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Marketization of Refuse Collection in Denmark: Social and Environmental Quality Jeopardized

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ABSTRACT

Refuse collection has been the main public service to be outsourced in Denmark since the EU guidelines on public procurement entered into force in 1993. The municipalities' contracting is framed by a complex set of ideologies and objectives, besides regulation. Both at EU level and at national level, demands for marketization of the public sector are counterbalanced by demands for social and environmental considerations. The procurement directive reflects the balance legalizing the inclusion of such requirements by contracting. The Danish experiences, however, tell a grim tale of subordination of social requirements in municipal contracting practices with implications for the quality of the service. The results of a recent study of developments in the working conditions at commercial collection companies show deterioration in respect of health and safety, competence building and job security concurrent with the increase in outsourcing and competition in the sector. In the analysis of the results, a combination of municipal cost saving strategies, harsh market forces and cultural influences are identified as causal factors. Drawing on a brief institutional analysis, it is concluded that the existing normative and regulative framework of municipal contracting needs reinforcement if societal intentions of qualified public services and acceptable working conditions are to be effective. Initiatives to simultaneously improve working conditions and environmental results of collection are called for.

Key words: Refuse collection, Outsourcing and contracting, Working conditions, Health and safety, Environmental performance, Quality aspects.

INTRODUCTION

Denmark has experienced a massive marketization of 'hard' public services like waste collection, cleaning, and transport since the beginning of the 90s. New Public Management (NPM) theories and discourses of 'modernization of the public sector', 'effectiveness through private delivery' and 'cost savings' have strongly influenced national and local government policies. Refuse collection services (pick-up and transport of domestic waste) administered by the municipalities have especially been targeted. The level of outsourcing in the sector today is comparable to that of the United States according to OECD figures (Elmeskov og Lundsgård 2003).

A survey carried out by 'Local Government Denmark' (the national association of municipalities) shows that refuse collection through 1994-1999 was contracted out by 71 % of the municipalities. Only in few cases, the municipal department itself tendered for and, in even fewer cases, won the contracts (LGDK 2001). The tendency has continued, so that today, only a few small municipalities run the service themselves. Two of the larger cities have kept part of the service in-house. In Copenhagen, which is served by a non-commercial company, the council has decided to contract out from 2009.

Whereas savings have materialized in this process, no attention has so far been paid to the consequences as regards the working conditions of the refuse collection workers, i.e. the employees

of the haulers contracted to deliver the service. Furthermore, no assessment has been made of the quality of the service in terms of service level, reliability, and environmental performance, and how quality may be related to working conditions.

This reflects a general tendency of the international literature on outsourcing of public services in general, and refuse collection in specific, which seems to be dominated by the NPM paradigm. Overall, the literature mirrors a concern to prove the potential of savings whilst maintaining quality by means of efficiency gains through private delivery (Ohlsson 2003, Dijkgraaf et al 2003, Brown & Potoski 2004). Furthermore, the focus is on the best ways for authorities to handle markets and contracts. Quality issues are dealt with, but when it comes to refuse collection, quality is treated synonymously with productivity. Based on more neutral ground, however, A. Hodge reviewed international research on outsourcing of public services in general and found that cost saving was the main purpose and that deteriorated working conditions were probable consequences (after Greve 2005).

Searches in international databases only gave one hit on working conditions associated with the outsourcing of refuse collection. Gustafsson & Saksvig (2003) report from Trondheim, Norway, that staff reductions introduced in order to enhance the competitiveness of the public refuse collection company led to increased health problems among its employees. Otherwise, much research exists on safety and health problems of waste workers, but not associated with outsourcing or contracting.

In 2003, the social partners of the Danish transport sector commissioned Aalborg University to do a study on the effects of outsourcing on the working conditions of refuse collection workers employed by contracted commercial companies. The purpose was to identify 'best practice' among Danish municipalities in respect of including considerations of working conditions in contracts and cooperating in the provision of safe working conditions during the operation of the service.

It was a basic premise of the study that the physical working conditions of refuse collection workers are explicitly addressed by Danish legislation. In 1993, a regulation was issued specifying requirements to equipment, collection methods, and accessibility to the collection sites (DWEA 1993). Furthermore, the local authorities were instructed to include requirements to safe access roads in the municipal by-laws regulating the collection practices and sites on the premises of the citizens. In 2001, following a governmental recognition of generally deteriorating working conditions of outsourced public service employees; new legislation was issued to "avoid competition on health and safety" (L 172, MoE 2001).

