CONNECTIVE CITIES

Municipal Recovery from Covid-19 Pandemic

Expert Mission: Sustainable Waste Management

Partners of Connective Cities

Deutscher Städtetag

ENGAGEMENT GLOBAL
Service für Entwicklungsinitiativen

with its
SERVICE AGENCY
COMMUNITIES IN ONE WORLD

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Commissioned by

Federal Ministry for Economic Cooperation and Development

Recap of Session 3.0 (8 February. 2022)

Thematic focus: **Cement industry and RDF and feedback on plastic recycling proposals by municipalities**

Proposals were presented by Herbon-Palestine, Ras El-Matn-Lebanon, and Jerash- Jordan

a) **Waste Management issues are "long and winding roads"**

b) **Stick to your priorities and try to commit mayors and other decision makers**

c) **close the gap between the legal setting and the reality on local level**

d) **Try to get more money for waste management issues**

e) **Separate organic fractions and get them composted (into high quality product for agriculture)**

f) **Improvement takes time – also in Waste Management**

Based on discussion with participants, the topic of preparing SWM plans will be the focus of this fourth session.

Proposal for a 5th session on the 26th July 2022.

4th Survey - May 10th, 2022
Waste Management Issues - Exchange with experts from six Lebanese Municipalities

Exchange via BigBlueButton

Lebanon & Elze (Germany)

Ressource Abfall GmbH

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Agenda from my side:

1) Short update: What did you do in waste management since last meeting
2) Short review of MoM 3rd Survey
3) Key issues for today:
   a) SWM Plans (general approach)
   b) Waste to Energy – how it works / limitations
   c) Project Tender by EU for three WM centers in Lebanon
4) Other issues from Lebanese Municipalities
5) Next Meeting

2)

Short review of MoM 3rd Survey

See file:

2022-02-08_Municipalities+Part-2-Survey-1_Waste-Man_GIZ-Summary-V-F

SWM Plans (general approach)

3 a)

Waste Management Concept

Financial and Operational concept

Structural Integration

Experienced Technical Realisation

Realistic Time Schedule

SWM Plans (general approach)
Main Content – often with a horizon of 10 years:

3 a)

- Inventory and Assessment of existing solid waste management situation (SWM)
- Assessment and Evaluation of existing Institutional and Organizational Set-up
- Forecasts of Quantities regarding SWM fractions
- Development of Integrated Solid Waste Management Concept (collection, transfer, intended treatment facilities, awareness campaigns etc.

SWM Plans (general approach)
Case Study Morocco

a) The legal setting

3 a)

First waste management law 28/00 from 2006:

- SWM plans to be elaborated until end of 2011:
  - national plan for dangerous wastes
  - regional plans for industrial and agricultural wastes
  - provincial and municipal plans for household wastes: municipal plans have to comply with provincial orientations
- Municipalities are in charge of household waste management and have to set SWM fee rate to be paid by users

SWM Plans (general approach)
Case Study Morocco
b) The way given to implement on local level

3 a)

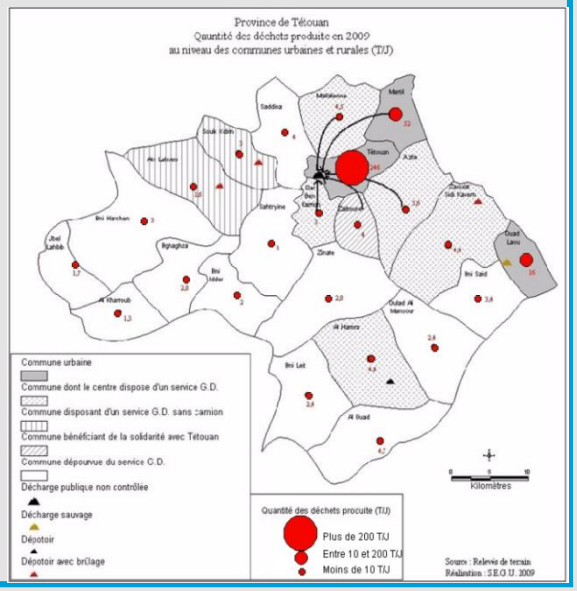
- Launching of provincial waste management plans with national and international support
- Participative elaboration procedure of IWMP: involvement of representatives from all municipalities, approval by the Governor of the Province

SWM Plans (general approach)
Case Study Morocco
c) Main difficulties – example Province Tétouan

3 a)

