



PRIVATE SECTOR PARTICIPATION IN SOLID WASTE MANAGEMENT: EMPIRICAL EVIDENCE FROM MOROCCO¹

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ABSTRACT

This paper addresses the involvement of the private sector in financing and managing solid waste management (SWM) services in low- and middle- income countries (LMIC). In the first section of this paper, private sector participation (PSP) in Morocco is presented, including the reasons for involving private enterprise. The second section discusses the PSP experience in Tangier where PSP has been practised since the year 2000. Relevant issues of contract management and some principles of sustainability in SWM are discussed. One particular issue is the lack of accurate information on the quantities of waste to be collected, and the impact this has on the relationship between client and contractor. The paper concludes with some key lessons learnt from this evidence.

1. Introduction

Establishing a sound financing framework to meet growing solid waste infrastructure needs in low- and middle-income countries (LMICs) remains a key challenge, which must be overcome before the Millennium Development Goals (MDGs) can be achieved in those countries. Private sector participation (PSP) can create opportunities for national and international entrepreneurs and enables a faster response to new needs for environmental infrastructure, new capital investment, access to technical know-how, and increased efficiency. In the SWM sector there is no longer much doubt about the positive effects of PSP. Many LMICs have already accomplished significant strides in the SWM sector, but the challenges remain formidable. Since accurate information about the generation of solid wastes is not available, municipal authorities base contractual specifications on average figures given in literature. However, in a tourist-driven economy like Tangier, these figures can double during the holiday season. Moreover, redundant information like fixed time schedules for waste collection, and/or the type of waste collection vehicles, can result in never-ending disputes between the two contractual parties. As the ultimate target is to achieve integrated solid waste management, the contractual agreement has to follow the principles of sustainable waste management, and must focus on an inter-organizational relationship instead of mutual accusations.

Contrary to conventional belief, PSP, both in the financing, and managing of public infrastructure, is not a new phenomenon. In 1562 Sully contracted a private enterprise for waste collection in Paris. This resulted in a public uprising against the tax for waste collection and this first outsourcing experience therefore failed. In 1662 the city of Tokyo contracted out waste collection, including waste disposal, to private contractors. Recently, both in the industrialised countries and in LMICs, the municipal infrastructure and services markets have, mostly in the last two decades, undergone unprecedented change in terms of the financial volume of transaction. The most common argument favouring PSP, is that a private entrepreneur who operates in a competitive context, has stronger incentives and is better able to

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- control costs,
- respond to consumer needs, and
- adopt new technologies and the optimum management practices.

Nevertheless, two key points should be noted. Firstly, the success of PSP differs from one country to another. Secondly, the PSP is not the same across all sectors. Nevertheless, due to the lack of financial means to achieve the MDGs in LMICs, the issue of PSP, especially in the solid waste industry, will be a topic of both academic and professional discussion for at least the next 15 years.

As these countries require foreign financial aid to implement development projects, debts are accumulated. In order to stop this vicious circle of over-indebtedness, the concept of PSP is crucial to the development process. Accordingly, the issue is no longer one of public versus private. Meeting the financing needs and the MDGs will require resources from all possible sources, including through comprehensive PSP. What are the reasons given by municipal managers? What are the typical difficulties in contracting out solid waste services? What will the next challenges be for the coming two decades?

In the following chapters, this paper will present in-depth arguments favouring PSP and will also discuss some contractual issues that came to the fore during the Moroccan experience.

2. PSP in solid waste management in Morocco

The annual cost of environmental degradation in Morocco is estimated at between 2.75% and 4.65 % of the Gross Domestic Product (GDP), representing about € 1.3 billion. In particular, the cost of inadequate SWM is estimated to be about 0.5 % of the GDP. In addition, inadequate SWM in Tangier leads to the pollution of beaches and US\$ 23 million of lost revenues for hotels. This figure will increase as more waste is being generated due to an ever-improving standard of living, urbanisation, and not least due to the ambitious programme of the government to strengthen the tourist industry.

