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INRAE

Bioeconomy for urban areas

POPCORN

Consortium 2020

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Key words

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INRAE divisions

ACT
AGROECOSYSTEM
ECOSOCIO
MATHNUM
TRANSFORM

Research network on populations and their food consumption in urban areas

> Characterise the population of a region and their food habits with the aim of identifying links with the flow of materials

Context and challenges

Cities are major players in food flows. Indeed, the majority of the world's population already live in an urban setting, a phenomenon that is expected to increase in the future. Cities are places of transit that attract populations and places where various products are routed. They fundamentally structure the flows of material and energy as well as the resources and energy required and the resulting pollution. Food plays a decisive role in the flows of material and energy In an urban area. Upstream, food systems influence the supply areas, both in terms of the gross volume to be transported and the nature of the products concerned, as urban lifestyles are intricately tied to diets that contain more fat, sugar, meat and processed foods. Downstream, urban populations are a major source of discharge in the form of organic matter via human excreta and food waste.

Multiple challenges face urban food systems and concern both scientific aspects such as identifying the supply areas, modes of production and processing, the food footprint of cities, food relocation, waste management, nutrient recovery and governance of relations between the city and the hinterland. On a more operational level, a growing number of local authorities are interested in relocating part of the city's food supply and reducing its carbon footprint and other sources of pollution within the framework of public policy schemes (for example regional food projects, city food policies, circular economy plans, waste management plans).

The research requires defining exactly who eats in the area, in what form, and In what conditions, as these are the factors that influence and determine both upstream and downstream flows. Characterisation of "the eating population" is therefore an essential prerequisite for many of the issues involved in current research on the food bioeconomy.

Goals

The POPCORN consortium is interested in overcoming two blind spots in the above mentioned research fields. The first one concerns the quantification of the eating population, which is usually based only on the residential population (legal population of municipalities) using census

statistics from INSEE. Yet the additional population (e.g. tourists, commuters) also needs to be accounted for as well as the time they spend in the area. The second blind spot concerns the way in which food consumption is connected to other dimensions of the system, notably agricultural production upstream, and waste production downstream.

The ambition of the POPCORN project is to work on these two complementary dimensions: the eating population and its food consumption, and the transformation of food, thus enabling more reliable quantitative analysis of the materiality of the food system of a given area by connecting agricultural production with consumption and waste – sectors that are often Investigated apart. The aim of the project is thus to create a research network that will gain a broad understanding of the eating population in urban food metabolism studies. To this end, the project will propose resources that can be exploited as a prerequisite for other work on the urban bioeconomy using metabolic approaches to food consumption (e.g., supply areas; agricultural production) and also downstream of consumption (production of waste, losses, management of by-products).

Project members

INRAE division	Units	Expertise and contributions
ACT	UMR SADAPT	Agronomy, Ecology, food autonomy, relocating food production, losses and waste, food waste
AGROECOSYSTEM	UR ITAP	Environmental assessment, life cycle analysis (LCA)
ECOSOCIO	USC1CMH Centre Maurice Halbwachs	Sociology of food
MATHNUM	UR TSCF	Information systems
TRANSFORM	UMR SAYFOOD	Bioengineering, environmental engineering, environmental assessment, systems approach (waste and by-products)