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Deserts and food swamps, new concepts for urban planning in Chile

Contemporary Western urban planning is based on productivist logics, which seek the efficiency of the urban system in terms of displacement and compatibility of uses, and hygienist principles, which aim to safeguard the population's health and quality of life. Structured roadways are defined, space within the urban boundary is zoned, and land uses, densities, and heights are regulated based on these principles, alongside other variables that condition the growth and transformation of cities.

In Chile, the rapid growth triggered by metropolization and the development of a robust real estate industry that builds monotonous and extensive housing plots has made access to residential area equipment a relevant factor for urban planning and the sectoral planning of services considered fundamental. That is why the location decisions of public health and education services follow the logic of territorial coverage, as do, although lagging behind, the location of security services such as the Police stations or Fire Companies. However, from the perspective of the population, these coverage efforts are still insufficient.

In recent decades, the National Council of Urban Development (currently of Territorial Development) has promoted the Urban Development Indicators System (SIEDU, in Spanish) that measures and monitors the evolution of the quality of life of Chilean cities, seeking compliance with the National Urban Development Policy (2014). Among the indicators, innovative variables for the Chilean context stand out, such as the surface area of green areas per person, access to sustainable mobility, or proximity to soils of high agricultural value, among others.

Nevertheless, urban food supply remains outside the realms of public policy and urban planning. Throughout the 20th century, many Chilean cities developed municipal urban food infrastructure, such as food markets, but in the 1980s, with the implementation of economic liberalization policies, these structures were dismantled or privatized. In some cases, these structures maintained their use in the urban space; in others, the new owners could not assume the upkeep of the buildings, and they suffered degradation or disappearance.

Since then, urban food security has been in the hands of two major food systems. On the one hand, supermarkets that have just been installed in urban spaces, using market-based localization logic. On the other hand, the street markets, located mainly in the neighborhoods to provide a weekly proximity supply service, are regulated by municipal ordinances in terms of spatial distribution and number of stalls. While the former provides access to a greater variety and quantity of food needed for the shopping basket, the second mainly provides fruits, vegetables, and legumes, promoting a healthier diet.

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Figure 1, 2 Grupo de investigación interdisciplinar en Sistemas alimentarios Locales GISAL (IINES 23-19)

In Chile, the **food deserts** can be assimilated with the urban residential areas not covered at a reasonable distance to access walking by either of these two food systems. This first analysis allows us to understand the spatial distribution that the two main food systems adopt in each city. Recent studies in Chile have identified two distribution patterns, one urban edge and the other interstitial, and the spatial distribution is homogeneous among the diverse socioeconomic groups.

However, these studies developed using spatial analysis tools should be complemented with fieldwork that allows for a deeper diagnosis of food environments in the areas identified as deserts. The evaluation of the availability, variety, and advertising offered by the neighborhood stores in these areas will allow us to determine whether they are indeed deserts if there are no supply points or, if they are not, the level of the healthiness of the food environment. When this level exceeds certain standards of access to unhealthy food, there is little diversity, and there is a lot of unhealthy food advertising, the area is categorized as **a food swamp**.

These two concepts, extracted from geography and used metaphorically, are very useful for diagnosing urban food infrastructure under the most current conceptual frameworks on which urban planning is proposed to be based, such as the "city of care," "the 15-minute city", or the "healthy city." Identifying and analyzing deserts and food swamps make it possible to focus decision-making and prioritize intervention in urban areas that may significantly impact urban and public health, i.e., in interstitial areas and categorized as food swamps. In this sense, the street market system, understood as food infrastructure managed municipally, is seen as a key element to promote healthy eating and contribute to urban food security.

However, the food approach should be framed in more than just local urban management. It should be incorporated as a strategic element in conceiving and applying territorial planning instruments. In this way, food access systems and, especially, street and local markets should be considered essential urban services, both to guide sustainable urban growth and to regenerate consolidated urban areas.

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