



Analysis model for waste management service resilience

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Operation of waste management service is a main issue of post crisis organization. Disasters (storm, flood, earthquake...) can create huge quantities of waste which overwhelm operations of waste management service. Collect and treat of this waste can be very difficult. In such a case, emergency and recovery operations can be disturbed (Brown et al., 2011). That's why we suggest to improve resilience of waste management service. Resilience of waste management service is defined as its ability to recover an operation acceptable to the urban system on which it was established and for which it was created (Beraud, 2013).

On based of work of Barroca and al. (2012), a model for analyzing resilience of waste management service was constructed. This model is based on three complementary types of resilience:

- i. cognitive resilience: study of capacity of waste management service to know waste management needs of the urban system. For this, a method allowing to quantify and to describe the waste that could be generated by flood was developed ;
- ii. functional resilience: study of capacity of waste management service to maintain an acceptable operating level compared with the urban system solicitations. For this, vulnerability assessment methods and reliability assessment methods were applied ;
- iii. organisational resilience: study of capacity of waste management service to mobilize others waste management infrastructures in the larger scale, if it is unable to adapt itself to perturbation.

In this poster presentation, we suggest to present this conceptual model applied to flooding.

Barroca, B., D. Serre, and Y. Diab (2012). Le concept de résilience à l'épreuve du génie urbain. [The resilience concept: an urban engineering perspective.] *Vertigo - la revue électronique en sciences de l'environnement* 12(2), doi: 10.4000/vertigo.12469.

Beraud, H. (2013). Initier la résilience du service de gestion des déchets aux catastrophes naturelles. Le cas des territoires urbains et de l'inondation. [Initiating resilience in waste management following natural catastrophes. The case of flooding in urban areas.] Doctoral thesis, University of Paris-Est.

Brown, C., Milke, M. and Seville, E. (2011), Disaster waste management: A review article. *Waste Management* 31: 1085-98, doi:10.1016/j.wasman.2011.01.027