

HOUSEHOLD SOLID WASTE

Overview of Household Solid Waste Sector

In a general sense, waste is a broad term that refers to everyday items consumed by the public or materials left behind by a human activity or process, and which, due to their physical and/or chemical and biological properties become of no value and therefore neglected and intended to be discarded or disposed of. In Lebanon, the current legislations governing waste, the waste management practices and the majority of CDR's projects and contracts all tackle domestic solid waste commonly known as Municipal Solid Waste (MSW). Other types of waste should however be treated by the private entities producing such waste, under the guidance and full supervision of the concerned ministries, according to the "polluter pays" principle, as stipulated by applicable laws and regulations.

Background and context: the concerned authorities in Lebanon have been working towards the promotion of a comprehensive waste management plan that is compatible with the prevalent socio-political situation. This plan aims at translating into actions the desired waste management expectations, in complementarity with sustainable development principles of other national programs and policies, something that would ultimately reduce environmental degradation.

The Council of Ministers' decision No.1 dated 30/3/2010 established a committee headed by the Prime Minister and composed of the Minister of Dis-

placed, The Minister of State for Administrative reform, the Minister of Interior and Municipalities, the Minister of Environment, the Minister of Energy and Water and the President of CDR. This committee was commissioned to develop a comprehensive waste management plan proposal covering all Lebanese regions, and tackling in particular the following:

- Techniques and methods to be adopted for the implementation of the plan;
- Suggested sites for the implementation of the plan;
- Fund raising mechanisms;
- The plan oversight authority.

The committee was also requested to present recommendations concerning the measures and procedures to be taken with regard to the temporary landfill in Naameh.

And on 1/9/2010, the Council of Ministers issued decision No. 55, to endorse the recommendations of the inter-ministerial committee summarized below:

- 1-Adopt thermal decomposition and waste-to-energy technologies in large cities;
- 2-Adopt the 2006 master plan and study the possibility of adoption of thermal decomposition in the rest of the country;
- 3-Engage and facilitate the tasks of the private sector in the provision of Solid Waste Management Services through turnkey participation (from collection to final treatment) or through the following two different options:
 - a.Collection
 - b.Treatment
- 4-Mandate the Ministry of Environment (MoE) and the CDR to merge their respective proposed plans, in synergy with what was agreed upon above;
- 5-Mandate the Ministry of Energy and Water to propose a

legislation that entitles the private sector to produce and sell energy generated from waste;

6-Offer incentives to the municipalities that will host waste treatment facilities: thermal decomposition plants, processing stations, composting stations and landfills;

7-Mandate the CDR, in coordination with the MoE, to contract an international consulting firm to:

- Select the most appropriate and proven solutions adapted to the Lebanese case (based on the spirit of the plan);
- Develop the terms of reference for the preliminary shortlisting of the thermal decomposition companies (Due diligence to short list only proven technologies);
- Assess and classify companies;
- Draft terms of reference for the final tender;
- Bids appraisal;
- Monitor the implementation

8-Mandate the Ministry of Environment to contract an international consulting firm to control the quality of the workflow according to the spirit of the plan and ensure good work progress;

9-Mandate the Ministry of Environment to hire a local consulting firm to conduct an awareness and guidance campaign aimed at winning the public approval on the thermal decomposition technique ;

10- Vest the Prime Minister with the power to oversee implementation and secure funding, while benefiting from successful experiences in neighboring countries.

Main Challenges:

- One of the biggest challenges facing the household waste in Lebanon lies in landfill locations, whether they are ordinary dumps or landfill sites for final dumping



following sorting and recycling; another challenge is dealing with waste before reaching the dumps. Therefore, the emphasis should be moved towards recycling and composting.

- Solid waste management constitutes also a great challenge from a financial perspective, in particular in a developing country like Lebanon, due to the absence of sufficient adequate regulatory legislations.

- The legislations on household solid waste management in Lebanon are shallow, contradictory and unclear, especially with respect to the role and tasks distribution between the concerned departments and ministries. A draft law on integrated waste management is currently underway.

- The Union of Municipalities, upon the administrative and technical support of the Ministry of Environment and Ministry of Interior and Municipalities, should consolidate the efforts for the selection of locations for dumps and sorting and composting facilities. This will be achieved through the establishment of a constructive dialogue and consultation process with the civil society, who would hinder the implementation of projects, if not included in the process.

