

CAFRUA

Challenges of Agriculture adaptation to Flood Risk in Urban Areas : synergies between flood protection , urban planning and peri-urban agriculture development

ABSTRACT

In large cities, urbanization often takes over peri-urban agricultural spaces generating an increase in flooding phenomena and in the exposure of human and economic stakes. In the context of climate change, this land use strategy appears to be unsustainable. Agriculture then appears as having a role to play in flood protection by retaining and storing water volumes to protect more densely urbanized areas. However, flooding and peri-urban location have advantages and disadvantages that may affect the viability or development of these farms in the long term, especially in the context of climate change. On the scale of a metropolis, the Great Montpellier, the objective of the research project is to analyse how agricultural activities located in flood-prone areas can contribute to the adaptation of territories to the impacts of climate change.

The case study chosen for the project corresponds to the perimeter of the so-ii observatory which includes the entire perimeter of the Montpellier Metropolis. It is particularly relevant since the territory endures frequent flooding, increasing urbanisation, changes in use in exposed areas, and it currently has a variety of agricultural activities in the peri-urban area. Moreover, the so-ii observatory is an opportunity to build long term partnerships with local stakeholders et to capitalize data.

Within the project, we will tackle four specific objectives: 1/ an agro-economic analysis of adaptive capacities of agricultural systems in peri-urban flood zones, 2/ an urban analysis of constraints and opportunities for peri-urban agriculture in flood-prone area, 3/ a synthetic analysis at the territory level, 4/ an opening to the international dimension.

We propose to address these issues through a multidisciplinary approach including agronomy, economics, geography and urban planning.

Our project is structured in four work-packages, each aiming at answering one of the specific objectives and feeding each other.

The methods chosen to address these objectives are: surveys, participatory workshops, modelling, analysis of urban planning documents.

The results of the project will be the subject of scientific reports and publications.

Given the strong local partnership and the high stakes in terms of policy support, a feedback workshop is planned with local stakeholders.

This research question has an international scope. These same questions are posed to the scientific community in the United Kingdom, Thailand or Madagascar for example. To tackle the fourth objective of our project, we will organize a scientific workshop by inviting international researchers identified on the subject to present and discuss results and perspectives.

Keywords : Farm adaptation flood risk, Peri-urban farming system, Climate change adaptation, Urban constraints, Montpellier Mtropole

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Project leader : Pauline BREMOND

Project leader's institution : INRAE

Project leader's RU : G-EAU INNOVATION

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Funding : Labex

GOAL

On the scale of a metropolis, the objective of the research project is to analyse how agricultural activities located in flood-prone areas contribute to the adaptation of territories to the impacts of climate change. In territories subject to heavy urbanisation, the question of opportunities and constraints between two planning policies will be particularly investigated: the preservation or even restoration of peri-urban agriculture, and the control of land use in flood-prone areas. The project aims also at revealing the adaptive capacities necessary for the agricultural systems so that the peri-urban agricultural systems can find perennial trajectories of development while contributing to reduce globally the effects of the flood on the territory. With the greater Montpellier area as a field, additional functions to those already known about peri-urban agriculture are thus questioned, starting with the metropolitan resilience to flooding.

ACTION

WP1: Adaptive capacities of agricultural systems located in peri-urban flood zones

WP2: Urban analysis of constraints and opportunities for peri-urban agriculture in flood-prone area

WP3: Synthetic analysis

WP4: Project management, Dissemination, Network building