Traditionally, the municipality units provided SWM services, funded by the so-called –Taxe d'Édilité - government tax. However, its recovery rate is only about 50% on average, and this tax is not exclusively for financing SWM services. Consequently, the municipalities do not have sufficient financial means to cope with the ever-growing waste volumes. The results are poor municipal sanitation and environmental degradation, including loss of revenues (*see preceding paragraph*). The efforts of the local government have been geared towards resuscitating the national environment. In effect, since the 1990's, national policies have targeted a decentralized administration in an attempt to achieve comprehensive local governance and the active involvement of the private sector in the provision of the SWM services. Provided that there are appropriate business incentives for national and international entrepreneurs, the private sector can then be considered as the engine for accelerated growth. Despite some dissatisfaction, certain municipal managers have given some solid reasons in favour of PSP. With respect to efficient public management, international investors with solid financial backgrounds and managerial expertise, as well as good governance records, play an important role in the SWM sector in Morocco. Indeed, in recent years, there have been numerous NGOs and CBOs involved in SWM services, but due to their limited managerial and financial means, and also questionable efficiencies, they can only be contracted by municipalities for small districts.

As mentioned above, besides the "Taxe d'Édilité", the Moroccan municipalities finance environmental infrastructure projects by means of transfers from the central government (*subsidies*), credits², and their own revenue. Depending on their economic capacity, subsidies from the central government can reach up to 70 % of the municipal budgets. However, procedures to get SWM services and infrastructures financed are very slow. Moroccan administration procedures are rather sluggish in comparison to the

² Fonds d'Équipement Communal

dynamic economic expansion of the country. To avoid rigid bureaucratic procedures, municipal managers therefore prefer to contract the private sector, to save time. For instance, buying a new truck for solid waste transport can take up to one year. Any request must pass through the following stages: from the technical unit to the Director of Technical Affairs, then the President of the Municipality of Tangier and thereafter to the main rate collector³, then to the Mayor, then to the Wali⁴ and finally to the central administration⁵. The reply has to follow the same path in the opposite direction. Accordingly, municipal managers prefer to contract private firms, in order to avoid this bureaucratic procedure.

The final reason in favour of the involvement of the private sector is the workers' union. In the city of Tangier for instance, there were about 400 workers under the authority of the solid waste management department. Whenever public labour was not satisfied with the administration of the community, the SWM department was the one likely to go on strike, although wage demands or claims have little to do with this sector. The public rapidly felt the effects of such strikes, and public opinion put pressure on the municipal administrators to satisfy the workers' demands. Arguably, a union of workers is necessary as it is a discussion and claim forum for the employees. However, unions that are not well organised tend to abuse their power.

Approximately 40% of all municipal waste collection and transport in Morocco is accomplished through PSP contracts, known as the "Gestion déléguée". In 2001, there were only 11 PSP contracts agreed between the private sector and the municipalities; currently 27 contracts have been agreed between municipalities and private enterprises for a total value of about €70 million. A certain dynamism is evident in this sector. Some cities, like Casablanca, Fès, Rabat and Tangier, have already taken the initiative to contract out their waste collection and the management of their landfill. International firms from France, Germany, Spain, and USA are already operating in the solid waste market in Morocco. Global players like Vivendi and Lyonnaise des Eaux are also operating in this market, mostly in joint venture with Moroccan firms. Currently more than 90% of the PSP contracts signed with municipalities include street-cleaning, waste collection and waste transport. However, only few municipalities own a sanitary landfill. As environmentally sound waste disposal is urgently needed in any adequate SWM system, and the required know-how and in particular the financial means are not always ready when needed, international firms with solid financial background and technical know-how have great opportunities to enter this market. Additionally, the waste sector offers a great opportunity to small and medium Moroccan firms. Some of them are in joint venture with international firms, whereas others operate alone. It is a great challenge to assess the performance of these PSP contracts, as PSP experience is too recent, and an unbiased comparison is not possible because there were no reliable measures of performance before the introduction of PSP.

3. PSP in SWM in Tangier

The city of Tangier is located in northern Morocco. It lies on the North African coast at the western entrance to the Strait of Gibraltar. The city represents a meeting-point of routes to many destinations. Tangier has a Medina, the old Arab town including a pair of markets with narrow roads. According to the 1994 census (Table 1), the population of Tangier-Médina and Charf (*another district in Tangier*) was about 350,000 inhabitants.

