



MAPPING FOOD SYSTEMS AT NATIONAL AND CITY-REGIONAL LEVEL

Originally developed by: [FoodCLIC](#)

OBJECTIVE

Provide an overview of city-regional food systems, map neighborhoods, and analyze power dynamics that negatively impact food environments.

TARGET AUDIENCE

Coordinators, researchers, and members of food policy networks focused on city-region food system transformation.

TIME NEEDED

Approximately 2 months

LIST OF MATERIALS

Large map of the city-region, pencils, pens and markers as well as sticky notes

CONTACT PERSON

Athena institute, VU Amsterdam
secretariaat.athena.beta@vu.nl



QUICK OVERVIEW

This tool guides participants in exploring the structure and challenges of city-region food systems by mapping the national and city-regional food system. Through a series of mapping exercises and discussions, participants gain insights into where food comes from, where it's available, and who influences food access. The goal is to understand current issues and opportunities to create more inclusive and sustainable food systems.

LEARNING OUTCOMES

- Gain a broad overview of entire food systems within a country.
- Gain an overview of the city-region using basic secondary data.
- Highlight the strengths and assets of the city-region food system regarding agricultural land use, food production and food environments.
- Understand different types of food environments in the city-region food system.
- Identify areas with transformative potential.



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Mapping Food Systems at National and City-regional Level

The transformation of food systems requires baseline information to first understand and then plan actions within an embedded, collaborative, and inclusive framework at multiple levels, from neighbourhoods to municipal, regional, national, and international scales. In this tool we focus on the national and city-regional levels. When a project, living lab or initiative intends to engage in local level activities, it is important to also map the food system at municipal and neighbourhood level. For that we refer you to the separate tool that deals with food system mapping at that level. Here we focus on the national and city-regional level.

City-region food system: A **city region** refers to a defined geographical area that comprises one or more urban centers along with their surrounding peri-urban and rural hinterlands, where people, food, goods, resources, and ecosystem services circulate. A City Region Food System (CRFS) includes all food system actors and activities within this area, falling under the planning and intervention authority of local or regional governments. The CRFS is used as a focal point to understand and address food-related challenges and opportunities in urban areas.

To get a comprehensive picture of the food system, it is important to **involve different stakeholders** in a process of system understanding to have the view from various perspective and to better understand the role and position of different actors within the food system, including conflicts of interest.

Key food spaces within urban areas are so-called food environments. A **food environment** is the interface where people interact with the wider food system to acquire and consume food. Six broad types of food environments can be distinguished:

- Retail food environment (e.g., supermarkets).
- Hospitality food environment (e.g., restaurants).
- Institutional food environment (e.g., school canteens, hospital meals, food banks).
- Agri-food environment (e.g., community gardens, urban agriculture).
- Alternative and community food environment (e.g., community kitchens, food consumer cooperatives, park BBQs).
- Wild food environment (e.g., foraging herbs and fruits, fishing).

Each environment has both physical and digital components.

Mapping the food system at national and city-regional level can be done in four steps. Step 1 concerns the collection and mapping of the entire food system. Step 2 and 3 focus on the city-region food system. Step 4 engages relevant stakeholders in the analysis of the previous steps and discussing ways forward.

STEP 1 – National Food System

It is important to develop a joint understanding of the key features of the food systems before zooming in on the city-regional, municipal or neighborhood level. Various mapping methods already exist. The method we present here is an iterative process of reflection and discussion between the research team and key stakeholders of the food system under study, in which the food system's main elements and its strengths and weaknesses are jointly analysed. The method comprises three phases.

Phase 1. Desk study

The method starts by conducting a desk study. In most countries, national level food system studies have already been executed and published; reviewing those documents is very insightful. Besides functional descriptions it is also important to look at quantitative parameters to get insight into the magnitude of things. Try to answer at least the following question:

- What do the different elements of the food system roughly look like in the context of the country under study? Figure 1 provides a helpful visualisation of the food system showing relevant elements and actors in the food system.

