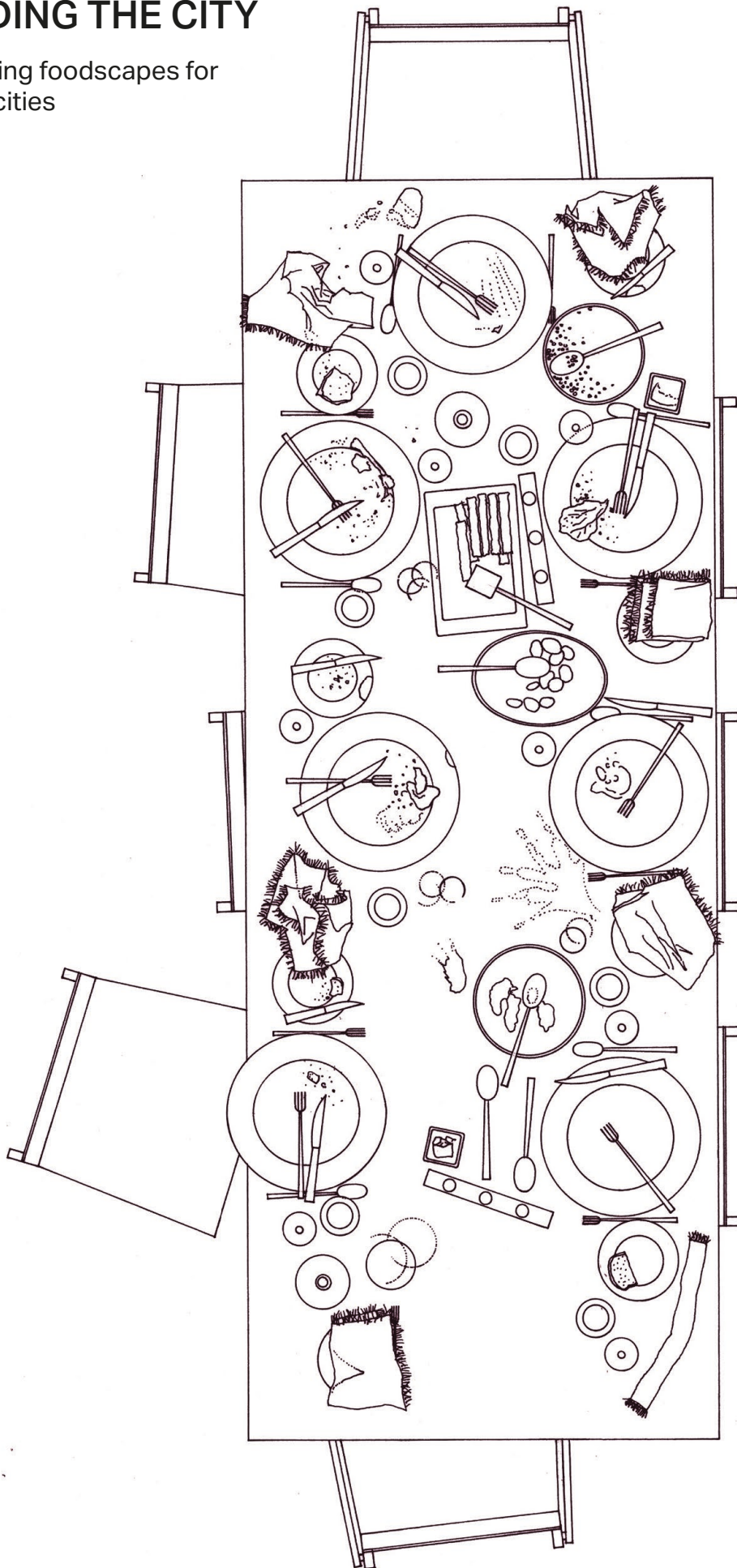


FEEDING THE CITY

Designing foodscapes for better cities



'Food is very representative of a city's culture. In order to really get to know a place and the people, you've got to eat the food.'