Prior to the year 2000, there were various problems with the financial management of the solid waste sector regarding accounting, investment and budget planning. The expenses relating to solid waste management were not known because of the lack of cost accounting, and the collection rate of the "Taxe d'Édilité" was low. Between 1999 and 2000, only 20% of the "Taxe d'Édilité" was collected in

3 Receveur principal

4 Governor of the region

5 Ministry of the Interior

Tangier. A collection rate of 100% of the tax would result in tax revenue of roughly €2 million for the city. The absence of any improvement plan for the collection rate of the taxes in general, and the “Taxe d’Édilité” in particular, had proved a major constraint to the improvement of the solid waste management sector. This resulted in the contracting-out of the SWM service to a private firm, namely: CESPA.

Table 1: Population of Tangier including waste generated per year

Year	2003	2004	2005	2006
Estimated population	188,488	193,389	198,417	203,576
Municipal waste [tonnes/year]	50,891	52,214	53,572	54,572

CESPA⁶ is a group of companies with its headquarters in Spain, which provides services in the whole waste cycle. It is involved in all sectors of the waste industry, including collection, sorting and treatment, mostly on behalf of municipalities. The group operates worldwide, in particular in Portugal, Argentina, Bolivia, Uruguay and, more recently, in Morocco. In the year 2000, the Group was contracted by the Municipality of Tangier. The duration of this contract was fixed at seven years, until 2007. Each party has the right to terminate it at least six (6) months before the end of the term. The main objective of the contract is to set up an integrated cleaning plan for the greater municipality of Tangier (Tangier-Médina and Charf-Souani) and in particular to:

- collect and transport household and similar wastes (municipal wastes),
- sweep the roads and public places,
- wash the roads and public places,
- clean the beaches.

CESPA is also responsible for the collection of bulky household waste. It has to use special transportation for this kind of waste. Both the collection and the transporting of household waste have to be carried out by the compactor vehicles according to the contract. The municipality is divided into different districts for waste collection purposes. According to an annual calendar, which has to be submitted to the municipality for approval, the waste should be collected once every two weeks. According to the contract, there is no waste segregation prior to collection. The household waste must be collected between 6 am and 2 pm, or any other time schedule agreed with the particular sector of the municipality. There is no waste collection on the 1st May, which is a national holiday.

Tangier-Médina and Charf are the two districts involved in the contract between CESPA and the municipality. The census of 2004 was the basis of the contract with the private sector. However more accurate figures on the population of Tangier-Médina and Charf have since been published (Table 2).

In addition to the fact that there is a discrepancy between the figures published by the census of 1994 and the one of 2004, Tangier’s economy is a tourist-driven one. Between January and September, an estimated 533,368 tourists stay in the city for an average of 2 days, generating approximately 1,000 tonnes of solid waste each year. Furthermore the number of tourists increased from 2004 to 2005 by 16%. In addition, as mentioned earlier, Tangier serves as a thoroughfare to different destinations, and between June and September some 88,500 people pass through the harbour of the city every day, spending roughly 10 hours there, and generating an additional 8,000 tonnes of solid waste. More waste is therefore generated than is stated in the CESPA contract, but the main issue is that it is generated within a short time period. The main challenge for a profit-driven company is to guarantee the service during the peak season without having superfluous equipment and manpower in normal season. Clearly, the generation of solid waste in this case is not uniform throughout the year as often appears to be assumed in the literature. Due to the fact that accurate figures are often missing in LMICs, and

⁶ The main shareholders are: AGBAR Group (Aguas de Barcelona) and the SITA Group. Each of them own 50% of shares.

contractual authorities use theoretical data when setting up agreements with the private sector (see Section 4.2), conflicts and never-ending disputes are inevitable.

