

## On the decentralisation of Solid Waste Management in Lebanon: a viable solution to the “waste crisis”?

If “the history of the city, to a large extent, is a history of struggle against rubbish”<sup>1</sup> it can be claimed that in spite of the struggle, since the “waste crisis” started in 2015, Beirut and other cities in Lebanon have been fighting back. Two years after the beginning of the “waste crisis”, the mobilisation towards a more efficient disposal of waste has gone beyond the protests that broke out in the infamous summer of 2015. The mobilisation has taken the form of practical initiatives that aim at dealing with the waste in a sustainable manner. Through interviews with several representatives of NGOs, enterprises and citizens working towards an environmentally sustainable Solid Waste Management (SWM) in Lebanon, this paper explores the multiple reactions to the “waste crisis” and the increasing decentralisation of SWM in the country.

“Solid Waste Management (SWM) refers to the supervised handling of waste material from generation at the source through the recovery processes to disposal” (Glossary of Environment Statistics, UN, 1997)

### *Solid Waste Management in Lebanon: what are the issues?*

The composition of the waste in Lebanon is dominated by organic waste (Figure 1)<sup>2</sup>. However, in spite of the fact that most of the waste produced in Lebanon is degradable and potentially compostable, the country has been facing a long-standing struggle with the disposal of its waste. In fact, as several other developing

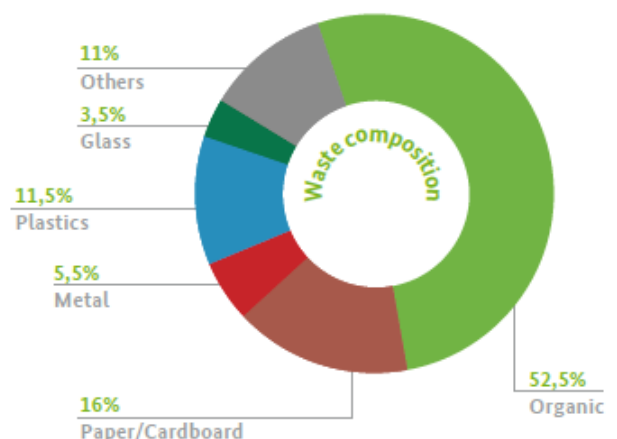


Figure 1 – Sweepnet, Country Report on the SWM in Lebanon (2014), 8

<sup>1</sup> Min’an W., “On Rubbish”, *Theory, Culture & Society* (2011), Vol. 28, Issues 7-8, 350

<sup>2</sup> Sweepnet, *Country Report on the Solid Waste Management in Lebanon* (2014), 16

countries, Lebanon's efficiency in the delivery of SWM-related services has also been hampered by population growth, financial constraints, or inappropriate allocation of funds, lack of a legal framework for SWM and scarce data on SWM-related issues.<sup>3</sup> Furthermore, the seemingly unstoppable increase in waste production over the last decades has worsened the situation.<sup>4</sup> In spite of the fact that the whole country is appropriately covered by SWM services (99% in rural areas and 100% in urban areas), the amount of solid waste that is recycled is significantly less (only 8%) than the one that is landfilled (48%)<sup>5</sup> with significant costs for the public sector. Furthermore, particularly striking is the fact that even though in Lebanon laws that regulate SWM are present since 1920<sup>6</sup>, a legislative framework for SWM is still absent.<sup>7</sup> The lack of such a framework results in a confusing distribution of often overlapping duties and responsibilities among the several state institutions in charge of SWM.<sup>8</sup>

The aforementioned difficulties in dealing with SWM were aggravated by the closing of Nameeh landfill in 2015, where all the waste from Beirut and Mount Lebanon had been collected since 1997, and by the end of the contract with Sukleen, the company since then in charge of the disposal of waste in Beirut and Greater Beirut area. The convergence of these factors concurred to worsen the provision of SWM-related services, which has increasingly become more inefficient and detrimental for the environment. In fact, in order to find a

Waste disposal is the process through which unwanted substances or objects are removed and eliminated. This process includes practices such as landfilling, burning and recycling.