- Emeril Lagasse

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Keywords

- Foodscape
- Food security
- Ecology
- Provisioning systems
- Ethnography

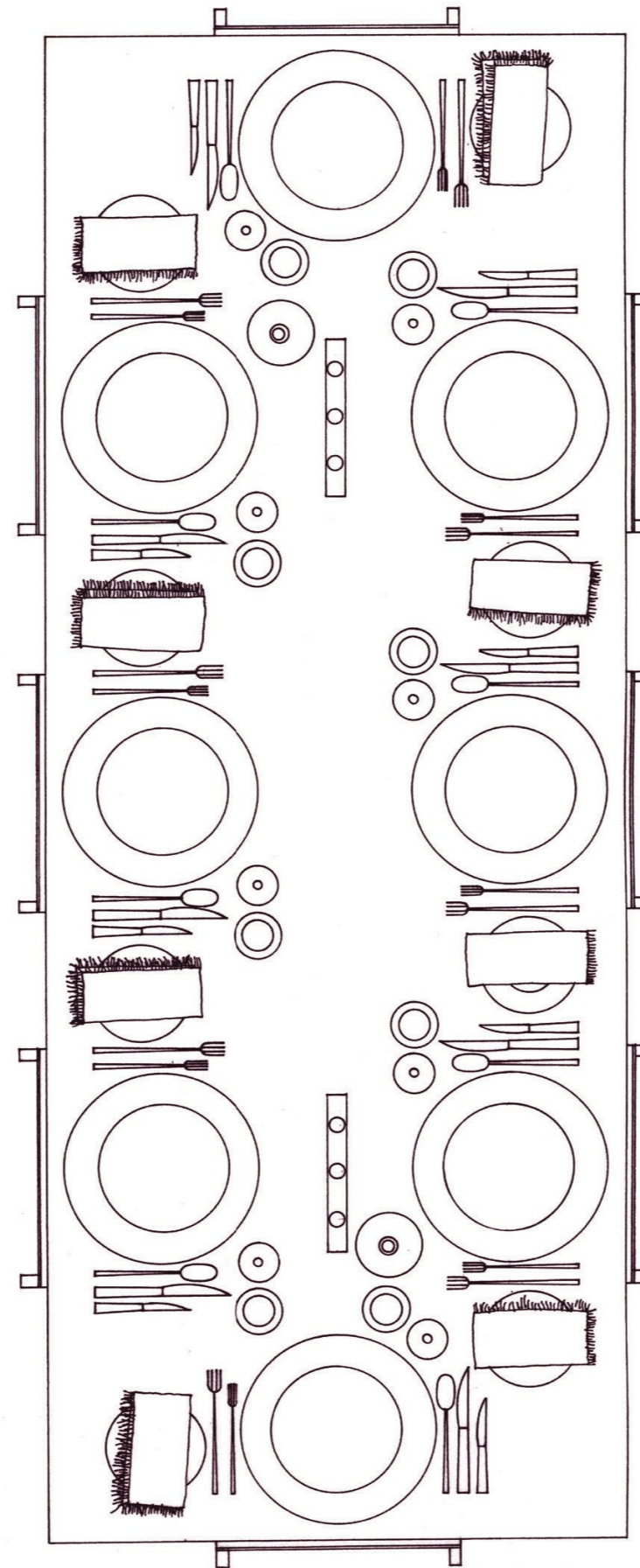


Image cover and right: Wigglesworth, S. (2022). "The Disorder of the Dining Table" UOU scientific journal #04, 122-127.

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Bart Claver | 4804112

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Introduction

Food plays a major role in the life of every human being. It is firmly placed at the bottom of Maslow's hierarchy of needs and it has always played a major role in the history of mankind. In Rome the government gave out a monthly grain dole to the city's poor. It was not just the obligation of the government but that of the emperor personally. The emperor Tiberius is to have said that to not give out the dole would cause 'the utter ruin of the state'. The Women's March on Versailles during the French Revolution was not a protest in support of revolutionary ideals but a riot against the high price of bread. In the 21st century natural disasters, changing climate conditions and political events across the world are having a major impact on the availability of food.^[1] When the war in Ukraine broke out in 2022 it not only caused prices to go up and made sunflower oil unavailable, but it threatened famine in Africa as Ukraine is a major exporter of wheat to the continent.^[2]

It is projected that by 2050 70% of the world population will live in cities. Requiring it to import food not only from its traditional hinterland but also from all corners of the earth. In Europe people spend on average 14% of their household income on food every year. In Africa this percentage is even higher, in some countries rising to 50%. This is making food security a major issue for not only nation states but the average person.^[3]

Making sure a city is fed for even a day is an awe-inspiring process. To produce, import, sell, cook, eat, and dispose of three meals a day, every day, for every citizen requires an enormous underlying system. Today this system is setup to produce, process and sell food as a commodity for the biggest profit margin possible, forgoing any consequence concerning the land where it is grown or the people that consume it.^[4]



[1] Steel, C. (2013). Hungry city : how food shapes our lives. Vintage Books.

[2] Harmash, O. (2023). Russia pounds Ukraine's grain, UN warns of hunger from price rises. Reuters. <https://www.reuters.com/world/europe/russia-hits-ukraines-grain-fourth-day-practises-seizing-ships-black-sea-2023-07-21/>

[3] UNEP, FAO and UNDP. 2023. Rethinking Our Food Systems: A Guide for Multi-Stakeholder Collaboration. Nairobi, Rome and New York

[4] Verhoeven, S. (2018). Flourishing foodscapes: Design for City-Region Food Systems.

Fig 1: Contemporary illustration of the Women's March on Versailles (unkown author, 1789)

Food however is not just politics and economics; it is also culture and community. Its smells, textures and tastes are a mirror of a city's identity and that of her people. Often a sense of community is found over a shared meal or a cup of coffee. Demonstrating that food is not only essential for the body but also the soul. It is no wonder that the word culture finds its origin in 'cultura' which is Latin for growing or cultivation.^[5] If the saying 'you are what you eat' is true for the individual than it is equally true for our cities, leading to the research question:

How could architecture add to the creation of an ethical foodscape in Madrid?

The complexity and interconnectivity of the foodscape concept make it necessary to segment this research question in sub-questions that will examine the different systems and their aspects. These sub-questions are as follows:

1. Where does Madrid source its food from and what are the local cultivation initiatives?
2. What are the flows of food waste in Madrid?
3. Where, how and when is food available for purchase in Madrid?
4. What kind of role does food play in the Spanish culture?
5. What constitutes sustainable food practices?
6. Who are the actors when it comes to food practices?
7. What systems make up the foodscape of Madrid?

[5] Steel, C. (2013). Hungry city : how food shapes our lives. Vintage Books.

