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social and environmental quality jeopardized

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Marketization of refuse collection in Denmark: social and environmental quality jeopardized

Refuse collection has been the main public service to be outsourced in Denmark since the EU guidelines on public procurement came into force in 1993. The contracting activities of the municipalities are framed by a complex set of ideologies and objectives, in addition to regulations. At both EU level and at national level, the 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.

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Introduction

Denmark has experienced a massive marketization of 'hard' public services such as waste collection, cleaning, and transport since the beginning of the 1990s. New public management (NPM) theories and discourses on the 'modernization of the public sector', 'effectiveness through private delivery' and 'cost savings' have strongly influenced national and local government policies. Refuse collection services (collection and transport of domestic waste) administered by the munic-

ipalities have especially been targeted. The level of outsourcing in the sector today is comparable with that of the United States according to OECD figures (Elmeskov & Lundsgård 2003).

A survey carried out by 'Local Government Denmark' (the national association of municipalities) showed that between 1994 and 1999 refuse collection was contracted out by 71% of the municipalities. Only in a few cases did the

municipal department itself tender 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 been made by using this process, no attention has so far been paid to the consequences in terms of the working conditions of the refuse collection workers, i.e. the employees of the haulers who have 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 in the international literature on the outsourcing of public services in general, and of refuse collection in particular, which seems to be dominated by the NPM paradigm. Overall, the literature mirrors a concern to prove the potential of savings while 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 a deterioration in working conditions was the probable consequence (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. In 2003, the social partners of the Danish transport sector commissioned Aalborg University to carry out a study of 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 with regard to 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 for equipment, collection methods, and accessibility to the collection sites (DWEA 1993). Fur-

thermore, the local authorities were instructed to include requirements for safe access roads in the municipal by-laws regulating the collection practices and sites on the premises of the citizens. In 2001, following government recognition of a general deterioration in 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'. By law, the contracted employer 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 citizens from which refuse is being collected. The public authority, under its requirements to the service delivery and its capability 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 in 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. In the case of competence building, indicators could be found in the requirements for 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 created, based on the requirements of the 1993 regulation and the findings of a national research programme on refuse collection workers' health from the 1990s (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 contract and its control procedures, the haulers' methods 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. That is to say, the performance of one of the parties is the precondition of the other parties' performance. To find its way through this net of interwoven factors the study applied a qualitative and iterative approach.

First, the available literature on municipal practices and safety and health performances in the sector since 1993 was reviewed. Second, a screening based on interviews with the major participants in the field at national and regional levels, including the labour inspection, the parties' different organizations, consultants, etc., produced a selection of 30 municipalities with assumed better practices for further investigation. From these 30 bodies, all relevant material providing evidence on their practices concerning contracting, follow-up on contracts, and administration of the service, including contract documents, bid-assessment, schemes of collection systems, 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 a single municipality was assessed on the basis of the list of indicators of safe working practices. Finally, the standard was compared with the provisions of the contract documents in terms of health and safety, as well as the municipality's actual cooperation regarding working conditions, in order to produce conclusions on effective practices. Finally, seven cases of 'best practice' municipalities were identified.

Before finalizing 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 January 2007 (Busck 2007).

Results

Safety and health

The material collected first of all testifies that a general deterioration in 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 nine out of approximately 270 municipalities with contracted refuse collection services. In general, work is being carried out at 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 was retained, 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. The loads are only minimized in those municipalities that have ordered the collection site to be at or close to the roadside.

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 nearly all municipalities have included the regulation's requirements to safe access roads in their by-laws, the enforcement of this requirement on the citizens still lags behind. Consequently, in most municipalities, a number of so-called 'problem addresses' still exist, leaving it to the hauler and his staff to find a way out. In practice, this means ignoring the safe working practices by both parties.

The national statistics of accidents and injuries to refuse collection workers in the period from 1993–2002 (GWU 2004) show a general reduction in both areas until 1998–1999; thereafter they tend to increase again. This reflects the fact that the 1993 regulation was effective initially, but that the positive effect was lost or 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 rests with 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 this is not implemented in practice.

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, mainly fines, are included. Requirements for safe working practices are, in some cases, included in the systems but this has 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 a policy but without implementing it and no one controls them. 'Paper is grateful' was a common expression by the interviewed haulers. Contracts may include specific requirements in terms of the working methods, such as the 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 concerning 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, such as vehicles with lowered entrance or with automatic gear to align and lift the bins.

To summarize 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 for safe working practices are specified in contracts, they only have 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 in this respect.

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', to use 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 see the contract as a basis for cooperation and have a procedure in place to solve problems as they arise. In this group, however, major differences existed concerning the prioritization of safe working conditions and the efficient solution of problems with access road.

Competence building

In the beginning of the 1990s, 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 so that they are able to meet the increased environmental demands in the collection service (Busck 1991). The study found that although continued interest existed among both companies

and employees, the municipalities' demand for educated personnel has decreased significantly. The contract documents may address some basic qualifications, for example, 'qualified manpower needed' or 'staff must be ready for training', but without any effect in practice as documentation on 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 helping to promote 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 the sorting of recyclable waste 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 apart from requiring a 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 losing their jobs. 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 rate of insecurity 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 having reduced the health hazards identified by the research programme. All parties who were involved and external significant observers agreed that reasonable safe working practices were maintained.

