

Agribusiness along the Mtwara Development Corridor

Introduction

The average African farmer who sells surplus harvest receives less than 20% of his/her products' market price due to transaction costs and post-harvest losses. Oftentimes, these losses are due to inability to transport the crops from the farm to the consumer. One approach to improve agriculture returns in Tanzania, Mozambique and Malawi is the Mtwara Development Corridor (MDC). The corridor connects the three countries via a main road and two ferry ports on either side of Malawi. This project analyzes which districts are most optimally positioned to take advantage of the new infrastructure by scaling-up agricultural production.

Research Questions

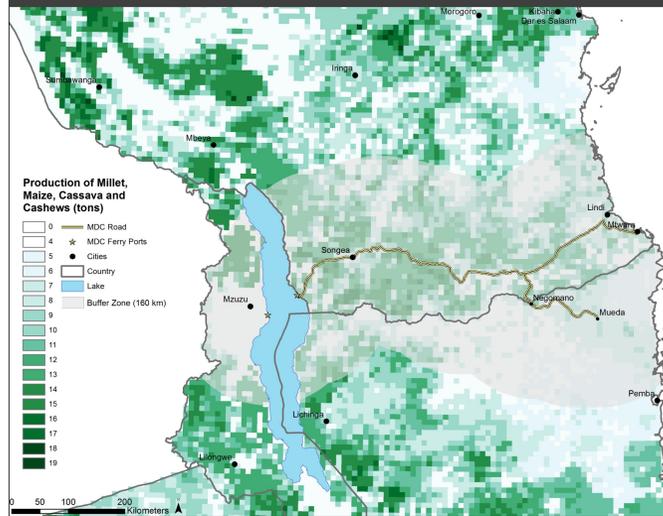
- To identify these districts, the research aims to answer two specific questions:
- Which districts within 160 kilometers of the MDC are most suitable for some form of assistance (whether agricultural or financial)?
 - Which crop is most cultivated in each of those districts?

Methodology

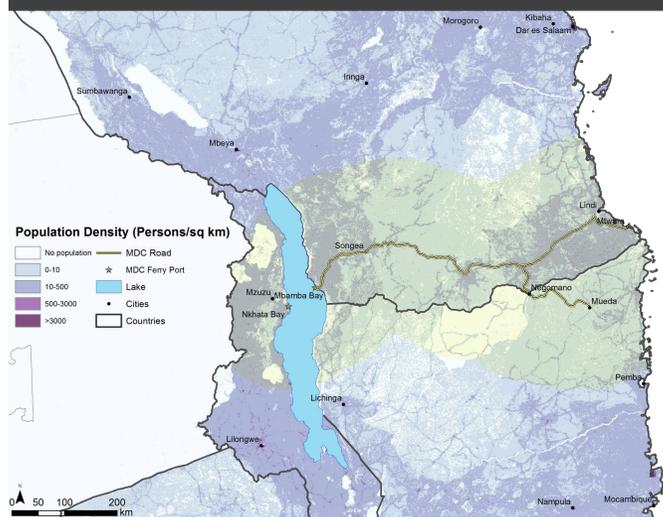
The suitability analysis was composed of several mini-evaluations. First, outlining the MDC involved merging several road datasets and selecting a specific route as per descriptions in reports of the corridor. Then, districts were selected based on their proximity (less than or equal to 160km) to the main road or ferry ports. Elements of suitability—access to finance, transport routes, labor, and fertile land as well as stability were measured by proxies. The distance to secondary roads (connected to the corridor) and from violent conflicts were calculated as was the geographic density of financial institutions in each district. These calculations along with population density and production of the popular crops, cassava, millet, maize and cashews (in tons) were given scores of 1-5 which were added together for each district (with the exception of nearness to conflict which was subtracted) for a final score. The highest scorers represent those most optimal for investment.