Foodscape: spatial manifestation of all aspects regarding food

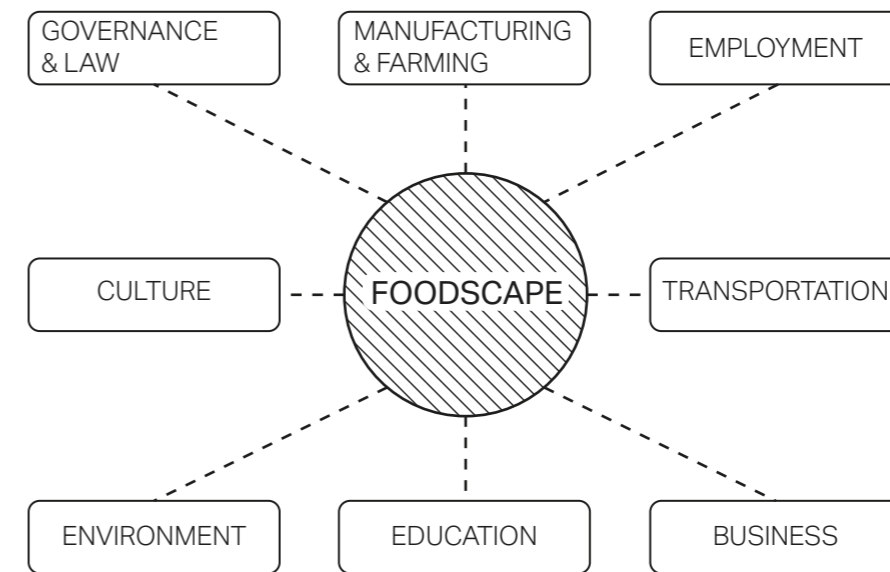


Fig 2: foodscape aspects (created by author)

Theoretical framework

The spatial development of a city has always had a strong connection with that of its hinterland. For centuries the growth of a city was limited by the amount of food and energy that this hinterland could provide. Very few were able to circumvent this limit by transporting food over great distances. The city of Rome was only able to grow to a million inhabitants strong by importing grain from its breadbasket in Egypt. The next city to reach this number would be London, but it would take until the early 19th century.^[6] The basics of this relation can be viewed through the model developed by the German geographer Johan Heinrich von Thünen (fig 3). At its basis is a town that is surrounded by flat fertile lands. The rings surrounding the town each holding a different type of agricultural productivity:

1. Furthest removed from the city are the grazing lands that are used to raise animals for consumptions. This process takes a considerable amount of open space, but the animals are able to walk themselves to town to be sold at the market.
2. Grain & cereals don't perish as quickly as vegetables and are light, making them easier to transport over a larger distance.
3. Crop rotation is used to increase the health of the farmland and decrease the impact and change of disease. Most of these crops keep relatively well once harvested and are staples in the diet of a town.
4. Dairy, fruit and vegetables are the most perishable products and thus located near the town.
5. Forests provide fuel and building materials, but their weight and difficulty to transport require them to be on the outskirts of a town.

This circular model is of a simplified version. The presence of geographical elements such as rivers, mountains or access to the sea cause the model to stretch and contract but the basis held true for a long time.^[7] That is until the introduction of the railroad. This made it possible to transport perishable items over long distances at low costs. Thus, distorting the relation between city and hinterland. Rapidly developing technologies such as airplanes, cooled transportation and storage, and processing and packaging have continued to increase this distortion. Cities are no longer dependent on their hinterland but are able to source food on a global scale, making this relation ever weaker and more invisible.^[8]

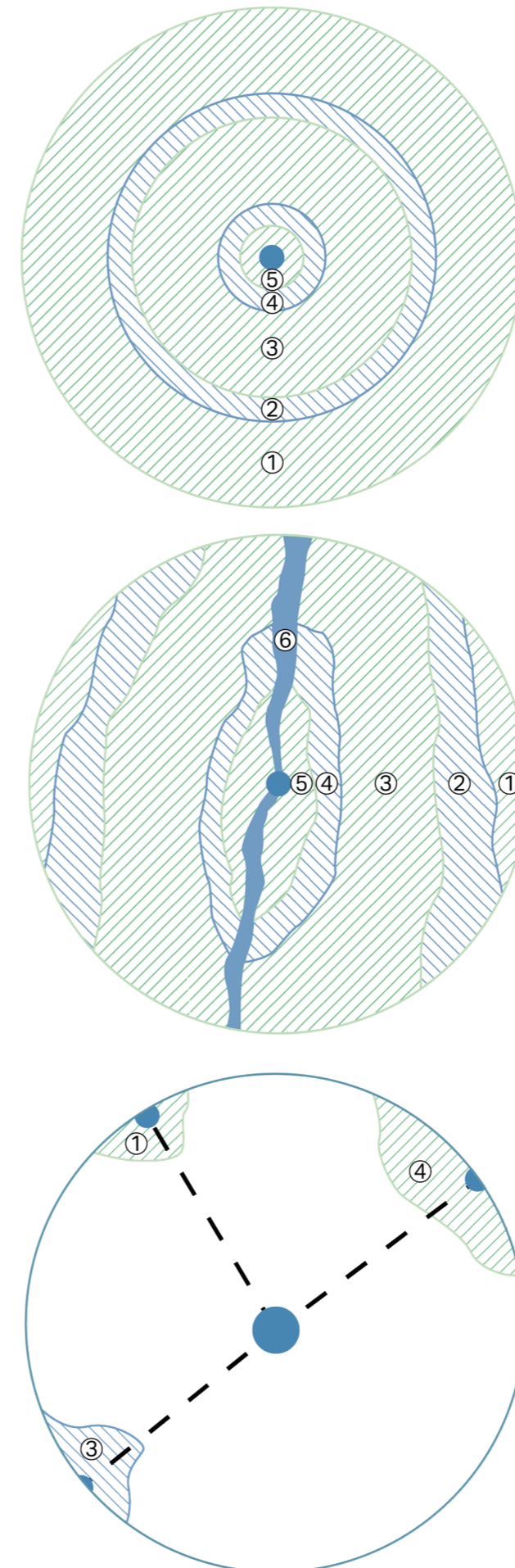
Hinterland: the rural area economically tied to an urban core

Breadbasket: a region where the climate and fertility of the soil allow it to produce large quantities of food

[6] Steel, C. (2013). *Hungry city : how food shapes our lives*. Vintage Books.

