



Flood resilience urban territories. Flood resilience urban territories.

Hélène Beraud (1), Bruno Barroca (2), and Gilles Hubert (3)

(1) PhD student, Université Paris Est - Marne la Vallée, LEESU, Génie urbain, France (heleneberaud@yahoo.fr), (2) Assistant professor, Université Paris Est - Marne la Vallée, LEESU, Génie urbain, France (Bruno.Barroca@univ-mlv.fr), (3) Professor, Université Paris Est - Marne la Vallée, LEESU, Génie urbain, France (Gilles.Hubert@univ-mlv.fr)

The flood's impact during the last twenty years on French territory reveals our lack of preparation towards large-extended floods which might cause the stopping of companies' activity, services, or lead to housing unavailability during several months. New Orleans' case has to exemplify us: four years after the disaster, the city still couldn't get back its dynamism. In France, more than 300 towns are flood-exposed. While these towns are the mainspring of territory's development, it is likely that the majority of them couldn't get up quickly after a large-extended flood. Therefore, to understand and improve the urban territory's resilience facing floods is a real stake for territory's development. Urban technical networks supply, unify and irrigate all urban territories' constituents. Characterizing their flood resilience can be interesting to understand better urban resilience. In this context, waste management during and after floods is completely crucial. During a flood, the waste management network can become dysfunctional (roads cut, waste storage installations or waste treatment flooded). How can the mayor respect his obligation to guarantee salubrity and security in his city? In post flood the question is even more problematic. The waste management network presents a real stake for territory's restart. After a flood, building materials, lopped-of branches, furniture, business stocks, farm stocks, mud, rubbles, animal cadavers are wet, mixed, even polluted by hydrocarbons or toxic substances. The waste's volume can be significant. Sanitary and environmental risks can be crucial. In view of this situation, waste's management in post crisis period raises a real problem. What to make of this waste? How to collect it? Where to stock it? How to process it? Who is responsible? Answering these questions is all the more strategic since this waste is the mark of disaster. Thus, cleaning will be the first population's and local actor's reflex in order to forget the flood but also to restart as fast as possible (for example, the clearing of roads is a prerequisite for electricity's restoration which is a vital network for territory's functioning). While the waste management is a main stage of post crisis, these questions are still without answer. The extend of this network influence also leads us to think about the means to prevent from waste production and service's dysfunction. How to develop the territory to limit the floods' impact on the waste management network? Are there techniques or equipments allowing stakeholders to limit these impacts? How to increase population's, entrepreneur's or farmer's awareness to get ready to face floods, to limit the waste production, but also to react well during and after the floods? Throughout means of prevention and thanks to actor's technical and organizational adaptations towards the waste network, or by raising population's awareness and preparation, economic and institutional actors of urban territories might improve the waste's network flood resilience, and thus, cities' flood resilience.

Through experience feedbacks about countries recently affected by large-extended floods and field reflection with local actors, the stakes of this PhD research are thus to think about means (1) to maintain the activity out of flood plains during a flood, (2) to increase the waste management network's activity in post crisis period in order to be able to deal with a new waste production both by its quality and its quantity, but also (3) to study the means to prevent this new production. This work will use the concept of urban system to describe urban territory because it allows us to study both its behaviour and functioning. The interest of this methodological choice is to take into account the impacts of the disruption of waste management networks on cities' functioning, and thus, on cities' flood resilience.