Table 2: Population of Tangier according to the census 2004

	Total	Households
Charf (Mghogha – Souani)	257,826	55,984
Tangier-Médina	173,477	40,929

4. Contracting-out: Key issues

4.1 The principle of continuity⁷

Solid waste collection is a service that is vital to the daily functioning of any large city. Any disruption can result in pressure by the population on the municipal authorities. Due to the fact that private enterprises can go out of business, service disruptions are always a possibility. The continuity of service is an important issue when setting up contractual agreements between the private and public sectors. The continuity of the SWM service must be guaranteed at all times, independently of whether this service is rendered by the municipality or a private enterprise. Measures to ensure continuity are written into the CESPAs contract in a comprehensive manner due to the fact that the municipality is highly interested in maintaining city cleanliness. Accordingly, the manager of CESPAs is committed to ensuring a sound management service during the whole duration of the contract, under any circumstances, except in the case of Force Majeure. Furthermore, CESPAs is committed to ensuring the provision of:

- the vehicles, machines and equipment required, and their accessories,
- the management and the maintenance of the vehicles, and
- the provision of the required personnel.

The personnel and the equipment must be provided in sufficient quantities in order that there is no interruption of service.

If the service has to be interrupted, even partially, CESPAs is obliged to inform the municipality at least 24 hours beforehand, and to take all required measures, together with the municipality. In addition, if an accident occurs with a vehicle, the latter has to be replaced within 24 hours in order to avoid any interruption of the service. Throughout the summer period, the management is committed to guaranteeing the manual and the mechanical cleaning of the beaches of the municipality. Should a disruption occur, the municipality has the right, without any formality, to take immediate possession of all equipment, materials, personnel, and the premises and facilities required for the supply of the service, and to use them to provide the service itself. CESPAs will have to bear the costs and risks of this action until it is able to supply the service again. Within one month, CESPAs has to make a final decision about pursuing the contractual arrangement or terminating it. As the saying goes:

“By trying to walk like a pigeon, the crow has forgotten how to walk like a crow”⁸,

Will the municipality be able to start again in a short time period to render the service if CESPAs is unable to meet its commitments? For the time being, both parties try to keep collaborating despite some contractual dissatisfaction on both sides.

⁷ The principle of continuity is about the guarantee that the solid waste service in any municipality shall be rendered without any interruption whether it is managed by the private sector or the municipal administration.

⁸ Le corbeau qui en voulant imiter la marche du pigeon a oublié sa propre marche

4.2 Reliable information

According to the contract, CESPA is required to collect 432 tonnes of solid waste every day. But during the holiday season, June to September, this amount increases very significantly, because of the number of tourists visiting the city and also the transit passengers (see Figure 1). However a fine of about € 1,000 will be charged if waste in a sector is not properly collected. According to the contract agreement, any financial claim by the contractor due to a lack of information will not be accepted by the municipality. Simply put, there is no room for any financial manoeuvring after signing the contract, even though the data used in the contract are not accurate.

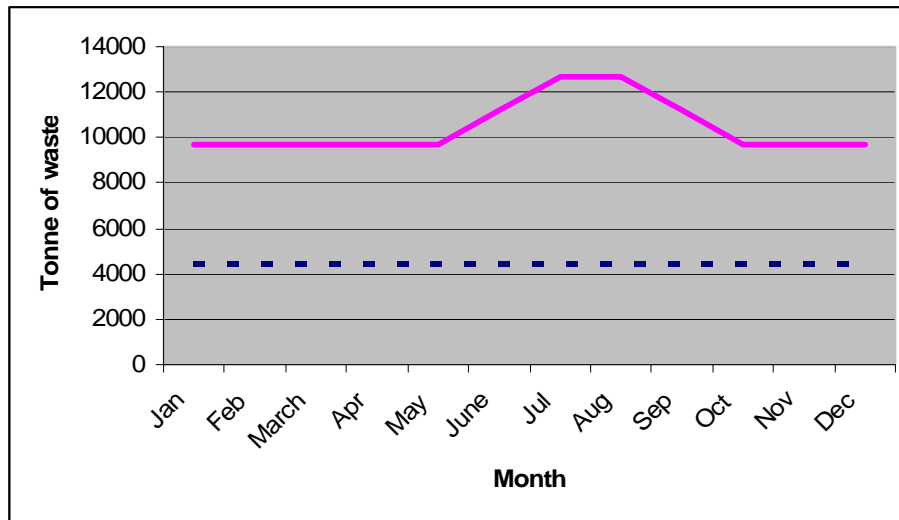


Figure 1 Waste quantities – estimated and contractual

----- solid waste collected according to contract
 _____ Most likely quantity of solid waste generated