[7] Verhoeven, S. (2018). *Flourishing foodscapes: Design for City-Region Food Systems*.

[8] Steel, C. (2013). *Hungry city : how food shapes our lives*. Vintage Books.



- ① RANCHING & LIVESTOCK
- ② GRAIN & CEREALS
- ③ CROP ROTATION
- ④ HORTICULTURE & DAIRYFARMING
- ⑤ FORESTRY
- ⑥ NAVIGABLE RIVER
- CITY
- - TRANSPORTATION ROUTE

Fig 3: Von Thünen model: simplified, distorted, contemporary (created by author)

The changing relationship between a city and its food system can be divided into three distinct categories:

- **Spatial:** the development of technology has caused the physical distance between the place of production and consumption to grow larger. The distance that an ingredient travels between production and consumption is called a 'food mile'. Where previously food was produced and consumed locally, it is now become the norm to have a dish where every ingredient comes from a different part of the world, traveling thousands of kilometres emitting CO₂ and adding to the cause of climate change.^[9] Consequently the definition of what is 'local' has also been blurred. To define local as a physicality has become increasingly arbitrary as the impact of physical distances has lessened. Instead shifting to a contextual definition of 'locality of specialization' where a product has certain characteristics because of the place of origin. This can range from protected names to shield local heritage and craft techniques to a marketing tool as people link a certain place with certain embedded qualities.^[10]
- **Social:** the physical distance has also caused the relationship between consumer and producer to fade almost completely and be replaced by a relationship between producer-processor-consumer. More often than not the farmer doesn't know who is eating his food and the consumer doesn't know the origin of what they eat.^[11]
- **Values:** the replacement of the producer-consumer relationship to that of producer-processor-consumer relationship has directly changed the way actors value food. Commercial and industrial values have replaced civil ones. No longer are animal welfare, fair trade and environmental wellbeing at the forefront when discussing food for most people. Instead price, year-round availability and quality assurance have taken over. If civil values are still present they are only part of commercial and industrial practices to market and sell products to a certain demographic.^[12]

The fact that this is the current prevailing state of our relationship with food does not have to mean it has to be permanent. Alternatives do exist that seek to strengthen and re-establish our connection between producer and consumer; consumer and consumed.

[9] Lim, C. J. (2014). *Food City*. Routledge.

[10] Eriksen, S. (2013). Defining Local Food: Three Domains of Proximity. *Acta Agriculturae Scandinavica*, 63, 18. <https://doi.org/09064710.2013.789123>

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[12] Morgan, K., Marsden, T., & Murdoch, J. (2008). *Worlds of food : place, power, and provenance in the food chain* (Ser. Oxford geographical and environmental studies series). OUP Oxford.

[13] Lake, A. A., Burgoine, T., Greenhalgh, F., Stamp, E., & Tyrrell, R. (2010). The foodscape: classification and field validation of secondary data sources. *Health & place*, 16(4), 666-673. <https://doi.org/10.1016/j.health-place.2010.02.004>

[14] Sobal, J., & Wansink, B. (2007). Kitchenscapes, Tablesapes, Platescapes, and Foodscapes: Influences of Microscale Built Environments on Food Intake. *Environment and Behavior*, 39(1), 124-142. <https://doi.org/10.1177/0013916506295574>

[15] Verhoeven, S. (2018). *Flourishing foodscapes: Design for City-Region Food Systems*.

[16] Lang, T. H., M. (2015). *Food Wars: the Global Battle for Mouths, Minds and Markets*. Routledge.

The spatial-social aspects of food can be understood through the concept of the foodscape. A foodscape is any place where food can be found including the physical, socio-cultural, economic and policy influences on all scale levels.^[13] On the macro-scale this means the global markets and networks of transportation and industry. On the meso-scale it is the build environment on a community level, providing food through various different outlets which the consumer can utilise. On the micro-scale it is the domestic foodscape. Here aspects such as physical appearance of food, the preparation of it, and the how, where, and when of serving and consuming takes place.^[14] These aspects, their flows and actors cannot be seen as strictly separate or framed by their scale, instead they are nested in one another and influence each other continuously (fig 4). What people eat is directly influenced by the outlets that are accessible to them and the type of outlet determines where the food is sourced from. The food that is consumed also directly shapes the people, neighbourhoods and cities. The citizens of a suburb that source the majority of their food from a supermarket will get a larger share of processed long-distance transported products than those of a rural village whose residents go to a weekly market where the food is provided by local farmers.

The complexity and multiplicity of the foodscape means that there are many different variations of all its aspects with not one ideal set. Instead, it is a gradient that is dependents on spatial, social, ethical and economic values with two extremes on each end. The first of these extremes is the agro-industrial foodscape. Food and everything that is required to produce it is seen in a commodity in a global market. The presiding goal is to minimize the costs in the production process and to maximize the profits. The second extreme is the agro-ecological foodscape. Instead of efficiency, aspects such as availability, accessibility and affordability are important in the goal for food sovereignty. Unlike the agro-industrial foodscape sustainability within the environmental, social and economical fields are a prerequisite. A streamlined efficient process is not as important as a diversified sourcing process. The foodscape of a city will most likely not even be correctly represented by a single mix of these different elements but instead by a gradient that changes between neighbourhoods and even individual residents.^{[15][16]}

As demonstrated, foodscapes are incredibly complex. Creating an ethical one is no simple task. For all the theory out there, the fact remains that when discussing food you are discussing something very human. What we eat and how we eat it has real world consequences if we care about it or not. By researching the systems and aspects that make up the foodscape of Madrid, new ways of using food as a tool to approach the challenges of urban life can be discovered and proposed. Demonstrating that food is both the knowledge and nourishment of a city, representing life itself.