The regulation addressed the existing 'vacuum of responsibility'. The contracted employer by the law has the responsibility for ensuring safe working conditions. In the case of servicing a public authority, however, the contractor is incapable of planning and maintaining safe conditions - be it at the hospitals where cleaning jobs are done or on the premises of the citizens where refuse is being collected. The public authority, by its requirements to the service delivery and by its competence to provide safe facilities and accessibility to the refuse, is left with a considerable responsibility. Hence, the legislation ordered public authorities to include health and safety considerations in contract documents and to cooperate on ensuring safe working conditions during operation.

METHODOLOGY

Three parameters were selected to demonstrate the state of the working conditions of refuse collection workers, all of them dependent on contract requirements: physical health and safety conditions, competence building, and job security. Concerning competence building, indicators could be found in the requirements to qualifications and training as well as to delegated responsibilities in the job function. Job security could be assessed in relation to the probability of keeping the job by the termination of the contract period. Concerning physical health and safety, a list of indicators was elaborated based on the requirements of the 1993-regulation and the findings of a national research programme on refuse collection workers' health from the 90s (Poulsen et al 1995). The research found the major hazardous factors to be the physical loads due to manual work, problems of accessibility to the collection sites and inappropriate working methods, including work at a forced pace.

Many factors are involved in the establishment of safe physical working conditions: the requirements of the contracts and its control procedures, the haulers' way of meeting the requirements by planning and supervising the work, the workers' actual performance, the municipalities' enforcement of by-laws and cooperation with the contractor, etc. The performance of one of the parties, so to say, is the precondition of the other parties' performance. To find its way through this net of inter-veawed factors the study applied a qualitative and iterative approach.

First, available literature on municipal practices and safety and health performances in the sector since 1993 was reviewed. Secondly, a screening based on interviews with the major actors in the field at national and regional levels, including the labour inspection, the parties' different organisations, consultants, etc., produced a selection of 30 municipalities with assumed better practices for further investigation. From these 30 bodies, all relevant material giving evidence to the practices concerning contracting, follow-up on contracts, and administration of the service, including contract documents, bid-assessment, schemes of collection system, by-laws, information of citizens, etc. was reviewed. Simultaneously, interviews were carried out with representatives of all three parties in the actual service, including the municipalities' officers in charge and supervising staff, the haulers' administrative and operational management and the workers' shop stewards and safety representatives. By 'triangulating' the interview material, the actual standard of the physical working conditions in the single municipality was assessed on the basis of the list of indicators of safe working practices. Finally, the standard was compared to the contract documents' provisions on health and safety as well as the municipality's actual cooperation regarding working conditions in order to render conclusions on effective practices. Besides, seven cases of 'best practice' municipalities were highlighted.

Before finalising the report, local and national representatives of the three parties were asked to review case descriptions and comment on the general findings and conclusions. The comments were included in the report, which was published in December 2006 (Busck 2006).

RESULTS

Safety and health

The material collected first of all testifies that a general deterioration of the working conditions of refuse collectors has accompanied the marketization of the sector. With reservations as regards the coverage of the screening procedure, it seems that the actual standard of physical working conditions only corresponded to the required and safe standard in 9 out of approximately 270 municipalities with contracted refuse collection services. In general, work is being carried out in

high speed with inappropriate working arrangements, much physical strain and high risks of accidents and injuries.

A major factor in determining the load to which the workers are exposed emerged to be the collection system chosen by the municipality. If the traditional system with trash bags and collection sites on the citizens' premises is kept, the load is high. According to the 1993-regulation, the workers in these cases are supposed to use a cart, but this is often not the case due to a combination of the poor state of the access road and the workers' practice of doing the job as efficiently, i.e. as fast, as possible. In municipalities that have shifted to wheeled containers, the workers no longer carry the waste, but may still be loaded by poor access and poor foundation for wheeling as well as by their own inappropriate methods. Only in municipalities that have ordered the collection site to be at or close to the road, the loads are minimised.

Following the 1993-regulation, many municipalities instituted such changes of the collection system, but it is estimated that around half of all municipalities have kept the traditional system and that around two thirds still have maintained the collection site on the premises. Although nearby all municipalities have included the regulation's requirements to safe access roads in their by-laws, the enforcement on the citizens still lacks behind. Consequently, in most municipalities, a number of so-called 'problem-addresses' still exist, leaving it to the hauler and his staff to find their way out. In practice, this means ignoring safe working practices of both parties.