Generally, private operators shed excess employees taken from municipal workforces, and this is one of the most vexing problems facing municipal utilities in LMICs. CESPA took on about 400 former workers from the municipality, guaranteeing them jobs for a period of 3 years. It also guaranteed them a 15% bonus during the contract time period, independent of work performance. The salaries of those workers were deducted from the financial envelope of the contract. Nonetheless, the performance of those 400 workers remains one of the key issues of this contract. A high rate of absenteeism, bad use of equipment, lack of motivation, non-flexibility in working hours, etc. are some reasons given by the CESPA management for dissatisfaction with former municipal workers. Consequently, the management board decided to hire 50 more workers. Those workers do about 60% of the entire work according to CESPA management.

Another issue of the contract was the taking over of the municipality's machinery and equipment. According to the contract, CESPA had to take on some 13 used vehicles and 2 pick-up trucks for waste collection, 10 bins with a volume of 5m³, 30 metallic bins having a volume of 1100 litres and 20 plastic bins of 600 litres. According to the management of CESPA, most of these items were not in good working condition. At the end of the contract, the municipality is committed to take back all the equipment and machinery at their respective residual values. New equipment, particularly plastic containers bought by the company at the beginning, have been misused. Ashes from bakeries and hammam⁹ result in destruction of plastic containers. Thus, their value was reduced very soon after being put into service. Public awareness campaigns should therefore have been set up prior to this

⁹ Traditional sauna

contract. These campaigns are extremely useful in educating people on how to treat and store the waste they generate. In the district of Sallah, for instance, good results were obtained because of a good awareness campaign.

All of the services and works should be under the control of the President of the Municipality and his representatives, in particular the municipal engineer. The control of the services is based on visual checking of the general performance of cleaning work, and on claims and complaints made by the beneficiaries. The municipal technician is responsible for checking that the work is done according to the contract specifications. In case of dispute, a further check will be carried out together with the manager of CESPAs or his representative, using: forms for evaluating the quality of the services, journals of daily activities, reports of road accidents, etc.

The transporting of the SW is performed according to routes agreed with the municipality. Compactor vehicles are to be unloaded at the place designated by the management of the landfill. If CESPAs, for any reason, is obliged to unload the waste in a place other than that mentioned above, both parties have to co-ordinate to find a common solution. In reality, waste is disposed at a dumpsite which has been in operation since 1970, situated 5 km from the city centre of Tangier along the Route of Tétouan. The disposal site has a total area of 20 ha, and a slope of about 40%. Because of this slope, the accessibility, especially in the rainy season, is not easy. Accordingly the contractor is not fined because of improper disposal as specified in the contract, because the accessibility can be problematic.

Finally, CESPAs has to submit information regarding the weight of all the waste disposed of at the dumpsite to the responsible person of the municipality if required. Since there is no weighbridge at the landfill, the quantities of solid wastes are estimated. This kind of estimation from CESPAs's side and its evaluation from the municipality's side is likely to result in mutual accusations. To summarise, contracts should be flexible to allow for the lack of accurate information about the SWM industry in LMIC from both the private entrepreneurs and the municipalities.

4.3 The Hierarchy Principle

In any comprehensive SWM system, the waste management hierarchy has to be accepted: Waste prevention and minimisation should be given priority over recycling and treatment, with environmentally-safe disposal finishing the chain. Waste materials shall be segregated at source as much as possible, to improve the quality of materials for reuse and recycling (including organics for composting), and also to reduce energy used in collection and transportation. Accordingly, there should also be incentives for a private operator to minimise waste. However, CESPAs is paid by the amount of waste disposed of, in contradiction to this principle. More than 60 % of the waste generated in Tangier is biodegradable making it more appropriate for aerobic and anaerobic treatment than disposal. Although, the informal recycling industry is very active, there is no paragraph with respect to the waste hierarchy principle in the contract with CESPAs. In fact, in Tangier there are about:

- 50 waste pickers working on the dumpsite
- 100 mobile scrap merchants
- 10 middlemen
- 2 wholesalers
- 3 plastic recycling units.

