

Solid Waste



The Council of Ministers initially approved the Household Solid Waste Management Plan proposed by CDR, pursuant to Decision No.1 dated 28/6/2006, on the following bases:

- a) Approval of proposed dump sites in the North (the North and Akkar governorates) and Bekaa (Bekaa and Baalbeck- Hermel governorates).
- b) Replacement of the Basfour Farm site in the South (the South and Nabatieh governorates) with another site in the same region to be selected in consultation with the concerned municipal councils.
- c) Approval of the concept of establishing two dump sites in Beirut and Mount Lebanon (Beirut and Mount Lebanon governorates), one in Iqlim Al - Kharoub and the other in Jbeil Caza. Solid waste will be treated in equal proportions in both sites.

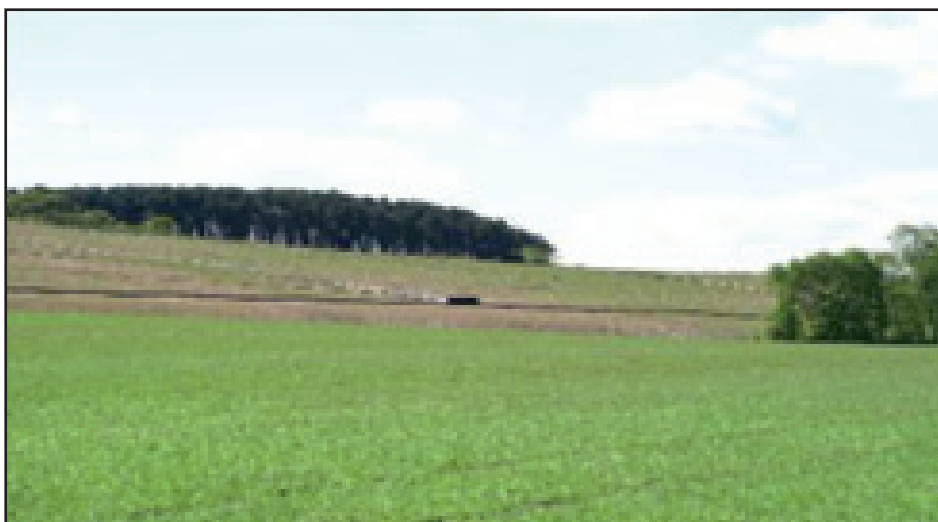
The above Council of Ministers

decision also covered the preliminary approval of the required expropriations for implementing the proposed plan and commissioning CDR to prepare the related tender documents, including:

- a) Contracting a private independent company to manage and follow up this file and to ensure implementation of all environmental and health conditions.
- b) Ensuring the contractor's compliance with all environmental conditions related to technical control, through periodical publications that cover the environmental components, i.e soil, water, ambient air and air far from the landfills.
- c) The incentives to be provided to the concerned municipalities.

Regarding the Naameh landfill, the Council of Ministers approved the following:

- 1 - Expropriation of about 25,000



Rehabilitation of a land fill - Zahle



Sorting and Composting - Naameh

m² for expansion of the existing landfill, in order to ensure its continued use until the alternative landfill covered in the Household Solid Waste Management Plan (SWEMP) is ready.

- 2 - Implementing the previous decisions taken by the Council of Ministers concerning Naameh sanitary landfill and compensating its municipality and its neighborhood, according to the provisions of these decisions, in particular Decision No. 27 dated 11/7/ 2002 (Article 2), Decision No. 51 dated 16/10/2002 followed by Decree No. 9093 dated 15/11/2002 (Amendment of Decree No. 1917 dated 6/4/1979 related to identifying the bases and rules for allocating the Autonomous Municipal Fund) and Decision No. 16 dated 14/8/2003 (Article d).

CDR is working currently, in

coordination with the Ministry of Environment, on the implementation of the above decision, including the preparation of tender documents, awarding the household solid waste treatment and landfill projects, in addition to initiating the environmental impact assessment of proposed sites, the studies related to rehabilitation of uncontrolled dumpsites and improvement of treatment operation, and the awareness campaigns to reduce waste and promote sorting at source.