Main achievements of the (1992-2013) period

The Lebanese governments had not adopted a central policy or a unified management strategy for the treatment of solid waste in Lebanon, due to the fact that waste management used to fall within the prerogatives of municipalities, who acted as the administration overseeing the proper execution of these services. However, the Lebanese civil war caused a negative impact on the municipalities' financial, administrative and technical capacities, which reflected negatively on the continuity of these

services. In the beginning of 1992, the government assigned the management of this sector in the capital and the suburbs to CDR, due to the incapacity of municipalities to deal with this problem. Since that date, the CDR has been working, in coordination with the concerned ministries, to put in place a comprehensive policy that provides the best solutions for Lebanon.

Emergency plan for the treatment of solid waste in Greater Beirut: Following the closure of the Bourj Hammoud dumpsite in January 1997, the government decided to implement an urgent plan for the treatment of solid waste in Greater Beirut. A contract was signed with SUKOMI to expand and raise the capacity of the Amrousieh and Qarantina solid waste treatment plants, upgrade the sorting process, separate recyclable material and extract compost material. This plan also included the construction of sanitary landfills for Greater Beirut and its suburbs. Two sanitary landfills were established in Na'meh and Bsalim. Both are currently in operation.

Rehabilitation of Tripoli dumpsite: The uncontrolled dumpsite located on Tripoli coastline has been rehabilitated. A sea wall was constructed around it to reduce environmental risks. Moreover, the necessary equipment for operating the dumpsite in an environmentally friendly way was procured in order to upgrade solid waste management in Tripoli region. The dumpsite has been in operation since 1998.

Construction of Zahleh sanitary landfill: The new sanitary landfill serving Zahleh caza is complete and the required vehicles and equipment for its operation have been procured. The works and procurements were financed by the World Bank. This dumpsite has been in operation since

2001.

Implementation of a sanitary landfill and a solid waste treatment plant project in the framework of the comprehensive waste management plan in Baalbeck caza.

Procurement of waste collection equipment for various regions: Within the framework of the urgent program, the World Bank funded the procurement of waste collection equipment, including vehicles, street sweeping equipment and special containers. These were distributed on all Lebanese regions. In the second phase of this project and within the framework of the Household Solid Waste Management Plan (SWEMP), the World Bank funded the procurement of waste collection and street sweeping equipment for the regions where construction works of sanitary landfills or rehabilitation of uncontrolled dumpsites were completed, such as Beirut, Zahleh and Tripoli.

Hospital waste treatment: In 1998, the CDR awarded the hospital waste treatment study, funded by the World Bank, to ERM. Several phases of the study are complete. This has allowed concerned parties to take decisions regarding the most appropriate means for hospital waste treatment. The Ministries of Environment and Public Health together with CDR have decided to build a central incinerator, which complies with international standards and operates at a minimum temperature of 1200oC, as a possible means of hospital waste treatment. The environmental impact assessment and the design study have not been prepared because the appropriate construction site has not been identified yet.



Marketing of compost and recyclable material: The feasibility study for marketing organic compost and recyclable materials generated by the Quarantina, Amroussieh and other treatment plants was completed by AR-CADIS/ EUROCONSULT in December 2003. The study was financed by the World Bank within the framework of SWEMP.

Financial audit of amounts due to SUKLEEN and SUKOMI: According to the Council of Minister's Decision No. 16 dated 14/8/2003 concerning the launching of an international tender for constructing and operating the solid waste treatment plants and landfills for a period of ten years, and in order to ensure the success of this tender, CDR was assigned to audit the amounts due to SUKLEEN and SUKOMI. Accordingly, the audit contract was awarded on 18/9/2003 to PRICEWATERHOUSECOOPERS, which is an international audit firm.

Technical Assistance for identification of treatment plants and landfill locations and preparation of environmental impact assessment: To implement the Council of Minister's directives concerning the identification of treatment plant and landfill locations, CDR awarded the impact assessment to Consultant Rafic Khoury who started his mandate in the third quarter of 2003. The Consultant prepared the environmental impact assessment of the locations identified by the technical committee commissioned with this task.