The economic value of recycled products in the Tangier - Tétouan region represents about €2,000,000 a year. of the 159,805 tonnes/year generated in Tangier, about 31,961 tonnes are recyclable – approximately 20%. The recycling market in Tangier handles about 2.4% of the solid waste generated in the city, amounting to 3,832 tonnes/year. Theoretically, about 20% (31,961 tonnes/year) could be recycled. Consequently, there is space for improvement. As mentioned before, the recycling sector is an informal one with the involvement of some middlemen and wholesalers. It is not an integrated part of the solid waste management system of the city. Revenues generated by recycled materials in

Tangier equal € 400,000. Finally, the national and local authorities should create incentives for enterprises to follow the waste hierarchy principle. This remains the biggest issue for the LMICs.

5. Lessons learnt

It is difficult to reach an unequivocal verdict on the effects of PSP, and its effects on the SWM industry in Morocco. On one hand the municipal authorities claim:

- the CESPAs do not respect the specifications of the contract,
- there has been insufficient investment in new equipment,
- districts are not cleaned,
- there is no proper disposal of waste, etc.

On the other hand the CESPAs management argue that:

- the contract is incompatible with the actual situation in the city,
- there is a lack of public awareness regarding the use of the equipment,
- there are delays in the payment of invoices,
- the streets are too narrow for CESPAs vehicles,
- access to the disposal site is difficult etc.

Although there is some dissatisfaction with PSP, this does not necessitate a backward-looking return to public provision of SWM services in as far as no one is sure if they could do a better job. There are still valid reasons in favour of involving the private sector in the field of SWM in LMICs. Large cities in LMICs (in Morocco, in the Philippines, etc.) are usually financially supported by their central government and because of bureaucratic procedures they prefer contracting out SWM services to private enterprises to providing services themselves. Once an annual budget is planned and allocated to this service, the municipal administration no longer has to deal with waste services (strikes of workers, buying fuel, repairing damaged vehicles, etc.) on a daily basis. The notions of the "Polluter Pays Principle", "Affordability", etc. are still remain academic for some years to come in the LMIC context. Nonetheless, a certain threshold of administrative competence must be guaranteed to ensure that the PSP process is fair, transparent and efficient.

When the continuity of SWM services has been ensured as much as possible, the next step will be to create incentives for private enterprises to follow the Waste Hierarchy Principle. PSP can improve SWM services in LMICs, but performance improvement also relies on better public management. This will result in a better inter-organizational relationship between the private sector and public administration. Of course a contractual arrangement is important but no contractual agreement can take every contingency into account. No one can foresee the future. The contracts have to be set up in a flexible manner. A difficulty in drafting contracts is dealing fairly and adequately with unforeseen circumstances. A thorough contractual framework should not only include a comprehensive specification of services, but also provisions delineating procedures for allowing for the objections of the contractor, dictated by more accurate information and changed circumstances. Governments should therefore set up an effective regulatory framework that gives investors sufficient confidence. Local municipalities will have to set up monitoring committees or will have to be assisted by independent experts or regulatory agencies. A monitoring committee should be an integral and essential part of PSP as it ensures the acceptable performance of the private firm and this leads to better coordination.

PSP contracts in the SWM sector are typically agreed for multiyear periods; therefore, competitive access to alternative providers is excluded during the duration of a contract. As a result, service quality and cost savings are principally determined by the characteristics of the relationship between private firms and public administration, and not by the competitive marketplace as stated by international organizations (see Section 2). To conclude, there is certainly a long way to go until Integrated Sustainable Solid Waste Management (ISSWM) is achieved in LMICs. As the saying goes "An illiterate

person does not worry about the author's rights. Accordingly as SWM in LMICs is a kind of stepchild of ISSWM, one has to focus on priorities such as: waste segregation, higher rates of waste collection in LMIC cities, "adequate" disposal, and not least institutional strengthening. PSP is at present improving the collection rate and might help to achieve ISSWM in LMIC in some years together with purposeful and comprehensive public management.

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