The national statistics of accidents and injuries of refuse collection workers in the period from 1993-2002 (GWU 2004) show a general reduction in both areas until 1998-99; where after they tend to increase again. This reflects the fact that the 1993-regulation in the first instance was effective, but that the positive effect stopped or was counteracted by other tendencies.

The study shows that the new regulation from 2001, imposing co-responsibility for the working conditions on the contracting authority, has had little influence on the practices of the municipalities. In all cases, the contract documents carefully state that the responsibility for the working conditions adheres to the contractor. Information is rarely included about the actual accessibility to the collection areas, meaning that the hauler himself must consider how to operate safely in all cases and include this in his bid. This is generally not done. In general, the contracts stipulate a formal procedure for problem solving during operation. But in practice, this is not implemented.

Besides imposing the responsibility for safe working conditions on the contractor, the contract documents often demand that the hauler operates a quality assurance system (QAS). Quality, however, is equated with effectiveness, meaning that the objectives to be met relate to the number of collections. Often economic sanctions, mostly fines, are included. Requirements to safe working practices are, in some cases, included in the systems, but have very little effect as they are not controlled.

In some cases, the municipalities require the contractor to have a 'safety and health policy'. This also has little effect in practice as the haulers readily provide such one, without implementing it, and no one controls them. "Paper is grateful" was a common expression by the interviewed haulers. Contracts may include specific requirements to the working methods, e.g. mandatory use of carts, but again, with little effect in practice as neither hauler nor municipality monitors the actual performance of the work, and the workers mostly do not care.

No contract documents were found with requirements to the size of the crew, remuneration arrangements, the organization of work, etc., which may have an effect on the workers' actual performance and speed. Furthermore, no contracts were found that required the use of specific equipment known to reduce the load on workers, e. g. vehicles with lowered entering or with automatic gear to line bins.

To sum up on the requirements of the 2001-regulation to include safety and health considerations in the contract documents, the study found that the municipalities in general explicitly renounce any responsibility. To the extent that requirements to safe working practices are specified in contracts, they have only formal significance, as they are not controlled. A gap exists between the stipulations of the contract and the reality of the work performed. Similarly, the municipalities have formally included requirements to safe access roads in their by-laws, but in practice, they are reluctant to make demands on the citizens.

When it comes to the requirement to cooperate in the establishment of safe physical working conditions, the municipalities appear to fall into one of two groups. The first, larger group consists of the "contract riders", using the haulers' term. They are strictly following the stipulations and take no interest in cooperation with the contractor. Their follow-up on contracts is governed by the number of complaints from citizens and their main tool is fines. The other, smaller group sees the contract as a basis of cooperation and has a procedure in place to solve problems as they arise. In this group, however, major differences exist in the prioritization of safe working conditions and efficient solution of problems with access road.

Competence building

In the beginning of the 90s, training programmes for waste collection workers were carried out in a number of companies, and educational modules institutionalized in the national vocational training system. Many actors, including the environmental authorities, envisaged a need for qualifying and building the competences of the personnel to be able to meet increased environmental demands in the collection service (Busck 1991). The study found that although continued interest exists among both companies and employees, the municipalities' demand for educated personnel has decreased significantly. The contract documents may address some basic qualifications, e.g. "qualified manpower needed" or "staff must be ready for training", but without any effect in practice as documentation of education is rarely required and follow-up training never demanded or instituted. A statement from the hauler that "qualified personnel are at hand" suffices.

Linked to the modest interest in qualifications is the fact that little use is made of the personnel in ensuring the environmental objectives of the service. In many collection areas, recyclables are also collected, but few contracts require the workers to control the quality of sorting and none were found to require the workers to give advice to the citizens on the arrangements for the sorting of different types of domestic waste in the municipality. Some municipalities describe the collection workers as their "ambassadors", but except from requiring clean appearance and the ability to communicate in Danish, they do not address the qualifications and competencies of the personnel.

Job Security

Following the marketization of the sector, the refuse collection workers have experienced an increase in job insecurity. Whenever their employer's contract with the municipality expires, they are at risk of getting fired. As the contractor changes in more than half of the tenders and the

contract periods last for only 3-5 years (LGDK 2001), a high turbulence characterizes the sector. The new contractor may decide to take over the personnel, but he is not obliged to do so, unless this is required in the contract by the municipality. This is rarely the case.

