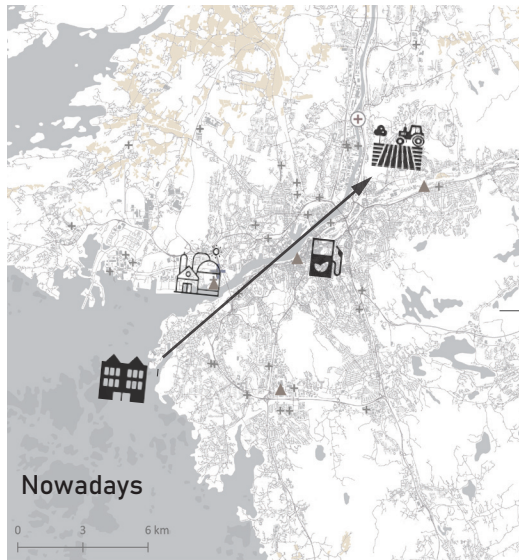


JUNTIAN CHEN

URBAN (CIRCULAR) FOOD SYSTEM

- Facilitating circular food production model in Gothenburg



SOCIAL ECOLOGICAL URBANISM

Supervisor: Jorge Gil
Examiner: Lars Marcus
MT'21

Nowadays, the global population is growing and the demand for food is expected to grow by up to 70% in the coming decades, that means the entire food system needs to be much more energy and resource efficient, while at the same time meet the increasing demand of food. In Sweden, food production is also an important issue related to the future's food security. How to design a new type of food system, which can balance the satisfaction of the food demand and negative effects, like GHG emission and surplus of phosphorus from food production, is an important topic. Circularity is an important approach to develop solutions that address the negative effects introduced above. Also, Urban planning can provide strategies for facilitating a circular food system spatially, and find methods to improve the system's efficiency and make it become a new type of public landscape.

The aim of this thesis is to investigate the methods of facilitating a circular food system in the city from the perspective of urban planning, and explore how the circular food system may change the urban landscape through design. In this thesis, Gothenburg will be chosen as a case city to test.

The first part of the thesis is the pre-research. Exemplary projects will be reviewed and the current linear food waste recycling model in Gothenburg will be investigated, for supporting the concept design of a circular food system.

The second part of this thesis is to speculate the concepts of the future's circular food system at the urban and neighbourhood scale. The proposal of the new flow at the urban scale would be based on the investigation of how new actors may change the demand in the current system, and the proposal of the new flow at the neighbourhood scale would be guided by the potential production model of 4 types of new actors. Meanwhile, criterias for locating four new actors and solutions of improving relevant infrastructures would be proposed, based on the circular food system concepts.

The final part of this thesis is to plan the scenario of the circular food system in the city and 3 zoom-in urban designs at the neighbourhood scale. The planning of the scenario on an urban scale is based on the criterias and solutions proposed in the second part. Then, in the zoom-in urban design, how circular food systems are implemented in urban and peri-urban areas will be presented.

The results of this thesis are a planning project and the analysis methods of how a circular food system is facilitated in Gothenburg.

Keywords : Circular food system, food waste, local food production, flow, scenario, urban design