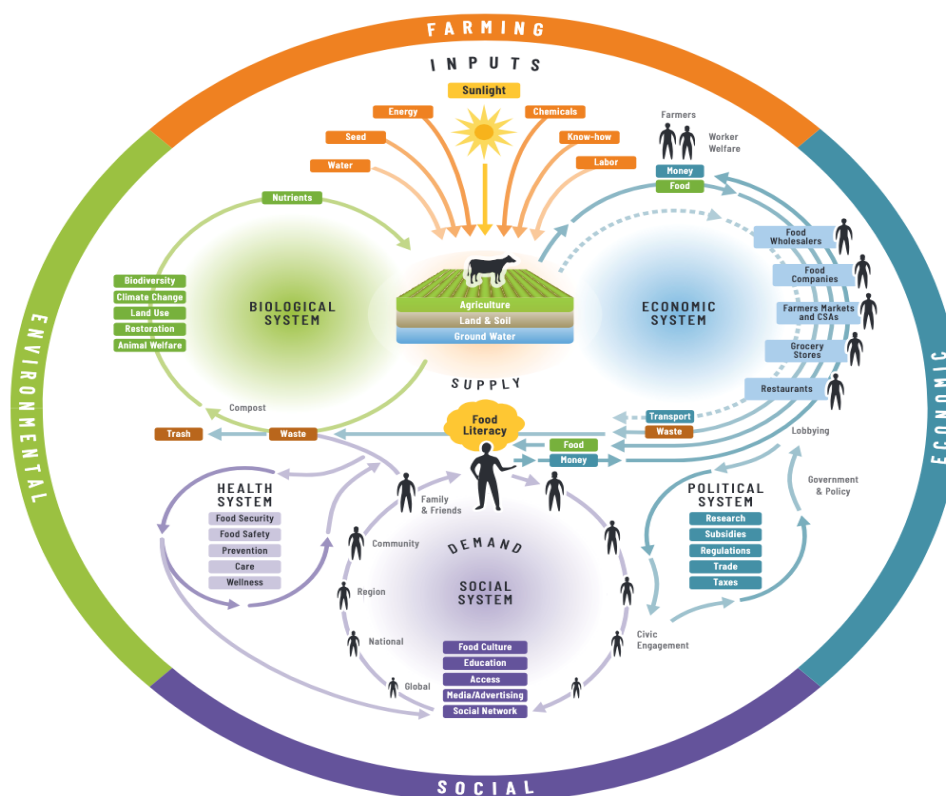


Figure 1. Visualisation of the food system (www.nourishlife.org)

A tip is take the simplistic food supply chain (food production → processing → distribution → marketing → consumption) as a starting point. Beginning the journey at the food production stage will provide insight into how a food system is rooted in geographical spaces, operational components, and biological subsystem (including natural resources). Next you can look at connections to the political subsystem, which encompasses both public and private policies that shape the food system, and also the information and services subsystem, which impacts production methods, agricultural knowledge, food and nutrition awareness, marketing, and other related aspects. Subsequently you can extend your gaze to the economic, social and health subsystems related to food.

Phase 2. Interviews with key informants

In phase 2 the aim is to validate and deepen your understanding of the food system as a whole and gain more insight into its strengths and weaknesses. If you haven't done already, it would be good at this point to conduct a stakeholder analysis at national level to understand who the main stakeholders are. In identifying key informants you are looking for stakeholders that are very experienced and have an helicopter view. After initial identification you can identify subsequent key information by means of snowball sampling. You want to make sure you have sufficient diversity in key informants in terms of the role in the system and the food supply chain.

Phase 3. Multi-stakeholder workshop (optional)

After the key informant interviews, you may want to organize a workshop (half a day) with interested stakeholders with the objective to validate the findings, raise awareness about your endeavour and its subsequent step, and discuss ways forward. There is a separate tool on [‘organizing a multi-stakeholder event’](#) that can support you in this step.

However, if you intend to move to the city-region mapping because your intended activities will ultimately take place at that level, it might be too time consuming and complicated to organize a workshop at national level. In that case, you may skip this phase and organize a multi-stakeholder workshop only in Step 4.

STEP 2 - Basic Data on City-Region Food System

When zooming in at the city-regional level, the first mapping activity involves collecting baseline data on the CRFS. This includes mapping data on urban-rural linkages, food supply chains, resources, and opportunities. Data on agricultural inputs, agricultural land use, energy consumption, livestock, species, and respective manure management systems can be obtained from local databases. When the city-regional data is unavailable, data at the provincial, regional, or national level can be used and subsequently scaled considering the share of agricultural land area of the city region on the total. To this end data can be derived using Corine Land Cover 2018 (CLC, 2018). The food demand of city-regions can be estimated by scaling down data on the national food demand derived from FAOSTAT (FAO, 2023). In addition, the level of locally produced food within the foodshed can be estimated. Subsequently comparing data on agricultural production with the food needed to feed the population within the city-region gives the share of inhabitants that can be fed with local food produced in each city region's foodshed.