Best practice

The study found seven cases (nine municipalities) in which the working conditions appeared to be of a standard complying with the provisions of the 1993 DWEA regulation and significantly having reduced the health hazards pointed out by the research programme. All parties involved and external observers agreed that reasonable safe working practices were maintained.

Interestingly, only in three of these cases, the contract documents were elaborate and contained many specifications as regards safe working conditions. But all of them signalled that safety and health was a priority and that a willingness to cooperate in the establishment of safe working conditions existed. Concerning 'problem addresses', the contracts gave specific information, e.g. specified the inclusion of special equipment in the bids, or they described a specific cooperation procedure for problem solving.

Notably, all nine municipalities saw the contract as the basis of cooperation with the contractor to enhance the service level and the reliability of the service. Safety and health was a priority, not for political reasons or reasons of legitimacy, but because it was seen as a fundamental requirement for ensuring the quality of the service. The establishment of trust and dialogue both with the contractor and with the personnel was seen as a rational way of guaranteeing quality in all aspects of the service.

In all cases, the municipality addressed the citizens if problems of accessibility prevailed. Reports from the workers on problems were taken for granted. In some cases, the municipality employed a resourceful person, often a former collection worker, to mediate between all interests. In other cases, the shop steward or the foreman of the personnel acted as such. The haulers in these cases often let the personnel run the business themselves as a 'self-governing team'. In response to the trust, influence, and commitment of the other parties, the workers, on the one hand, felt motivated to maintain safe working practices; on the other hand, they paid back by delivering a better service.

DISCUSSION

Due to its qualitative approach, the study has not provided an exact map of the working conditions of Danish refuse collection workers. The screening process may also have overlooked single municipalities where the working conditions are acceptable. The material and methods, however, seem sufficiently reliable to demonstrate, in the first place, a general deficit in bringing the working conditions of refuse collection workers in line with not only specific regulations, but also general societal standards. This is reflected by the fact that a recent parliamentary decision nominated refuse collection workers to be among the specific trades threatened to be "worn-out" based on their large numbers among sick-leavers and early retired persons (MoE 2006) and set aside large funds to remedy the causes. Secondly, the study has demonstrated the flaws in the municipal practices of outsourcing which affect the working conditions negatively.

In the following, the analysis of the results is based on the assumption that the outsourcing of public services does not *per se* lead to deteriorated working conditions. In most Danish studies, this is found to happen (Jensen 2002, GWU 2003, Wiegmann et al 2004), but this may be connected with

the marketization of the public service sector rather than with the mere delivery of the service by a commercial contractor. Jeopardized working conditions, hence, are seen as a combined result of market drivers and the policies and strategies of contracting authorities, expressed in the contracts and follow-up on contracts.

The analysis is summed up in six headings identifying the main causes of the failure of municipal contracting and follow-up to ensure acceptable working conditions, where after a brief discussion of the contradictions of the institutional context of contracting follows. In the conclusion institutional means to remedy the institutional flaws are proposed.

1. The regime of 'hard' contracts

In the public management literature, a basic distinction is made between the "classical" or "hard" contract and the "soft" or "relational" contract (Ejersbo & Greve 2002). The first is characterized by a high level of details, specification of requirements, and measurable output control. The degree of trust to the counterpart is low and little initiative is left to the contractor. In contrast, the relational contract is based on the belief that not all desires and requirements may be specified in advance. The purpose of the contract is to create a framework for dialogue on the delivery of the service. Control is performed through process control.

In refuse collection, the municipalities generally apply the hard contract. This is hardly compatible with the establishment of safe working practices, which involves a series of inter-veawed factors including mutual commitment and trust. Furthermore, in the public management literature, the achievement of quality in procured services is connected with "soft" contracts (Christiansen 2002)

2. Price beats quality

Quality is a word which often appears in the contract documents, but when specified it amounts to effectiveness or productivity, measured in 'no-collects' or complaints. In other cases, it is spelled out as an award criterion, sometimes even comprising environmental or working environmental connotations. When it comes to the actual choice of contractor, however, no priority is given to quality. This was clearly stated by both haulers and municipal officers in the study and is confirmed by the LGDK survey (2001) finding that only 3 % of the municipalities aimed for quality when contracting refuse collection.