Interestingly, only three of these cases had contract documents with detailed requirements including many specifications with regard to safe working conditions. However, 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. With regard to 'problem addresses', the contracts gave specific information, for example, by specifying in the bids the need to include the provision of special equipment, or by describing 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 to ensure 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 approached 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 repaid the trust 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 the large numbers of refuse workers on sick-leave and among the 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 that 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 deterioration in the working conditions. In most Danish studies, this has been 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, as expressed in the contracts and follow-up on contracts.

The analysis identifies seven main reasons for the failure of municipal contracting to ensure acceptable working conditions. The first six of these are associated with economic motives, market forces and behavioural reactions at work in the contracting situation, the seventh with the contradictions or weaknesses in the institutional context. In the conclusion suitable 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-related 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 connection between quality and working conditions demonstrated by the study is insignificant to the municipalities, whether they are 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 them. It may give an indication, however, that the prices of the 30 investigated municipalities in general had decreased by 20–30% during the last 10 years. Interestingly, some of the big international players entering the Danish

market in the first part of the 1990s 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 cases of effective competitive tendering, such as occurs in Denmark, the contracting authority is in an advantageous position to pursue the short-sighted interests of cost efficiency. When, furthermore, quality requirements are not regarded as a priority and provisions regarding the working conditions are only formally present, the tendering companies are compelled to align themselves with 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 the motivation of both management and employees to improve competence internally and towards the customers, to perform better and take care of the equipment, etc. What remains is cash settlement, a strictly compliance with the requirements of the contract, although 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 that are inclined towards human resource management and quality operations based on motivated and qualified employees are losing market shares. They find that even if municipalities include specifications concerning 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 even if they specify quality requirements the municipalities '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 out in comparison with companies that are creative in 'contract-riding' or intensified exploitation of men and materials.

5. Working conditions as a parameter of competition

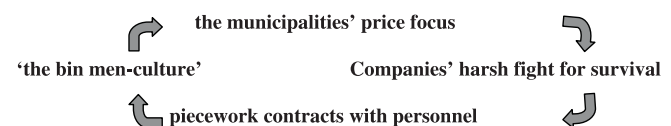
The results testify that the intention of the 2001 regulation has not been achieved. A 'vacuum of responsibility' still exists with regard to the safeguarding of working conditions. The municipalities, with a few exceptions, renounce the responsibility both by contracting and in cooperating during operation. This is the experience of all contractors who consequently also renounce their responsibility. They deliberately refrain from including costs associated with the provi-

sion of safe working arrangements in their bids, as it is their experience that the municipalities in reality do not care. During the last 10 years, new work arrangements have been introduced with two shifts a day, four 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 expressed unanimously by the managers of the companies in the business. Consequently, the companies' main survival mode has been by intensified work arrangements, which have been facilitated by the system of remuneration based on a collectively bargained piecework agreement. This means that the more and faster that the employees work the more they earn, making it possible for the employer to reduce the number of staff. The employees' union has clung to this unsatisfactory agreement as the conditions in the business have developed. Within 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, provided that you refrain from safe but slow methods and keep up a fast pace, which often means running while collecting! You are also 'free' from anyone watching and rebuking you; no one actually cares about you except for the single fact that 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. Primarily however, it appears to be kept alive by the fact that no qualifications or competency other than muscles are called for. Some of the managers deplore it, but have to depend on the culture in order to stay in the market. With the exception of the few cases in which other values come into 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!



7. Contradictions in the institutional context

When it comes to health and safety, the refuse collection sector in Denmark evidently and as recognized by its actors demonstrates 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 on 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 for the social and environmental performance 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 concerning 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 itself with 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 laying down conditions in the contract. Two communications from the EU Commission (2001a, b) as well as the EU Court's verdict on 'the buses of Helsinki' (EU-court 2002) have made this quite clear.

At the national level, economic demands are, in a similar way, balanced by other societal demands on the performance of services run by public finance. Denmark never had a 'compulsory competitive tender' regime such as that used in the UK when Mrs Thatcher was prime minister. Institutions have been established to clear the way for marketization, but they have never recommended the jeopardizing of 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) came into force, spurring the municipalities to outsource, but explicitly equalizing demands for effectiveness and quality. With regard to health and safety issues, specific regulations address the working conditions of outsourced refuse collection workers.

It seems, however, that other forces are at play and are 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 else appears to be the decisive one. Other institutions of a 'cultural-cognitive' kind (Scott 2001) are 'the bin men culture' and the intensifica-

tion strategy of the haulers. However, both seem fundamentally dependent on the low priority given to quality by the contracting authorities.

LGDK, which seemingly is 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 placing 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 the opinion that the organisation had 'reservations' about 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. Furthermore, other institutional changes are possible.

The enhanced participation of citizens in municipal solid waste management, including policies for contracting, would probably assign a 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', which is wearing

down the workers, seems to be by job enrichment, using and building the skills of the personnel. Actually, in the early 1990s, the refuse collection workers union proposed that the workers should be used as 'the environmental guardians of society'. It is now time to accommodate this wish.

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