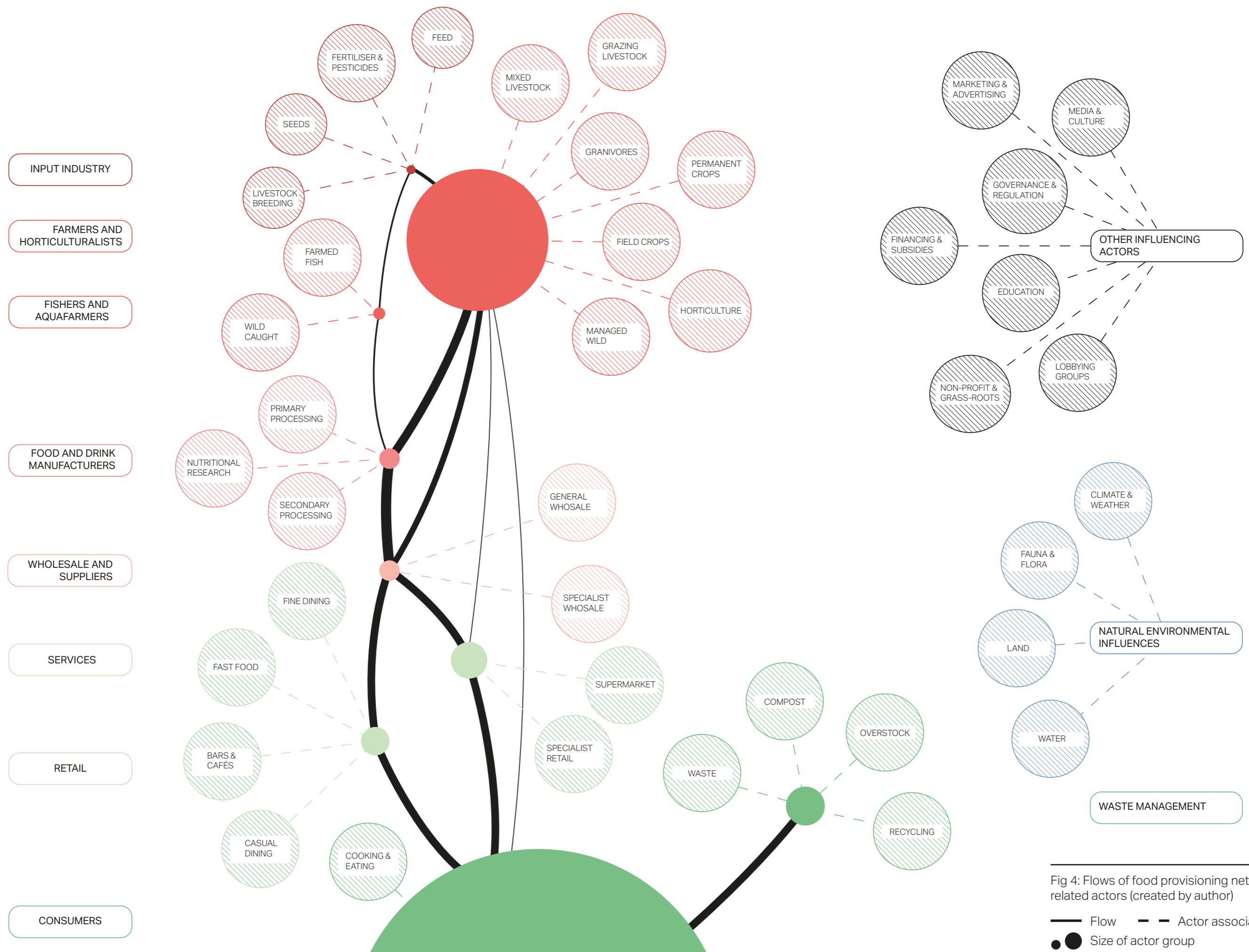
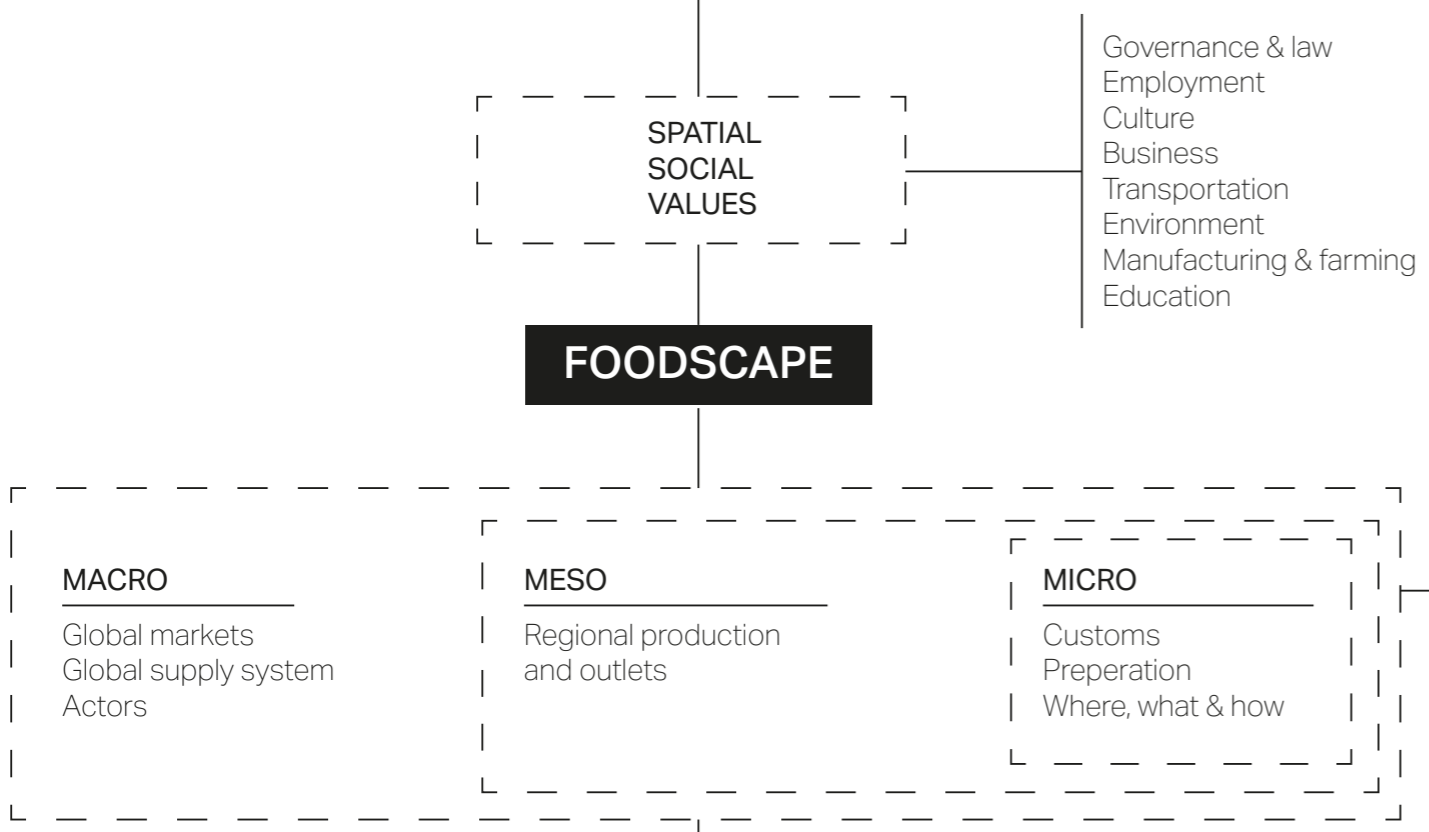
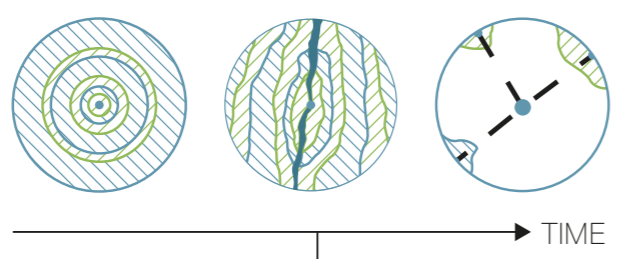