With such narrow interpretation or low value given to the quality aspect, the connectedness between quality and working conditions demonstrated by the study is insignificant to the municipalities, be they aware of it or not. The study refrained from using the prices of collection services as a measure of working conditions, since many other factors influence. It may give an indication, however, that the prices of the 30 investigated municipalities in general had decreased with 20-30% during the last 10 years. Interestingly, some of the big international players entering the Danish market in the first part of the 90s have left again, based on the unattractive terms of competition in the marketization of the sector, as the interviewed haulers see it.

3. Contracting used as a market instrument, not as a service instrument

In the case of effective competition among tenders, which is at hand in Denmark, the contracting authority is in an advantageous position to pursue short-sighted interests of cost efficiency. When, furthermore, quality requirements are not prioritized and provisions regarding the working

conditions are only formally present, the tendering companies are compelled to position themselves on the terms of the municipalities.

The turbulent market, including the turnover of personnel, in itself has a negative influence on the quality of the service. The short time horizon reduces both managements' and employees' motivations to build up competences internally and towards the customers, to perform better and take care of the equipment, etc. What is left is cash settlement, a strictly compliance with the requirements of the contract and only with the part which is controlled. The winners in the market appear to be consultants providing legal assistance and refined QAS to the municipalities and lawyers defending the companies' interests.

4. 'Discount companies' beat responsible companies and innovation

Waste collection companies inclined to human resource management and quality operation based on motivated and qualified employees are loosing market shares. They experience that even if municipalities include specifications to the working conditions in the contract documents, they are not willing to pay and do not follow up on the requirements. The LGDK survey (2001) found that the municipalities, even if specifying quality requirements, "typically chose the cheapest offer". Innovative companies investing in technology to enhance working conditions as well as environmental efficiency in expectation of increased quality requirements have lost in comparison with companies which are creative in 'contract-riding' or intensified exploitation of men and material.

5. Working conditions as a parameter of competition

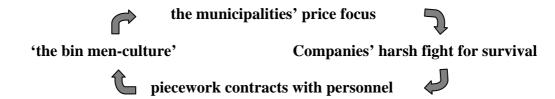
The results testify that the intention of the 2001 regulation has not been achieved. A 'vacuum of responsibility' still exists as regards the safeguarding of working conditions. The municipalities, with a few exceptions, renounce the responsibility both by contracting and in cooperating during operation. This is experienced by all contractors who consequently also renounce their responsibility. They deliberately refrain from including costs associated with the provision of safe working arrangements in their bids, experiencing that the municipalities in reality do not care. Through the last 10 years, new work arrangements have been introduced with 2 shifts a day, 4 working days a week etc. in order to exploit the material more efficiently.

6. A 'vicious circle' persists

The refuse collection business has been "shaved to the bone", as put unanimously by the managers of the companies in the business. Consequently, the companies' main survival mode has been the intensified work arrangements, which have been facilitated by the system of remuneration based on a collectively bargained piecework agreement. This means that the employees earn more, the more and faster they work, making it possible for the employer to cut down the staff. The employees' union has clung to the un-sane agreement as the conditions in the business have developed. On this background, the so-called 'bin men-culture' has been institutionalized, meaning that the job is valued for its 'freedom'. You are 'free' to return home earlier or with some extra pay compared with other unskilled jobs, just you refrain from safe but slow methods and keep up a high pace, which often means running while collecting! You are also 'free' from anyone watching and rebuking you; no one actually cares about you except from the single fact if the bin has been emptied.

The culture is nurtured by the frequent change of employer and by the entrance of new workers attracted by the 'freedom', when worn-out workers retire or are squeezed out. But first of all, it

appears to be kept alive by the fact that no other qualifications or competencies than muscles are called for. Some of the managers deplore it, but admit to depend on the culture to stay in the market. Except from the few cases in which other values are in play, the municipalities also exploit it. They defend themselves by claiming that when trying to improve the accessibility to collection sites, they experience an 'unholy alliance' between haulers seeking profit and workers seeking spare time and extra pay. Reaction creates counter-reaction; a vicious circle is established!



Contradictions in the institutional context

When it comes to health and safety, the refuse collection sector in Denmark evidently and recognized by its actors express two 'realities'. There is a theoretical 'reality', addressed in objectives, declarations, quality policies, norms, and regulations. And there is an actual reality demonstrated by the way in which the job is being performed in most municipalities. Unsafe working practices are easily observable at collection day.