<sup>3</sup> Yeboah-Assiamah E. et al., "Decades of Public-Private Partnership in Solid Waste Management: A Literature Analysis of Key Lessons Drawn from Ghana and India", *Management of Environmental Quality: An International Journal* (2017), Vol. 28, No.1, 81; Sweepnet, *Country Report on the Solid Waste Management in Lebanon* (2014), 15

<sup>4</sup> Sweepnet, *Country Report on the Solid Waste Management in Lebanon* (2014), 17

<sup>5</sup> Ibid., 19. According to the same source 15% of the waste is composted and the remaining 29% is openly dumped

<sup>6</sup> Azzi E., *Waste Management Systems in Lebanon: the benefits of a waste crisis for improvement of practices*, KTH Roya Institute of Technology, 2017, 18

<sup>7</sup> Sweepnet, *Country Report on the Solid Waste Management in Lebanon* (2014), 10

<sup>8</sup> Arif S. & Doumani F., *Cost of Environmental Degradation Due to Solid Waste Management Practices in Beirut and Mount Lebanon*, Sweepnet (2014), 28

rapid solution to the “waste crisis” that saw garbage piling up on the streets of Beirut and Mount Lebanon during the summer of 2015, a transition plan was adopted. The plan includes the construction of three coastal landfills.<sup>9</sup> However, these landfills, which are located along the coast –one in the district of Bourj Hammoud and the other close to the airport – have represented a danger to the sea that have increasingly been polluting not only the neighbouring areas but the whole coast.<sup>10</sup> These landfills thus represent Lebanon’s failure to comply with the Barcelona Convention for the Protection of the Mediterranean Sea against Pollution (1976), which Lebanon ratified in 1977.<sup>11</sup>

However, the effects of the “waste crisis” did not pass unnoticed and NGOs, enterprises and citizens mobilised in order to find practical solutions the disposal of waste. Furthermore, the transition plan also allowed municipalities to manage their waste independently<sup>12</sup>, with the result that some municipalities together with consulting enterprises set up local SWM systems in order to confront the crisis. The SWM sector in Lebanon therefore came to include multiple non-state actors operating independently from the government and became inevitably more complex.

### *The emergence of a decentralised SWM system*

Several of the interviewees expressed the same opinion that a decentralised SWM system in which cities, or group of municipalities manage the disposal of their waste independently is the best way to face the “waste crisis” at the moment. “A centralized system is not going to work” says Alexander, co-founder of Recycle Beirut, a social enterprise currently recycling the waste of 7000 households and firms in the Lebanese capital. The reason for this shared sentiment mainly lies in the widely-spread mistrust in the central government, which according to some interviewee does not have a

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<sup>9</sup> Azzi E., Waste Management Systems in Lebanon: the benefits of a waste crisis for improvement of practices, KTH Roya Institute of Technology, 2017, 13

<sup>10</sup> Massena F., “Water Pollution in Lebanon Reaching Dangerous Levels”, Al-Monitor (2017), available at: <https://www.al-monitor.com/pulse/originals/2017/07/lebanon-water-pollution-garbage-crisis.html>

<sup>11</sup> *Convention for the Protection of the Mediterranean Sea against Pollution*, Barcelona, 16<sup>th</sup> February 1976, *United Nations Treaty Series*, Vol. 1102, No. 1-16908, available at: <https://treaties.un.org/doc/Publication/UNTS/Volume%201102/v1102.pdf>

<sup>12</sup> Azzi E., Waste Management Systems in Lebanon: the benefits of a waste crisis for improvement of practices, KTH Roya Institute of Technology, 2017, 13

“constructive approach towards the [waste] crisis”. Therefore the encouragement for taking individual action with respect to the “waste crisis” is mainly the search for a solution that the government is thought unable to provide. A resident of Beit Meri, one of the municipalities which after the crisis started dealing with its own waste independently from the central government, says: “If the government had done the same project, the whole of Lebanon would be clean now!” The absence of the state is also conveyed through the shared feeling among the interviewees that the context in which recycling initiatives and individual projects were created is one where “we don’t have other options”.

It was also interesting to discover that most of the representatives of NGOs and enterprises that I met and that are currently working with SWM did not actively take part in the protests during the summer of 2015, if they participated at all. It seems therefore that their work is somehow detached from the activism that characterised the civil uprising taking place upon the outbreak of the “waste crisis”. In fact, although most interviewees recognised the positive impact that the protests of 2015 had on peoples’ awareness, they also put an emphasis on the practical positive outcomes of their work in the need to show that their action has gone beyond the protests because “criticising is not enough.”

Finally, my understanding of the functioning of the decentralised SWM system that came about is that every NGO or enterprise works within the domain that they have created for themselves –either in terms of the services that they offer or the geographical areas that they cover –and these domains are defined by two main questions: what is the state not providing? And what are the other actors in the sector not providing? The work of the entities functioning within SWM in Lebanon can be pictured as the pieces of a puzzle, as it is highly differentiated –some recycle different materials, others operate in different areas – and each actor’s work is intertwined with the work of the others.