Fig 4: Flows of food provisioning network with related actors (created by author)

— Flow - - Actor association ● Size of actor group

THEORETICAL FRAMEWORK

EVOLUTION OF SPATIAL RELATION BETWEEN CITY AND HINTERLAND



AGRO-INDUSTRIAL

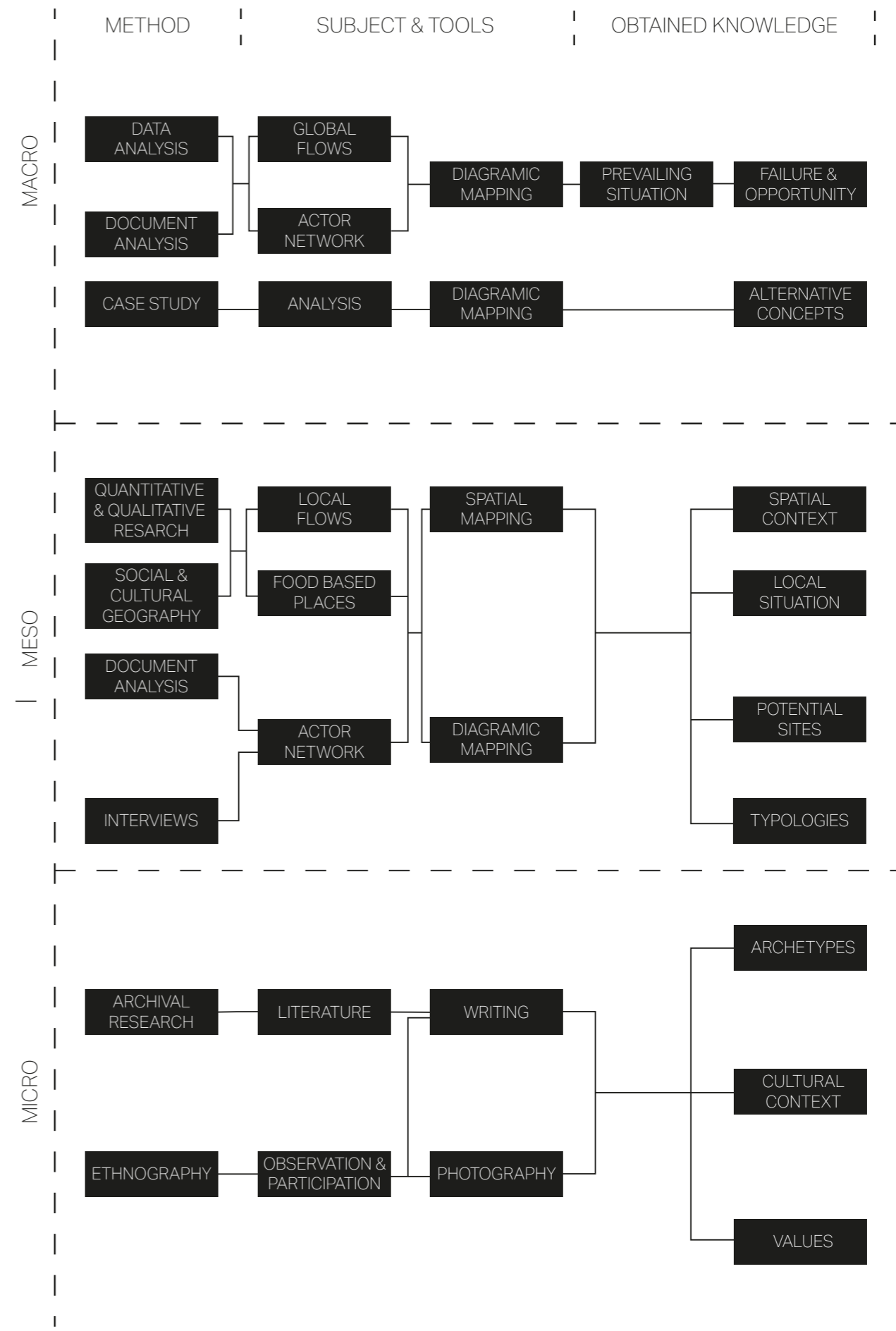
- Commodity focused
- Production and logistics
- Cost-efficient
- Technical efficiency
- Quality assurance based
- Monofunctional landscape

