

# Chapter 1

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## *Service Deserts*

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In 2015 the United Nations General Assembly adopted 17 Sustainable Development Goals that are at the core of the 2030 Agenda for Sustainable Development. The goals address the three dimensions (pillars) of sustainable development, namely economic, social, and environmental sustainability. The goals range from eradicating poverty and reduction of inequality to improved education and health, improved resilience to climate change, and preservation of oceans and forests ([United Nations General Assembly, 2015](#)).

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### 1.1 Definition of a Service Desert

This chapter is about mapping rural and urban areas that have limited access to basic services, and as such can be flagged as “Basic Service Deserts.” Improving access to basic services is included in the 2030 Agenda for Sustainable Development. It is within the realms of Goal 3: “Ensure healthy lives and promote well-being for all at all ages,” and Goal 11: “Make cities and human settlements inclusive, safe, resilient and sustainable” ([United Nations General Assembly, 2015](#)).

The definition of a “Service Desert” is based on the definition of a “Food Desert.” The U.S. Departments of Agriculture (USDA), Treasury, and Health and Human Services (HHS) define census tracts as “Food Deserts” if the following criteria are met ([Ver Ploeg \*et al.\*, 2011](#)):

1. The census tract is considered a low-income area. Low-income areas are defined as areas with a poverty rate > 20% or with a median family income of less than 80% of the median family income of the state or the respective urban area.
2. The census tract is considered a low-access area. At least five hundred people or 33% of the population of the area live more than one mile away from a supermarket in urban centers, and more than 10 miles away in rural areas.

However, if it is assumed that access to services in urban centers should be available to residents without means of transportation arguably walking distance should be considered. Walking distance is a measure of how much distance can be covered by walking over time. What distance is deemed acceptable is somewhat arbitrary and is influenced by many factors. Not surprisingly, it is a heavily debated topic. Studies around transportation suggest that a walking distance of 800 m (0.5 mi) may be acceptable, which translates roughly to a 10 to 15-minute walk.

The open access datasets that are used do not allow to identify the precise location of each household/resident, making it impossible to calculate the number or proportion of residents that live outside a certain range. As a proxy, we use the area of a census tract.

Therefore, for the purpose of this chapter, we declare a census tract a “Service Desert” if the census tract is a low-income tract (as defined above) with *limited access* (not low access) to the service. A census tract is considered a limited-access tract if 33% or more of the area of the census tract is outside a 0.5 mi or 10 mi range of the service for urban centers and rural areas, respectively.