Fertile Land, Labor, and Infrastructure

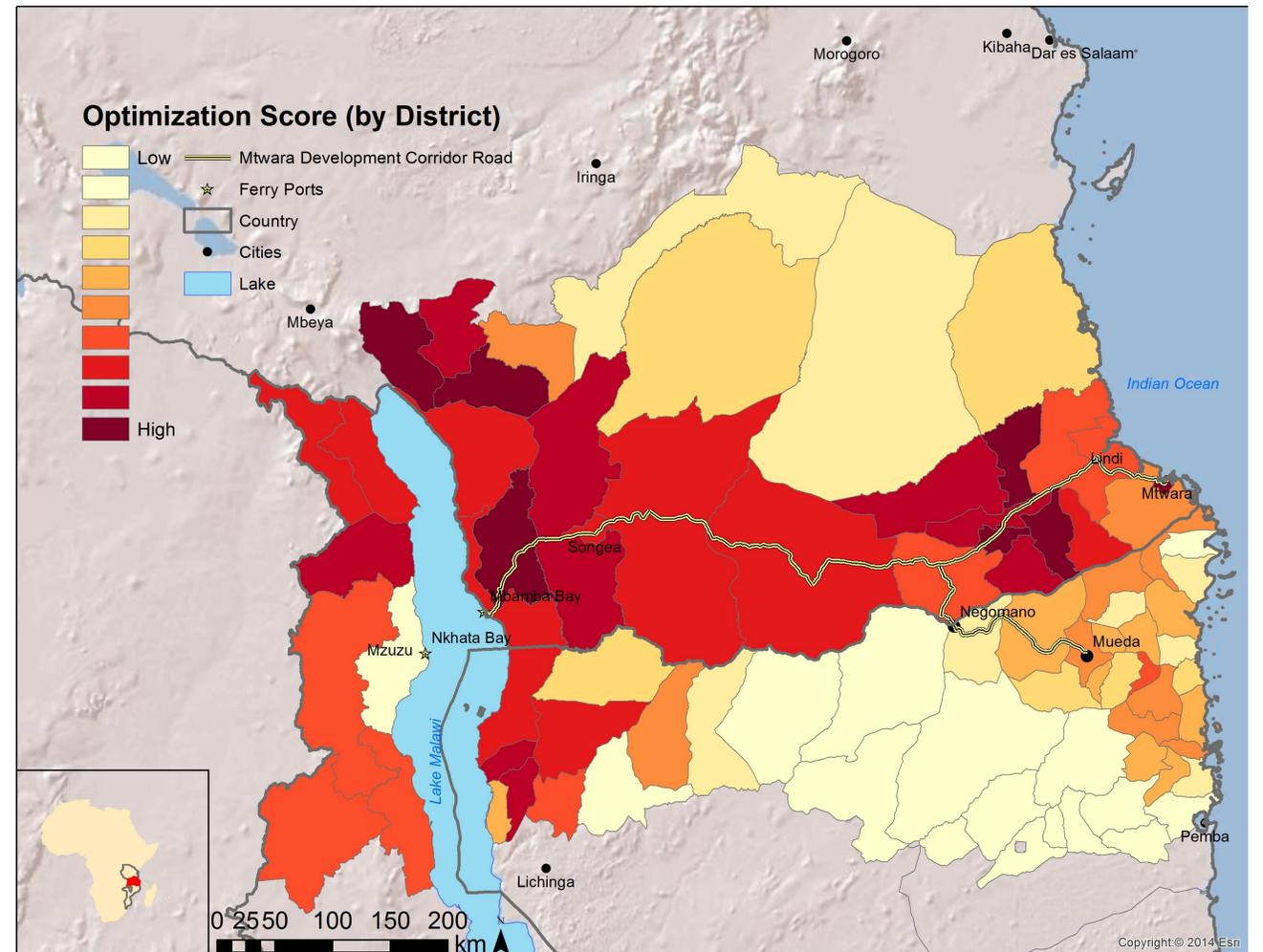
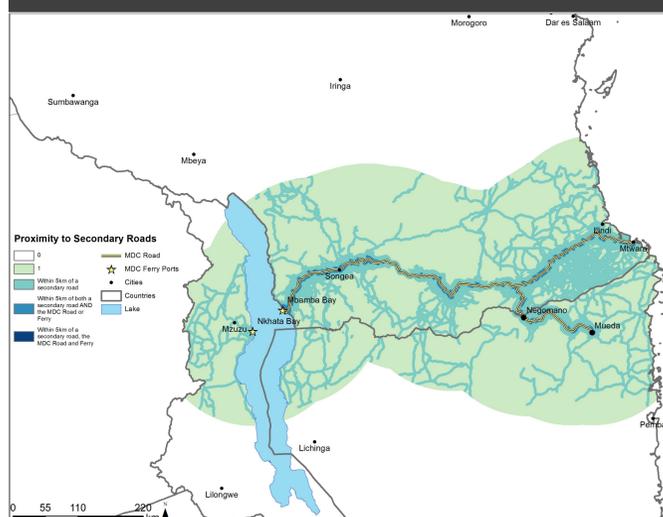
Average Annual Crop Yield from 1997-2003



Population Density, 2005



Infrastructure Accessibility, 1980-2010

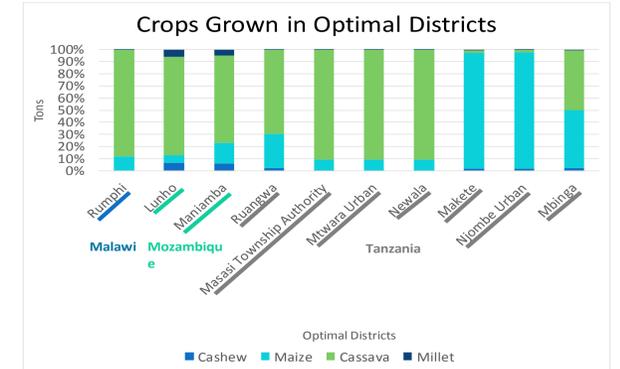


Results and Conclusions

In answer to the first research question, there are ten districts across Tanzania (7), Mozambique (2) and Malawi (1) that scored in the highest quartile of their country. The majority of these districts are in Tanzania likely due to higher density of secondary roads and population (likely reinforcing each other's growth).

The second question is answered by the figure at the right which shows that cassava and maize are grown in greater volume compared to Millet and Cashew. Whereas Mozambican and Malawian districts focus on cassava, the Tanzanian districts of Makete and Njombe Urban produce more maize.

However, these findings come with caveats. The times at which data were collected are widely different across the variables of finance (2013), agriculture (1997-2003), conflict (2016), population



(2005), and roads (unknown, possibility between 1980-2010). To add, the tool used to calculate distance to points like finance, conflict and infrastructure ignored country boundaries, which assumes that people can move freely across borders. This is not necessarily the case.

Cartographer: Hannah Fitter Date: May 9, 2016
 Course: DHP P207 - GIS for International Applications
 Projection: WGS 1984 - Universal Transverse Mercator, 375
 Sources: Landscan, 2005 (Oak Ridge National Laboratory), ACLED, 2016 (University of Sussex), EarthStat, 2000 (University of Minnesota), Finclusion Lab (Microfinance Information Exchange, Inc.), gROADS, v1 (CIESIN), Humanitarian Data Exchange (National Statistical Office of Malawi, 2015; World Food Programme, 2014; Tanzania National Bureau of Statistics (TNBS), 2015), Populated Places (USAID-Geographic Information Support Team, 2004)