AGRO-ECOLOGICAL

- Ethics focused
- Availability & affordability
- Diversification
- Integral & place-based
- Relationship based
- Multifunction landscape



METHODOLOGICAL FRAMEWORK



Methodological framework

The concept of the foodscape is relatively new and has its origin in the field of public health, but can also be applied as a concept within architecture and the built environment. The way food is produced, processed, distributed, and consumed is directly tight with the city. By getting a better understanding of the systems that make up the foodscape it would become possible to reshape and reestablish the relationship between food and the city that has been weakened and perverted over the last two centuries. As the foodscape is a complex multi-scale concept it will require a multi-disciplinary toolkit.

On the macro-scale the foodscape covers the global market and the food provisioning systems with their respective actors. Getting an overview of the existing situation through the use of an actor-network and system flow analysis will be necessary. The information required for this can be found in the form of literature and data but will need to be translated into a clear picture in the form of diagrams and maps. This will make it possible to identify points of failure and opportunity, and the prevailing global situation. This also the point where possible alternatives and solution can already be identified via the analysis of case studies.

The meso-scale should be anchored in the city of Madrid and its surrounding hinterland. The context of the region is required to create a clear impression of the regional foodscape and to situate it inside the macro-scale. At the meso-scale it is possible to directly engage with local actors, either in the shape of industry insiders, governmental agencies or grassroots initiatives. Mapping and connecting these with the ones on the macro-scale will sketch an impression of the localized situation and make it possible to uncover more precise localized flows. These flows can then be researched through quantitative, qualitative, and social geography as to index the extent of these flows and food-based places in Madrid. The outcome of this research should not only be represented by diagrams but also be placed within their spatial context to see how food is physically present within the city and how the production, transportation and consumption influences and is influenced by the city. This will lead to a typology of food-based places nested in the local context. In combination with the failures and opportunities that have been identified on the macro-scale a survey of potential design sites can be started.

At the micro scale the social aspect and ethical aspects of the foodscape needs to be researched. The what, how and when of consumption reflect on the way food is valued by those who consume it. The value that a person places upon food often reflect their

demographic, economical and cultural background as well as their everyday habits and routines. The gathering of this information can be achieved through literature, observation and participation. The results of this will be documented in the form of both photography and writing as some physical or meta-physical aspects would be lacking if only one medium was used. The results of this will lead to specific archetypes and their associated values.

The result of this research cannot be seen as individual components but are just like the different scales nested and interconnected. Combining these will lead to a clear overview of the prevailing situation, points of failure and opportunity, and possible alternatives and solution placed within their context. Together this creates a project that will produce a more ethical foodscape and ways to use food as a tool to improve urban life.