#### *“Filling the vacuum” in Solid Waste Management as an act of resilience*

NGOs and private enterprises became more involved in SWM as the government failed to provide SWM-related services. In fact, the initiatives that were created in response to the “waste crisis” aimed to “fill the vacuum” –in the words of one of the interviewees –in the

provision of SWM-related services previously managed by the central government. Furthermore, the work of NGOs, private enterprise and citizens does not only try to cover the areas or the services that the government is failing to provide but also that other independent actors are not offering. The intersections of actors working independently from the central government attempts to restore the SWM system while renovating it at the same time. The initiatives that aim at dealing with the waste crisis in Lebanon can be seen as a modern way to actively respond to a common urban issue, overcome a dramatic situation and help cities to recover from the crisis. The “waste crisis”, in spite of marking a dramatic phase for Lebanon, also allowed NGOs, enterprises and civil society to become more involved in the SWM sector. As ‘a shock and associated damages to the system can be viewed as a unique opportunity for the system to innovate’,<sup>13</sup> several initiatives that emerged after summer 2015 in reaction to the “waste crisis” attempted to find solutions that would not only deal with the waste per se but that would do it in a sustainable way. In fact, “there is something to do far beyond recycling...we have to clean our mind”, says Joslin from Recycle Lebanon, an NGO that takes the “waste crisis” as an opportunity to not only build an environmental conscience in the Lebanese people but also to restore individuals’ sense of active citizenship. Restoration and innovation of the SWM system therefore has not only to do with waste but it is seen within a greater process of collective renovation and “it’s about how we recycle the country”, more than its waste.

#### *Public-private partnerships towards local SWM systems*

A particularly interesting expression of the phenomenon concerning the decentralisation of SWM in Lebanon is the emergence of Public-Private Partnerships between local authorities such as municipalities and small enterprises. In fact, when the contract with Sukleen ended, many municipalities in Greater Beirut found themselves dealing with the waste on their own although often lacking the technical skills and the means. Therefore, some municipalities decided independently from the central government to look for the

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<sup>13</sup> Hiroshi Maruyama, “Taxonomy and General Strategies for Resilience” in *Urban Resilience: a Transformative Approach*, ed. Yoshiki Yamagata & Hiroshi Maruyama, Springer (2016), 7

expertise of consulting enterprises. 'Municipalities had to be independent', says the founder of Cedar Environmental, whose enterprise has implemented with the Municipality of Beit Meri a local SWM system able to recycle 100% of the municipality's household waste since 2015. It has in fact been reported that "private sector participation is a key element in SWM in Lebanon...[as] normally, the private sector in Lebanon is more effective than the public sector in SWM (both at the technical and financial levels)."<sup>14</sup> This specific partnership between Cedar Environmental and the Municipality of Beit Meri can be regarded as the active initiative of local authorities in order to face the "waste crisis" independently and find local solutions. However, this partnership poses questions concerning how the formation of local SWM systems is affecting the citizens.

*Local SWM systems affecting citizens' awareness: a double-edge sword*

After the implementation of the partnership between Cedar Environmental and the Municipality of Beit Meri, some residents perceive sorting at source as a responsibility towards their community and their country. Some say that they want to be an

Sorting at source refers to the act of separating waste into different materials in the household where the waste is produced.

example for the people around them and for the neighbouring municipalities. In fact, households are the major producer of waste<sup>15</sup> and therefore the residents' behaviour with regard to sorting at source can represent valuable contribution to the overall national disposal of waste. The development of more local SWM systems, it can be claimed, has encouraged more citizens to feel responsible for their production and disposal of waste. However, for some others being more aware of the journey that their garbage undertakes after it is thrown away did not encourage them to sort at source. In fact, some interviewees admitted that knowing that someone is sorting for them in the recycling plant prompted them to ask the question: "why should I do it at home?"

<sup>14</sup> Sweepnet, *Country Report on the Solid Waste Management in Lebanon* (2014), 11

<sup>15</sup> Salha M.K, Mansoor A., "Solid Waste Collection by the Private Sector: Households' Perspective –Findings from a Study in Dar es Salaam City, Tanzania", *Habitat International* (2006), 30, 770