Any contract should "be assessed in relation to the institutional context of the contract", states C. Greve quoting Emile Durkheim (Ejersbo & Greve 2002 p.18). Different institutions are at work in refuse collection. First, there is a formal, regulative context provided by international and national norms and regulations. The EU has a strategy for sustainable development and specific requirements to the social and environmental performances of the member countries. The requirements of the packaging directive to specific recycling rates have particular relevance to refuse collection. In the social area, detailed requirements to occupational health and safety exist.

The EU directive on public procurement (EU 2004) encapsulates a balance of economic and environmental and social considerations. The directive does not concern what the public authorities choose to outsource, only the way they do it, regulating the process of competitive tender in accordance with the provisions of free and fair competition of the EU Treaty. Nothing constrains the authorities in this process from taking social and environmental considerations into account and lay down conditions in the contract. Two communications from the EU Commission (2001 a & b) as well as the EU Court's verdict on "the buses of Helsinki" (2002) have made this quite clear.

At the national level, economic demands are, in a similar way, balanced by other societal demands to the performance of services run by public finance. Denmark never had a 'compulsory competitive tender' regime such as the UK of M. Thatcher. Institutions to clear the way for marketization have been established, but never recommending jeopardized social and environmental quality. In 1996, the Ministry of the Interior actually asked all municipalities to give priority to health and safety by contracting (Blangsted et al 2002). Recently, the Law on Service Strategy (Folketinget 2002) entered into force spurring the municipalities to outsource, but explicitly equalizing demands for effectiveness and quality. Regarding health and safety, specific regulations address the working conditions of outsourced refuse collection workers.

It seems, however, that other forces are at play preventing these normative and regulative institutions from being effective in municipal contracting. In the second place, therefore, focus should be directed towards counter-productive informal institutions. Among these, the politically and economically motivated strategy of the municipalities to pursue cost savings above all appears to be the decisive one. Other institutions of a "cultural-cognitive" kind (Scott 2001) are 'the bin men culture' and the intensification strategy of the haulers. But both seem fundamentally dependent on the low priority given to quality by the contracting authorities.

LGDK, seemingly much influenced by the NPM paradigm, has been very active in the formation of municipal contracting and practices in the refuse collection sector. In general, a "pragmatic", cost-conscious policy is recommended. In 1999, a "Manual" to elaborate contracts was issued, based on the "hard" version, and specifically recommending the municipalities to be very careful in pasting the responsibility for the working conditions on the employer (LGDK 1999). On the homepage "Udbudsportalen" (2006) of LGDK, advising the municipalities on contracting refuse collection, the 2001 regulation is directly contradicted. In interviews, officers of LGDK expressed that the organisation had "reservations" to this ministerial order due to a "problem of administrative law nature"!

CONCLUSION

Obviously, if international and national priorities of social and environmental nature are to be carried out in practice and the gap between the two realities in refuse collection narrowed, a rearrangement of the institutional context must occur or new institutions must be created by political decision. For one thing, the labour inspection in the area could be reinforced and the social partners could agree on another system of remuneration. But other institutional changes are possible:

The enhanced participation of citizens in municipal solid waste management, including policies for contracting, would probably ensure higher priority to societal values. Research points to the willingness of citizens to engage and pay for visible environmental initiatives towards waste. If citizens are informed of the social and environmental costs of the present practice they might be willing to pay a little extra for the collection service.

Making the municipalities socially accountable when contracting. When the market is paving its way inside public authorities, these authorities apparently similar to commercial companies need to be held accountable to societal considerations. The newly restructured Danish municipalities are held accountable for their regulation of the local environment by a national QAS. In the same way, a system could be designed to ensure the inclusion of social values when contracting.

Competence building and job security could be instituted by legislation or social agreements. Denmark has had historical success with the social investment in a qualified workforce. Unless the perspectives are to ignore the environmental results and leave refuse collection to companies from other European countries with low paid employees, the sector needs a lift in quality, which eventually depends on a more qualified and motivated workforce. Furthermore, the only way to eradicate the "bin men culture", wearing down the workers, seems to be by job enrichment, using and building the competences of the personnel. Actually, in the early 90s, the refuse collection workers union proposed to use the workers as "the environmental guardians of society". It is due time to accommodate this wish.

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