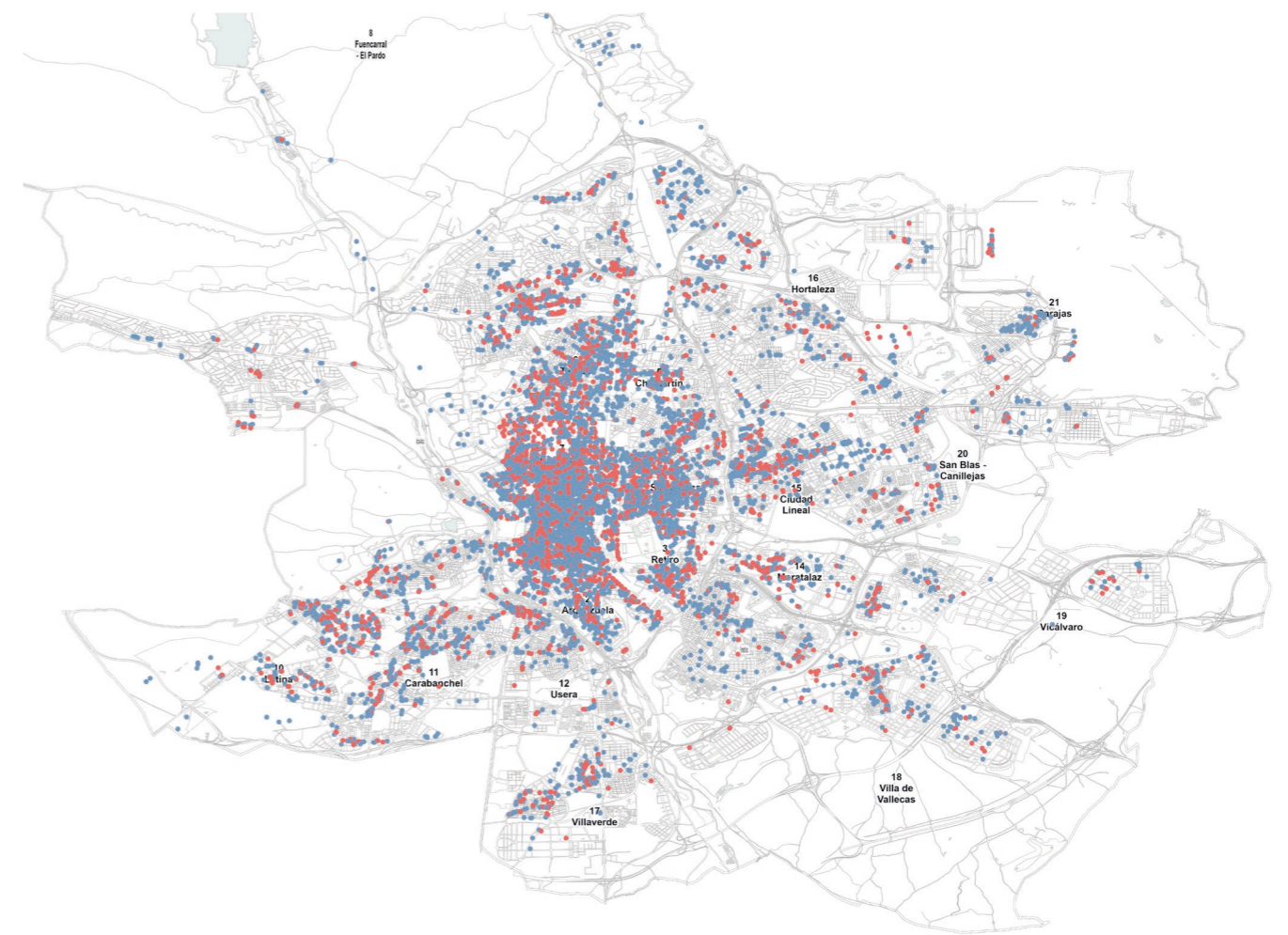


Fig 5: Concentration of places where food is sold in Madrid (created by author)

Total: 11.306

- Food sold as commodity
- Food sold as service

Relevance & outline of potential

As stated in the introduction, it is projected that by 2050 70% of the world population will live in cities. While the demand for food (especially meat) is growing increasingly larger. The production, processing, transportation, and storage of food, meant to supply this demand, in its current state is only possible through the use of cheap non-renewable fossil-fuel, adding to the greenhouse effect. Currently 65% of the world's surface and groundwater is used in the production of food, a kilo of beef requiring up to 15.000 litres of water to produce. All of this is adding to the degradation of existing farmland and the destruction of ever-increasing parts of the rainforest to make way for plantations and grazing grounds. The necessity for this is even more mind-boggling when learning that the current production of food is enough to feed 10 billion people, but that 40% of everything that is produced is not consumed but instead going on the waste pile.^[17]

Not only is the health of our environment under threat, but also our current food practices are affecting our own health. Currently 2 billion people suffer from ill health that is related to diet, while low-income households often struggle with access to healthy and affordable food. Lack of knowledge on what and how to cook also causes a part of the population to make the decision for unhealthy and highly processed food.^[18]

One of the major causes of these problems stem from our failure to value food. By creating an ethical foodscape wherein food becomes valued again, it can become a powerful tool that solves these issues and helps us design healthier and happier cities. Food has always shaped our habits, societies and environments and will continue to do so. It has the ability to connect people and span continents – it is the basis of life itself. What we eat has serious influences on our lives if we like it or not, so why not make it make them positive.

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Annotated bibliography

Paper: foodscape, locality, systems, taxonomy

Eriksen, S. (2013). Defining Local Food: Three Domains of Proximity. *Acta Agriculturae Scandinavica*, 63, 18. <https://doi.org/09064710.2013.789123>

Report: nutrition, food security, inequality, accessibility

FAO, I., UNICEF, WFP & WHO. (2023). The State of Food Security and Nutrition in the World 2023

Newsarticle: food security

Harmash, O. (2023). Russia pounds Ukraine's grain, UN warns of hunger from price rises. Reuters. <https://www.reuters.com/world/europe/russia-hits-ukraines-grain-fourth-day-practises-seizing-ships-black-sea-2023-07-21/>

Report: supply chain, sustainability, socio-economic development

Kirwan J., E. a. (2004). Macro-level Analysis of Food supply Chain Dynamics and Diversity in Europe (SUS-CHAIN report no. 10, Issue.

Paper: foodscape, environment, classification

Lake, A. A., Burgoine, T., Greenhalgh, F., Stamp, E., & Tyrrell, R. (2010). The foodscape: classification and field validation of secondary data sources. *Health & place*, 16(4), 666-673. <https://doi.org/10.1016/j.healthplace.2010.02.004>

Book: policy, provisioning model, culture, business, environment

Lang, T. H., M. (2015). *Food Wars: the Global Battle for Mouths, Minds and Markets*. Routledge.

Book: multiplicity, case-based

Lim, C. J. (204). *Food City*. Routledge.

Book: locality, case-based, supply systems

Morgan, K., Marsden, T., & Murdoch, J. (2008). *Worlds of food : place, power, and provenance in the food chain* (Ser. Oxford geographical and environmental studies series). OUP Oxford.

Paper: scales, foodscape, sociology

Platescapes, and Foodscapes: Influences of Microscale Built Environments on Food Intake. *Environment and Behavior*, 39(1), 124-142. <https://doi.org/10.1177/0013916506295574>

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Steel, C. (2013). *Hungry city : how food shapes our lives*. Vintage Books.

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Book: foodscape, case-based, systems

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Categorized reading list

History

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