The comprehensive Household Solid Waste Management Plan: The CDR put in place a compre-

hensive plan that was approved by the Council of Ministers in 2006. The plan is based on the following principles:

1-Recycling and composting to the greatest extent in order to minimize the quantity of dumped waste; and distribution of recycling, sorting and composting plants on all cazas, with one or more sanitary landfills in each service area.

2-For this purpose, Lebanon shall be divided into four service areas:

- The North and Akkar governorates
- The Bekaa and Baalbeck-Hermel governorates
- The South and Nabatiyeh governorates
- Mount Lebanon and Beirut governorates

3-Create an incentives scheme for the municipalities that will host sorting stations, composting plants, sanitary landfills or incinerator centers. These municipalities will be paid a certain amount per every ton of solid waste, as proposed in the plan and according to laws and decrees that will be issued in this respect.

4-Municipalities shall deal with sweeping, collection and transport of waste to sorting stations and composting plants at their own expenses.

5-The contractor shall be responsible for financing the relevant study, executing and preparing the sanitary landfills, incinerator centers, sorting stations and composting plants. The contractor shall also be charged with the management

of these facilities for ten years on the basis of a certain fee per each ton of transported and treated waste.

Maritime and back-filling works in Saida waste mountain area: the Council of Ministers issued Decision No. 37, dated 26/5/2009, directing the CDR to develop the necessary studies and draft decrees, and to implement the maritime and back-filling works in Saida waste mountain area. Funding is secured through the US\$ 20 million grant donated by the Kingdom of Saudi Arabia, and the remainder of the cost is financed by the Lebanese government.

Progress during 2014:

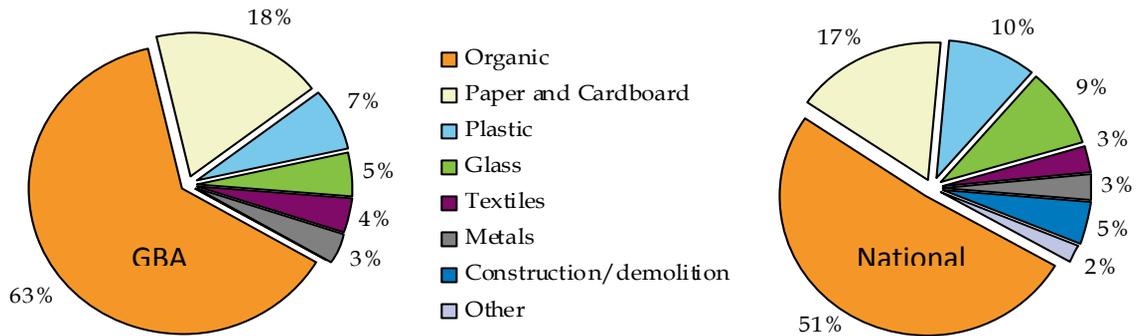
While contracts signed with Averda Group (Sukleen and Sukomi) were being implemented in due course in 2014, the Council of Ministers took consecutive decisions to prepare the grounds for the phase following the termination of these contracts by the beginning of 2015.

On 27/3/2014, upon the decision of the Council of Ministers an inter-ministerial committee was formed headed by the prime minister and composed of the following members: the deputy prime minister, Minister of Agriculture, Minister of Energy and Water, Minister of Finance, Minister of Interior and Municipalities, Minister of State for Administrative Reform, the Minister of Environment as a member holding a casting vote, and the president of the Council for Development and Reconstruction. At a later stage the Minister of Industry was included in this inter-ministerial committee upon the decision of the Council of Ministers. The Council of Ministers commissioned the said committee to develop a report on the comprehensive plan for



solid waste management, and to find alternative solutions to the landfills of Naameh and Tripoli.

After said committee held several meetings, and after the suggestions made by said committee had been discussed in several sessions held by the Council of Ministers, the latter approved to commission the CDR to develop a tender terms of reference to outsource a) the sweeping and collection processes and b) the treatment and dumping processes, upon the decision (46) issued on 30/10/2014 in which the service areas were divided into five areas covering the Lebanese territories.



Zahle Landfill Rehabilitation



Zahle Landfill Rehabilitation



Sorting & Composting Process