- Lack of appropriate structures:
  - Sustainable financing schemes still have to be established
  - No existing department specially dedicated to SWM in the provincial administration
- Diverging local interests:
  - Large gap between the 3 cities and the 20 rural villages in terms of SWM
  - NIMBY reactions regarding landfill site identification

SWM in the Province Tétouan



SWM Plans (general approach)
Case Study Morocco
d) Strategies to solve problems

3 a)

Tétouan landfill rehabilitation project

- Creation of a National SWM Program (about 3,7 billion € within 15 years) to financially support SWM improvement measures
- Integration of international experience and national pilot projects
- Ministries of Interior and Environment actively involved in the elaboration of the SWM provincial plan

SWM Plans (general approach) Case Study Morocco

e) and their limits

3 a)

- The unclear situation of financing hampers realistic IWMP
- The allocation of waste management tasks to the municipal level is far beyond their capabilities in nearly all cases, especially concerning treatment and disposal
- Local interests diverging from national expectations regarding environment protection

Wild dump in Oued Laou

SWM Plans (general approach) Conclusions:

3 a)

- To close the gap between the legal setting and the reality on local level - additional to conception and technical planning - it is required that:
  - Public's and politician's awareness must be risen
  - Sustainable financial mechanisms must be established
  - Cooperation between various institutions must be promoted to improve future practices
  - Integration of waste pickers must be organized
  - Try to separate site selection issues from SWM Plans

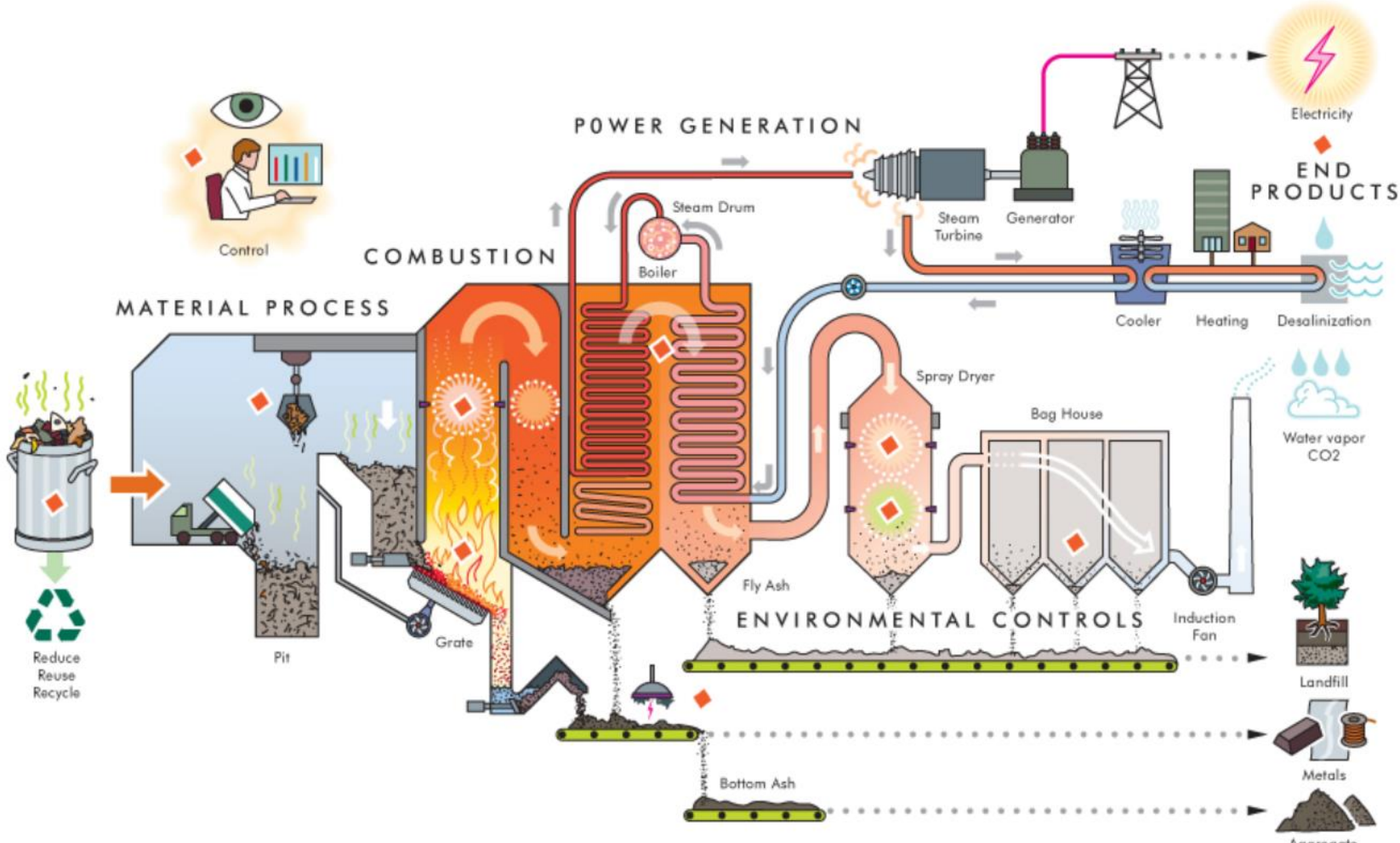
SWM Plans (general approach) Conclusions+Timeframe