*The cumbersome absence of the state*

The reaction of the central government to the decentralisation of SWM in Lebanon is perceived differently by different interviewees. While a few believe that the state is not interfering with their work and that the state is not concerned with non-state actors entering the SWM sector, the majority is not of the same opinion. For example, a municipality that wants to implement a partnership over SWM with the private sector, such as the previously mentioned case of Beit Meri, has to face a long bureaucratic process. Furthermore, the length of the contract between a municipality and a consulting enterprise has to be renewed annually and at each renewal there is no guarantee that the same concession will be given the year after. "These bureaucratic delays seriously affect the performance of municipal work and possible partnerships with the private sector"<sup>16</sup> and they are in fact seen as factors that might work as a deterrent to the establishment of local SWM systems. Another obstacle that is found to interfere with the work of one of the enterprises considered is the consistent harassment that the drivers of the trucks collecting the waste, often of Syrian nationality, are subject to by the police. In fact, "like many other nations, decentralization is not a political process encouraged by the Lebanese central state actors who view it as a threat to their authority and domination over public service sectors".<sup>17</sup> However, to some, even if they recognise the interference of the state, they do not consider it a significant obstacle to their work "because they [the state] did not provide another solution. They can only do that [stop the work of non-state actors] if they provide another solution".

Further obstacles unrelated to the central government were found in lack of funds and donors, difficulties in getting municipalities involved in Public-Private Partnerships and cooperation between municipalities and non-state actors.

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<sup>16</sup> Harb M. & Atallah S., "Lebanon: A Fragmented and Incomplete Decentralization" in *Local Governments and Public Goods: Assessing Decentralization in the Arab World* (2015), ed. Harb M. & Atallah S., The Lebanese Center for Policy Studies, 206

<sup>17</sup> *Ibid.*, 191



*A decentralised SWM: a viable solution in the long-term?*

For some, a decentralised SWM system in which every municipality deals with their own waste enhances efficiency because of the competition among the neighbouring municipalities will function as an incentive.

What is more, several interviewees perceive a more local management of SWM as more trustworthy because the citizens are more aware of what happens to their waste –where it goes, how it is processed –and NGOs and enterprises see transparency as a great value of their work. Furthermore, there is the feeling that data on the waste produced and collected can be more trustworthy if provided by the local company in charge of SWM.

Although the perception on the environmental benefits of a decentralised system in response to the crisis are universally recognised among the interviewees, not everyone agrees when it comes to the financial sustainability of having a decentralised SWM. In fact, to those working in the SWM sector too small municipalities that do not produce much waste cannot deal with their own waste. The same is said about small NGOs, which are not thought to have the financial capabilities for their projects to be successful.

According to Sara from TERRE Liban, there should be a “national vision” on the disposal of waste but every municipality or group of municipalities “should gain ownership over their SWM”. Furthermore, for several other interviewees, the awareness campaigns aiming to create an environmental conscience with regard to SWM issues are thought to be a duty of the central government and not that of local authorities such as municipalities.

*Conclusion*

After the “waste crisis” started in 2015, SWM in Lebanon was pervaded by multiple non-state actors that “filled the gap” in the provision of SWM-related services. As a result of this phenomenon, a more decentralised and complex SWM system came about. While representatives of NGOs and enterprises and citizens found advantages of this more decentralised system in the increasing efficiency of service delivery, reliability and the raise of awareness among the population, some disadvantages were also identified. Several



representatives of non-state actors currently working in the SWM sector expressed their struggle with operating within a state characterised by a laborious bureaucracy and with having to confront constant financial issues and opposition from local authorities. Among the interviewees several points of disagreement could be found and whether a decentralised SWM system represents a viable solution for Lebanon in the long-term remains a question. However, in the face of the “waste crisis” action was taken and through the initiative of individuals Lebanon has once again proved its resilience and its capability not only to restore a system but to innovate it. In spite of the obstacles posed, the NGOs and the enterprises considered believe that “if you give the infrastructure, people will comply” and they are willing to continue their work, which an increasing number of clients and beneficiaries now count on.

*For the elaboration of this paper interviews were conducted with:*

Alexander McHugh – Co-founder of Recycle Beirut (5-10-2017)

Christ Dersarkissian – Solid waste expert and co-founder of SolutionsInc.sarl (26-9-2017)

Claude Raad - Board member of the Municipality of Beit Meri (31-10-2017)

Josline Khedy – Founder of Recycle Lebanon (17-10-2017)

Roy Abou Chedid – President of the Municipality of Beit Meri (26-10-17)

Sara Boukamel – Board member at TERRE Liban and environmental activist (27-9-2017)

Wadih Al-Asmar – Environmental and political activist (13-9-2017)

Ziad Abi Chaker – Environmental engineer and founder of Cedar Environmental (22-9 and 14-10-2017)

5 residents of the Municipality of Beit Meri (between 27-10 to 1-12-2017)

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