It became clear to CDR through its work that the estimated cost for implementing the comprehensive plan covered by the Council of Ministers Decision No.1, dated 28/6/2006, is very high due to the high interest rates and high risk factor of investments needed to provide the installations and equipment. This will reflect negatively on the general budget and eventually limit the potential participation of local contractors in the relevant tender.

Accordingly, CDR started studying several contracting proposals and alternative methods for securing funding sources, in order to reduce the cost. This included the resort to low interest loans, risk reduction and increasing competition by allowing Lebanese contractors to participate in the supply of equipment, as well as in the construction, treatment and landfill works.

CDR submitted these proposals to the Council of Ministers, which approved in its Decision No 88, dated 10/11/2007: 1) To commission a committee formed of representatives of the Ministries of the Interior and Municipalities, the Environment and Finance and CDR, which will work under the supervision of the Prime Minister. This Committee shall propose the proper solutions for the SWEMP tender in the light of the options provided by CDR, to be submitted to the Council of Ministers for approval; and 2) to extend the sweeping, collection and landfill contracts for 3 years under the same conditions, in order to ensure continuity of work. It should be noted that the comprehensive plan approved by the Council of Ministers is based on the following principles:

- 1 - Recycling and composting to the greatest extent in order to reduce the quantity of dumped waste; and distribution of recycling, sorting and composting plants on all cazas, with one or more sanitary landfill in each service area.
- 2 - For this purpose, Lebanon shall be divided into four service areas:

- The North and Akkar governorates
 - The Beka'a and Baalbeck governorates
 - The South and Nabatieh governorates
 - Mount Lebanon and Beirut governorates
- 3 - To provide incentives to municipalities whose lands will be used for 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 - Sweeping, collection and transport of waste to sorting stations and composting plants shall be handled by the municipalities at their own expense.
- 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.

Achievements to date

Urgent plan for the treatment of solid waste in Greater Beirut: The following 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 Amroussieh and Quarantina 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: Rehabilitation works of the uncontrolled dumpsite located on Tripoli seacoast has been completed. A sea wall was constructed around it to reduce environmental risks. The necessary equipment for operating the dumpsite in an environmentally safe way 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.

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 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: The hospital waste treatment study, funded by the World Bank, was awarded to ERM in 1998. Several phases of the study are complete. This has allowed concerned parties to take the 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 temperature of 1200°C minimum, 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 is not known 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 ARCADIS/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 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 Price Waterhouse Coopers.

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

Projects in Progress

Operation contracts: CDR signed a contract with SUKLEEN for the collection of household solid waste and street sweeping in Greater Beirut and some areas of Mount Lebanon. Two contracts were also signed with SUKOMI for operation of the Amrousieh and Quarantina solid waste treatment plants and the Coral composting plant, as well as the construction and operation of Naamah and Bsalim sanitary landfills. Currently, CDR is commissioned to launch a new international tender for solid waste treatment and landfills, provided that contracts with SUKOMI are

terminated within the periods specified in the agreements, and that such termination does not occur before the new contractor(s) takes over.

The works are currently progressing within the framework of the urgent plan for Greater Beirut. After fully utilizing cells (1) and (2) of the Naameh sanitary landfill site, which cover an area of 120,000 m² with a combined capacity of two million tons of waste, an additional area of 62,000 m² was prepared for a new cell (3). The latter is currently being used as a sanitary landfill for the solid waste produced by Greater Beirut and some areas in Mount Lebanon. Due to the necessity of continuing to use this sanitary landfill until the alternative location designated in the SWEMP project is ready, the Council of Ministers approved, under Decision No. of 28/6/2006, the expropriation of an additional area of about 25,000 m² for expanding this landfill.

With regard to the SUKLEEN contract for solid waste collection and street sweeping in Greater Beirut, which was expected to expire on 31st December 2000, Addendum No. 5 extended this contract until the Minister of the Interior and Municipalities decides to terminate it.