3 a)

Task	Your Expect.	Experience from Germany and other countries
Time to establish general structures		> 1 year
Time for waste man. Concept (SWM)		Approx. 0,5 - 1 year
Time for sel. of operational concept		Approx. 0,5 - 1 year
Time for technical planning		Approx. 0,5 - 1 year
Time for approval procedure		Approx. 0,5 - 1 year
Time for constr. & commissioning		Approx. 0,8 – 1,5 years
Time until plant runs „really well“		Approx. 0,8 – 1,5 years

Waste to Energy (WtE) – how it works / limitations

3 b)



Waste to Energy (WtE) – how it works / limitations Some Key Figures

3 b)

1. Energy content of

Type of Waste	Net Calorific Value (NCV)
	[MJ/Mg]
MHW	8.000 - 12.000
Rejects with lower content of wet organics	11.000 - 16.000
High quality RDF	> 18.000

2. Temperature control in furnace (> 850 °C) and on the way to exhaust gas treatment is important to prevent emissions of complex hydrocarbons like dioxins

3. Energy efficiency is only given in a certain range - about 50%, see Hamburg data – if steam and electricity is used. Only electricity may give slightly more than 30%

4. About 30% of input reappear as ashes and a few percent as filter dust, which requires precaution as hazardous waste.

Project Tender by EU for three WM centers in Lebanon Estimated results according to Tender

3 c)

1. Three waste management (WM) centers are established; namely,
   a) a sorting center;
   b) a composting center; and
   c) an incineration energy recovery system.
2. 105 tons of daily waste collected from municipalities are managed and treated in the centers (with an ultimate capacity of 150 daily tons to eventually treat from surrounding regions who are also located on the Beirut river)
3. Community's awareness on waste management is raised

Project Tender by EU for three WM centers in Lebanon Main Activities according to Tender

3 c)

1. To hold monthly awareness campaigns on WM for the residents of the municipalities to adopt it more efficiently, across the project;
2. To build Waste Management (WM) Centers, to ensure a comprehensive and sustainable solution for the wastes.
3. To provide seven capacity building sessions to the targeted areas' municipalities' members on successful sustainable WM solutions, to institutionalize the activities, and ensure their sustainability
4. To train the WM centers recruited employees on the different tasks in the waste management value chain at the centers, through two trainings/week for a month

Project Tender by EU for three WM centers in Lebanon Few comments by RA – TS

3 c)

1. Project regarded as combination of "classic" SWM plan and next implementation step; (+) less theory, faster "improvement"
2. Main Activities differ largely in relation to target groups and technological approach; (-) difficult to find capable companies active in all areas
3. 150 tons/d x 365 d/year = 55.000 tons/year total – out of which about 30.000 tons/year (3.3 tons/hr) are expected for incineration – is a very small quantity regarding "incineration energy recovery systems"; (-)
4. Trainings of the WM centers recruited employees needs more repetition over a longer period; (-) fluctuation of employees

As long as EU would be flexible to adjust in relation to Nos 2 and 4 from my point of view it would be preferred to start. – But operation costs are an issue, especially related to No 3

4th Survey – May 10th, 2022 Waste Management Issues – Exchange with experts from Leb. Mun.

Please consider:

a) Waste Management issues are “long and winding roads”

b) Stick to your priorities and try to commit mayors and other decision makers

c) close the gap between the legal setting and the reality on local level

d) Try to get more money for waste management issues

5)

e) Separate organic fractions and get them composted (into high quality product for agriculture)

f) Improvement takes time – also in Waste Management

4th Survey – May 10th, 2022 Waste Management Issues – Exchange with experts from Leb. Mun.

Next Survey: Tuesday,

July 26th, 14:00 CET

Stay strong !

Thanks for your attention!

For further information:

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Wrapping up

Focus of next session