Topic:
Urban Solid Waste (USW) social mapping

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Mexico produces around 41 million tons/year of USW
A third of Mexico’s USW is produced mainly in two regions of the country: Mexico State (EDOMEX) and the Federal District (DF) (both include Mexico city).
• The D.F. produces around 12,600 ton of USW daily (SMADF 2011) (with a per capita production of 1.5 kg);
• Until 2011, D.F.’s USW was deposited in the Sanitary Landfill Bordo Poniente IV Stage (RSBPIV), located in the State of Mexico.
• This landfill was closed down because it exceeded it’s time and capacity as FWS (Final Waste Site) (as well as the environment passive it represents).
• The State of Mexico generates aprox. 15,400 ton of USW daily (Tovar et al. 2011), with a per capita production of 0.95 kg.
• These USW is deposited in municipal and regional landfill’s, and until 2011, in the Sanitary Landfill Bordo Poniente IV Stage (RSBPIV).
• Most of Mexico State’s FWS are located in:
  a) Hydrological micro-watersheds,
  b) Underground aquifer recharge systems and superficial waterbodies
  c) Forest areas
  d) Food production agricultural systems
  e) Close to populated areas

http://evalplandesru.colpos.mx/red.php
Social System of Landfill sites (FWS) in Mexico State
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1st European Conference on Social Networks - Barcelona
Mensaje enviado el jueves 25 de octubre de 2012
Palabras clave: basurero a cielo abierto otumba camiones recolector

Otra imagen donde se observa el entorno del lugar, los RSU que no han sido cubiertos a pocos metros de las nopaleras que cultivan en la zona.

Message sent on Thursday 26 of July of 2012
Tags: pepenador sitio san martin

Mensaje enviado el jueves 25 de octubre de 2012
Palabras clave: basurero a cielo abierto otumba

Palabras clave: basurero a cielo abierto otumba entorno
In that direction…

- The management of USW, in DF and Mexico State, is of such magnitude that:
- It is integrated by a multiplicity of actors, interrelations and feedback proceedings
- That continue to modify on time and enliven the USW management as an integrated systemic structure in constant evolution.

Therefore…

- => It is a system that acquires unique social delimitations, and generates a diversity of problems and tendencies
Tendencies an related problems

• It is yet unknown:
  a) The exact quantity of USW generated,
  b) The real recycling capacity existent in municipalities and communities
  c) The final disposition dynamics (since almost a third part of USW is dispersed in the environment).
  d) The real environmental and health impact –local and regional- (through evaluations and verifications) that this dynamic is producing.

Furthermore:

• Mexico State’s FWS system aquired a different dynamic with the incorporation of the USW coming from DF (once Bordo Poniente was closed).
• This phenomenon has not beed studied as a dynamic social system.
• The population growth in the communities of Mexico State and DF has amplified the system.
• Because of this, the number of FWS will increase, as well as the dimensions of each FWS.
The foregoing has generated decision making based more in assumptions and inferences which has extended the error margin in the management process of USW in Mexico.

This leads to contemplate the following question:

¿What is the organizative social pattern that prevails behind the USW management system in Mexico State and DF?
Methods and tools

Assuming that: USW are themselves generators of social relations, analysis was done to: identified vinculation processes within the social system in charge of managing USW.

For this the following was done.

• In situ data collection (interviews, questionnaires, voice recordings and photographs).
• Involving municipal representatives (municipalities, companies and NGO´s)
• Use of communication technologies (use of Ojovoz app to track the FWS)
• and social Network Analysis (to identified social patterns of organization)
Results: ¿Where is the USW generated?
Results: ¿Where is the USW generated?

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<tr>
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<tr>
<td>Others</td>
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¿Who manages USW in the municipalities?:

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¿Is there any coordination between municipalities to manage USW?
FWS System

- ¿Where is it deposited the USW?

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<td>Collection centers</td>
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<tr>
<td>Waste company</td>
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<td>5.36</td>
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<td>Transfer center of other municipality</td>
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<tr>
<td>Separation plant of the municipality</td>
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<td><strong>Total</strong></td>
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</table>
FWS system profile:
¿Who works at the landfill and under what conditions?

Kind of workers who managed the FDS

- Male Employees: 40.86%
- Female Employees: 14.32%
- Male Pickers: 42.93%
- Female Pickers: 1.88%
Preparation degreee of FWS managers

Only 48% have degrees or higher degrees but in areas NOT related to the FWS.
Life remaining time of each FWS that currently operate in the State of Mexico (per municipality)
Material flow between regions and FWS
Other results and conclusions

• A data base was obtained that is currently being analyzed that contains the following:
  a) Around 1,500 photographs showing the operation conditions and location of 105 municipalities of Mexico State.
  b) Statistical data of each FWS (incoming quantity of USW, infrastructure, collectors, etc.)
  c) Biogas generation of the FWS municipal systems in the State of Mexico (not including Bordo Poniente), this production will extend for 60 years
  d) Web: http://evalplandesru.colpos.mx/red.php
Acknowledgments

• National Council of Science and Technology (CONACyT)
• Mexico State Environment Ministry
• Municipal Councils for Biodiversity Protection and Sustainable Development (COMPROMOBIDES)
• Mexico State Town Councils