Operation of Tripoli dumpsite: After launching an international invitation to tender in 1999, CDR signed a contract with BATCO for the operation of Tripoli dumpsite. This contract, which is renewable annually, is financed by the Al-Fayha Union of Municipalities. The contract aims to treat solid waste by

using appropriate sanitary dumping methods, extraction of generated gas and incineration. In this connection, the Council of Ministers issued Decision No. 28, dated 17/7/2003, directing CDR to prepare a study for expanding Tripoli dumpsite and extending the period of its use. After submitting to the Council of Ministers the study prepared by Dar al Handassa (Nazih Taleb) related to construction of a sorting and composting plant on plots No. 812,815 and 1123 adjacent to the dumpsite (total area of around 13000 m²) and expansion of dumpsite capacity by constructing a 9-10m high Gabion reinforced wall around its perimeter in order to be able to fill the spaces between this wall and the present dumpsite, the Council of Ministers approved, in its Decision No. 41 dated 18/2/2005, to include within the 2005 general budget and its annexes a draft law for projects amounting to US\$ 12 million, distributed over five years, to cover the cost of expanding and operating the sanitary dumpsite.

Operation of Zahleh landfill: In December 2001, CDR signed a contract with SERDIM/SCS to operate the new sanitary landfill in Zahleh and to transfer the contents of the old uncontrolled dumpsite to the new landfill. The two-year contract was financed by the World Bank within the framework of SWEMP. Upon expiry, the Council of Ministers approved, in its Decision No. 70 dated 12/2/2004, the extension of Zahleh landfill operation and supervision contract for three additional years ending on 31/12/2006, funded out of the

general budget.

Zahle landfill and treatment plant with associated equipment belong are the property of Zahle municipality. Both were supplied recently with the necessary equipment, financed by USAIDS. The Council of Ministers Decision No. 62 dated 21/5/2007, concerning the delivery of the landfill and the transfer of its operation to Zahle-Maalaka municipality, was issued as an encouragement for this municipality to take over its operation in the future and to initiate other municipalities to do the same.

Normandy dumpsite: The Normandy uncontrolled dumpsite on the seashore is located within the premises of Beirut Central District (BCD) reconstruction and development plan awarded by the government to Solidere. The project includes sorting and treating of existing waste and recovery of suitable materials to be used for back-filling a reclaimed area. The project cost amounts to US\$ 61 million, including supervision. The technical consultant has been appointed to supervise this project. It should be noted that 80% of the works have been completed while the remaining 20% are suspended at present awaiting the results of negotiations and arbitration between Solidere and the contractor. The current work plan will be directed toward studying and rehabilitating the reclaimed areas in preparation for the design and implementation of infrastructure works. The dumpsite treatment project is expected to be complete within three years, including the infrastructure studies and designs.

Preparing tender documents for solid waste collection, sweeping, treatment and landfills for a period of ten years in all Lebanese regions: CDR signed a contract on 3/10/2003 with Fichtner Consultants to provide consultancy services for this project. The Lebanese regions were divided into four service areas (Beirut and Mount Lebanon, the North and Akkar, the South and Nabatiyeh, Beka'a and Baalbeck-Hermel). After completing the tender documents in November 2003, and issuing the Council of Ministers Decision No. 68, dated 20/5/2004, the basic tender documents were amended to cover new instructions that require contractors to include in their offers the methods and means adopted for disposal of solid waste. At that time, the Ministries of Environment and the Interior and Municipalities had some comments on the Tender Terms and Conditions. Following the issue of the Council of Ministers Decision No. 1, dated 28/6/2006, and the approval of CDR's proposed plan (June 2006) for household solid waste management, CDR is now preparing the final copy of the tender documents for launching the tender.

Projects under Preparation

Construction and operation of waste treatment plants and sanitary landfills in all regions: In response to the Council of Ministers decisions commissioning CDR to launch an international invitation to tender for the construction and operation of treatment plants and sanitary landfills in all Lebanese regions,

CDR shall award these contracts based on the terms and conditions prepared by FICHTNER Consultants. The Council of Ministers specified that these contracts shall be valid for ten years. Lebanon was divided into four service areas for this purpose, as mentioned earlier.

Supervision of construction and operation of treatment and sanitary landfill sites: The contracts for the construction and operation of treatment plants and sanitary landfills in all Lebanese regions are expected to be awarded simultaneously with the related supervision contracts.