

Accessing Local Markets: Marketsheds

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WHAT ARE THESE MAPS TELLING US?

Across Africa buying and selling connects people. For a small-scale farmer, this trade takes place primarily within a limited geographic area based on access to market centers of a given size. The maps illustrate these areas using different colors to represent marketsheds—geographical areas and associated populations that are part of real or potential trade networks with a given market. From any location within a marketshed, it takes less time to travel to the corresponding market compared to any neighboring markets. In theory, farmers within a marketshed prefer to trade their commodities at the corresponding market, which minimizes travel cost (p. 66). The maps show that the density of marketsheds in Nigeria is high compared to that of other countries, because the country has many large cities. The high concentration of marketsheds also shows that it takes less time to travel to markets in Nigeria compared to neighboring countries. This suggests a denser and perhaps higher-quality infrastructure. The progression of Maps 1–4 shows that as the size of market centers, based on population, increases, there are fewer markets across the continent. Farmers thus have to travel farther, often across country boundaries, to reach larger market centers which may represent more lucrative trade opportunities.

WHY IS THIS IMPORTANT?

When analyzing factors that influence current and future farm performance, development planners and researchers need to know which markets are closest to agricultural producers. Farmers customarily select markets close to them so they can get to the market in the least amount of time to trade their goods; buy critical agricultural inputs, such as fertilizer, seed, and pesticides; or tap into a range of public and private services (extension, credit, and veterinary services being prime examples). A relatively large marketshed could mean that the population density for that shed is so low that few markets exist, and therefore that farmers have limited opportunities to sell their products (such as in Namibia). Or it might mean that the market within the shed serves a large population most likely due to adequate investments in road infrastructure. The maps show that the marketsheds are

not restricted by country borders, which means that a farmer's preferred market of a given size may be in a neighboring country. In that case, restrictions posed by border crossings and trade laws need to be considered when determining the optimal market for a farmer. Because each map is based on market centers of different sizes, they can be used to determine the best markets for selling a farmer's goods. Farmers with an abundance of high-value goods will often prefer to sell or trade at larger commercial markets where demand and prices are higher than at smaller local markets.

WHAT ABOUT THE UNDERLYING DATA?

Marketsheds are based on the cost of travel to a market center of a given size. The number of marketsheds in a country indicates the number of market centers of that size within the country (for example, Map 1 is based on a market-center population of 50,000 or greater). The population cutoffs used in the maps are based on population estimates from Global Rural-Urban Mapping Project (GRUMP) data for the year 2000 (CIESIN et al. 2011). Proximity to a market was determined by measuring the lowest accumulated cost, or travel time, to each market location. Every market is surrounded by a marketshed. All points within the marketshed area offer the shortest travel time to the corresponding market center. Points along the boundary between two sheds have equal travel time to both of the centers. Travel time is estimated based on a combination of spatial data layers and variables that affect the time required to travel to the cities or market centers. These variables include elevation, slope, land cover, roads, road types, rivers, borders, and major bodies of water (Guo 2010).

WHERE CAN I LEARN MORE?

Marketsheds for Africa south of the Sahara (SSA):
<http://harvestchoice.org/labs/market-sheds>

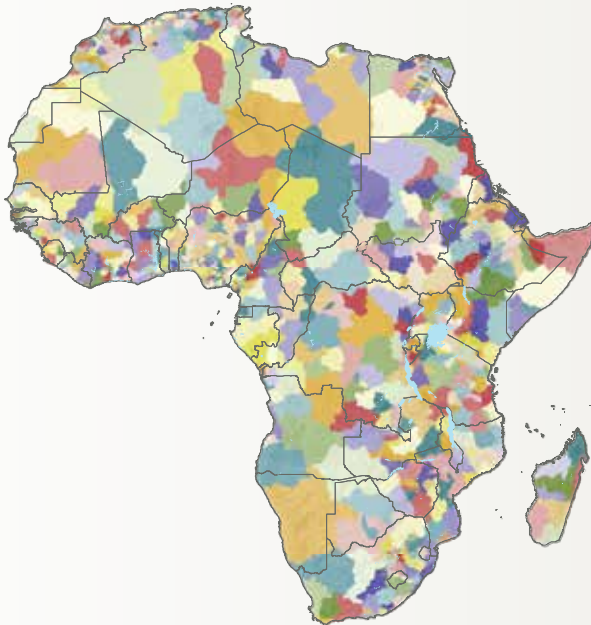
Market access:
<http://harvestchoice.org/topics/market-access>

Marketshed data for SSA: <http://bit.ly/1oFyB1B>



Marketsheds based on population size of market centers

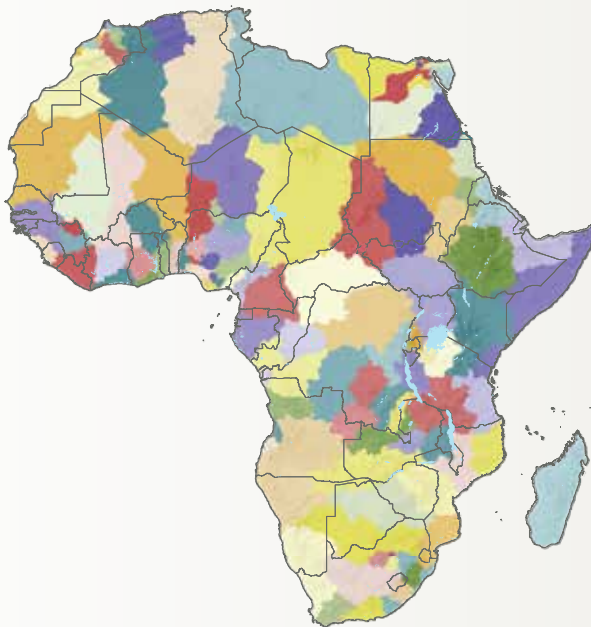
MAP 1 Population 50,000 ≤



MAP 2 Population 100,000 ≤



MAP 3 Population 250,000 ≤



MAP 4 Population 500,000 ≤



Data source (all maps): HarvestChoice 2012.

Note: Population data used are for the year 2000 (CIESIN 2011). The different colors represent marketsheds. A marketshed is the total area surrounding a market center of a given size. From any point within the marketshed, it is quicker to travel to that market center than to any neighboring marketshed's main market.

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