Remmen 2000, Forman & Jørgensen 2001).) In their European case study Gregory et al (1999: 155) find: *"It can be concluded that the development of 'green' workers has to go hand in hand with the humanization and democratization of working life"*

It appears from the experiences that even if organisational changes have been negotiated and agreed to in advance of a participation process and the participation provides valuable results, the process may trigger undesirable organisational dynamics interfering more profoundly with the social constitution of the company than management is prepared for as illustrated by the case in the next chapter.

The *paradox*, mentioned in the introduction, that the employees have much to contribute to the environmental work, but seldom do in real life, roots in the fact that management is incapable or unwilling to loosen its grip of the organisation and let it reflect and adapt to the employees' 'soft' demands. In light of the social constitution of the company based on a socially conditioned conflict of interest between management, representing the owners, and employees, representing an individual and collective interest in compensation, the employees do not contribute for free. What is fundamentally at stake when the employees engage in environmental work, notwithstanding their interest in improving the company's environmental performance, is a *bargain.*

The employees possess something important to the company: knowledge and capacity to change, but they want something in return. Not necessarily higher pay - far from every aspect of the dynamics in the company's organisation can be reduced to economics – but human development (Hasle & Hvid 2003) and more of a say, at least corresponding to the increased responsibility and competence they have acquired in environmental terms. Management must *"learn to lose a little power",* as Hyman and Mason (1995: 44) puts it in their study of employee participation in general, and adapt the organisation to the new competences of the employees and their quest for influence on the organisation of work. The employees feel a natural ownership of the proposals born by their experiences and activity. In order to turn ownership into partnership the management must meet the 'soft' demands of the employees.

In fact, it is the general experience from the experiments of employee participation in environmental work in Denmark that either the conditions for activating the employee resource were not established, and nothing really changed, or after having run successfully for some time they created organisational resistance and conflicts leading to stagnation and termination. Projects have ceased due to demoralisation and withdrawal from the part of the employees or end of willingness from the part of management. Most of the Danish intervention projects were successful, but only temporarily. They never became an integrated part of the organisation.

Inspired by the discourse of 'sustainable development' some projects of the working life tradition have studied participation in environmental work in the framework of '*ecologically competent employees*'. This concept is based on the notion that employees from their everyday life have an environmental consciousness that if unfolded in their working life would benefit the companies' environmental performance. Given the companies' inclination to submit environmental performance to economic benefits employee participation in this way is seen as a condition to more sustainable enterprise. The concept seems theoretically well founded (Nielsen, Nielsen & Olsén 1999, Meyer-Johansen & Stauning 2001, Lund 2002) and is empirically confirmed as regards the employees' environmental consciousness and capacity to contribute to environmental change in companies. Danish trade unions have in practice demonstrated the idea in joint projects with companies and authorities, e.g. the General Workers' Union of Denmark (SID) under the parole: '*the trash man is society's keeper of the environment* (Busck & Handberg 1995)

The notion, however, has proven to be more normatively and idealistically based than rooted in the reality of most companies. A few frontrunners or companies in special markets have been inspired (Busck, Hjorth & Christensen 1998, Christensen 1998), but practically all initiatives to realize something of the kind in ordinary business and market conditions in Denmark have shipwrecked. One may say that just as few real steps society and business in general are taking towards sustainability or 'humanization of work' just as few ecologically competent employees are bringing out their competencies in companies. Competence is not just about capacity, it is also about opportunity.

Handberg's development project in the fish plant is the most spectacular example of the potential of a systematic competence-building and activation of the employee resource. But it also exemplifies the conflict potential in a traditionally managed company, the organisation of which is more of a control instrument than a structure of cooperation to change the company. The experiment, however, irrespective of the rebound at the plant, had considerable influence on later projects and developments in companies. This came about through the industrial partners' appropriation of the concept in the AMU system. For these reasons the project is chosen as the main case-study to be presented in the succeeding chapter.

Like other environmental participation projects the experiment was dependent upon the intervention of institutional actors. When left to themselves and the market, companies in general show few signs of moving towards sustainability or democratic organisation. The increased market-orientation of environmental policies through the 90s (Carter 2001) together with the

weakening of social and political institutions in the globalised environment of companies are not favourable to the development of intensive forms of participation (Nielsen 2003). However, in the absence of this the environmental work of companies loses both an important resource and an internal drive to permanent changes in organisation and performance.

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