STEP 3 – Mapping resources and opportunities

In this step it is also advised to produce a resource map and an opportunities map (see below). At the end of this process, when you have a comprehensive picture of the situation, it is important to check if you miss any stakeholder perspectives, since this exercise might have made you realise that you overlooked an area of the food system or an important actor within the CRFS.

Resources Map

A resources map highlights the strengths and assets of the CRFS. This could include agricultural land use, regions abundant in food production, or areas with a diverse range of food environments, from institutional to wild (e.g. see Figure 2)

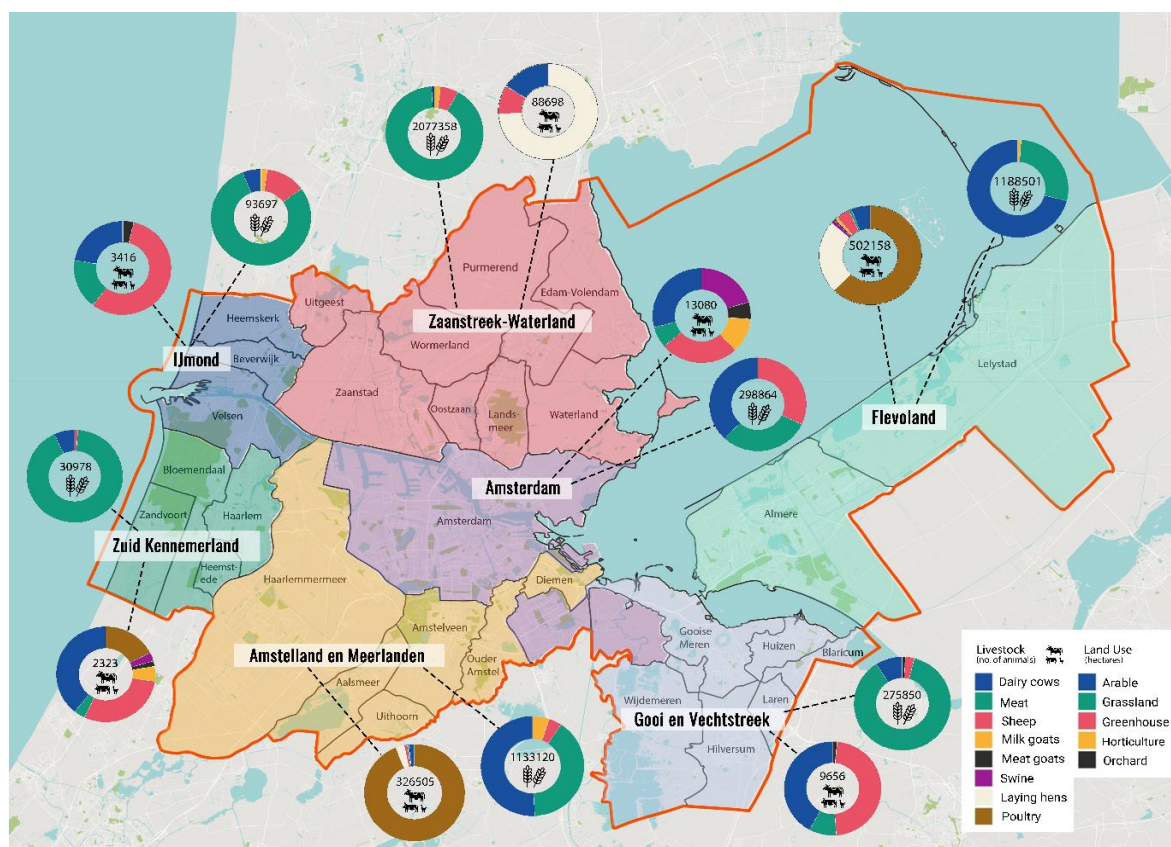


Figure 1: Example of resources map – agricultural production in the AMA (source: [FoodCLIC project, Deliverable 2.5](#))

Opportunities Map

Focuses on areas with transformative potential (so-called **leverage points**), such as regions suitable for sustainable agricultural practices or zones where active food strategies are being developed. As an example, the Amsterdam Metropolitan Area identified the institutional food environment as an opportunity (see Box 1 and Figure 3).

Box 1: Opportunities in institutional food procurement in the AMA

The AMA's Living Lab of the FoodCLIC project identified a significant role for the institutional food environment. This environment covers meals provided by catering and banqueting services within a plethora of institutions, such as schools, universities, governmental entities, healthcare facilities and large corporations. Notably, a substantial portion of AMA's meals – about a third – are consumed within this setting. In the city of Amsterdam, every day over 254,000 lunches are consumed in these environments, and in the entire AMA this is almost 700,000 (see Figure 2). Institutional food environments have the potential to offer a consistent and controlled food supply, with their operational modalities largely influenced by respective institutional policies and the latitude given to caterers. By emphasizing this realm, there is a significant opportunity to steer the AMA towards healthier, more sustainable and inclusive food consumption patterns.

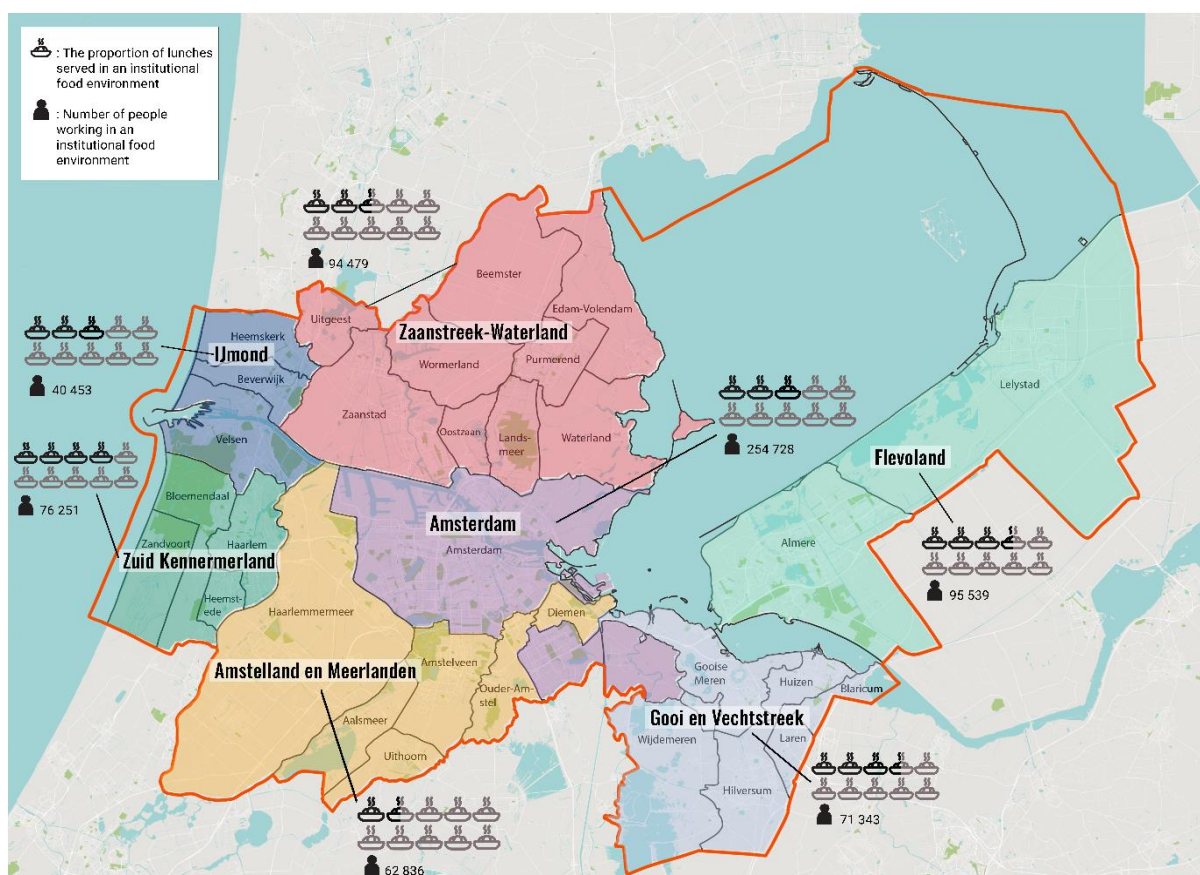


Figure 2: Example of opportunity map – the institutional food environment in the AMA (source: [FoodCLIC project, Deliverable 2.5](#))

STEP 4 – Multi-stakeholder event

It is strongly advised to organize a multi-stakeholder event at city-regional level to present the results of the above mapping activities and discuss the findings and the way forward. There is a separate tool on [‘organizing a multi-stakeholder event’](#) that can support you in this step.

Depending on the aim of your project, living lab or initiative, you may want to move to lower levels of granularity – the municipal and neighbourhood level. For this there is separate tool on [‘mapping food systems and municipal and neighbourhood level’](#).