



Fertilizer profitability in East Africa: A Spatially Explicit Policy Analysis

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June 03, 2010

About HarvestChoice

- **Purpose:** To compile, harmonize, generate, and disseminate public goods information on the potential payoffs to smallholder farmers in sub-Saharan Africa and South Asia - from policies and strategic investments that raise the productivity and profitability of cropping systems, and that promote the commercialization of smallholder agriculture.
- **Project period:** October 2006 to December 2009
- **Budget:** US\$4.7M (grant increased in 2007)
- **Management:** Jointly implemented by IFPRI (co-PI, Stanley Wood) and InSTePP, UMN (co-PI, Philip Pardey)

Methodology overview

Transport cost surface

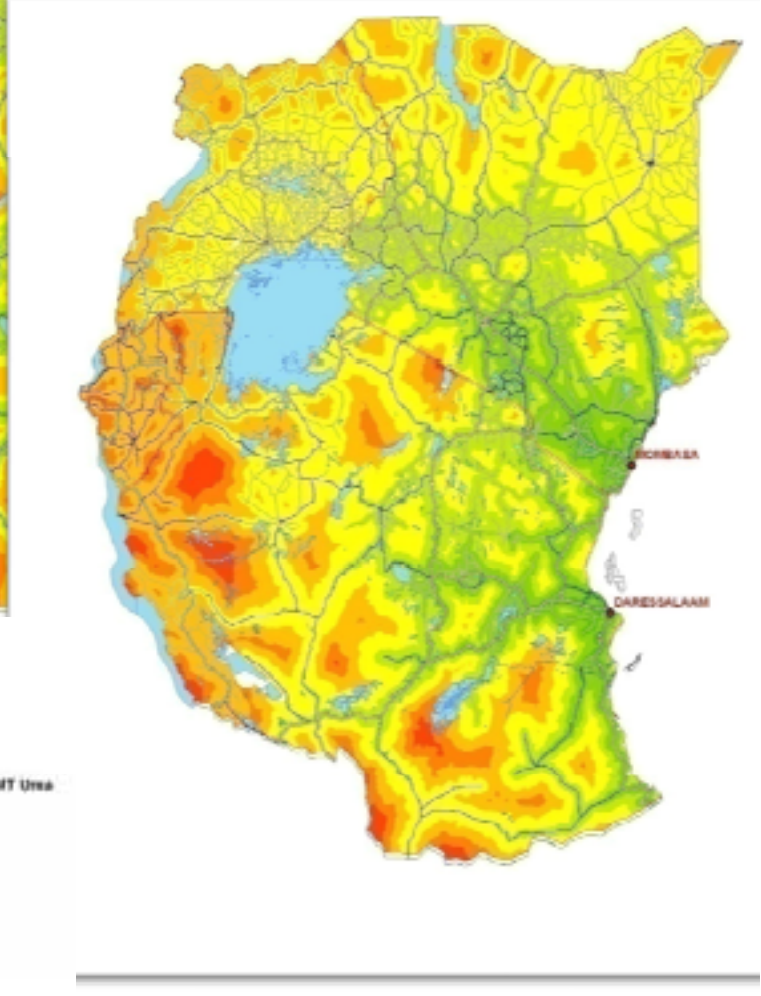
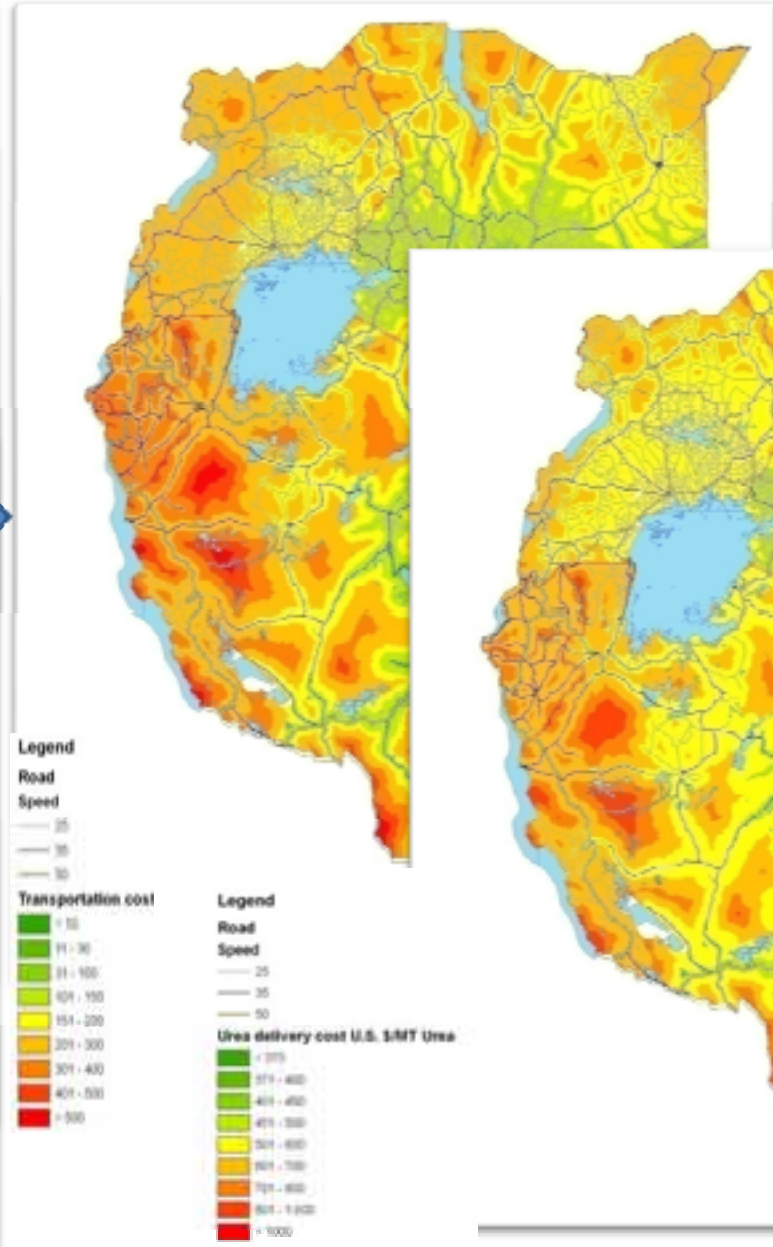
- Road networks
- Road types
- Border locations
- Ports locations
- Land cover types
- Elevation and Slope

Fertilizer delivery cost

- Fertilizer landed price
- Bagging fee
- Border crossing fee
- Loading cost
- Regulation cost
- Storage cost
- Marketing Margins

Maize delivery cost

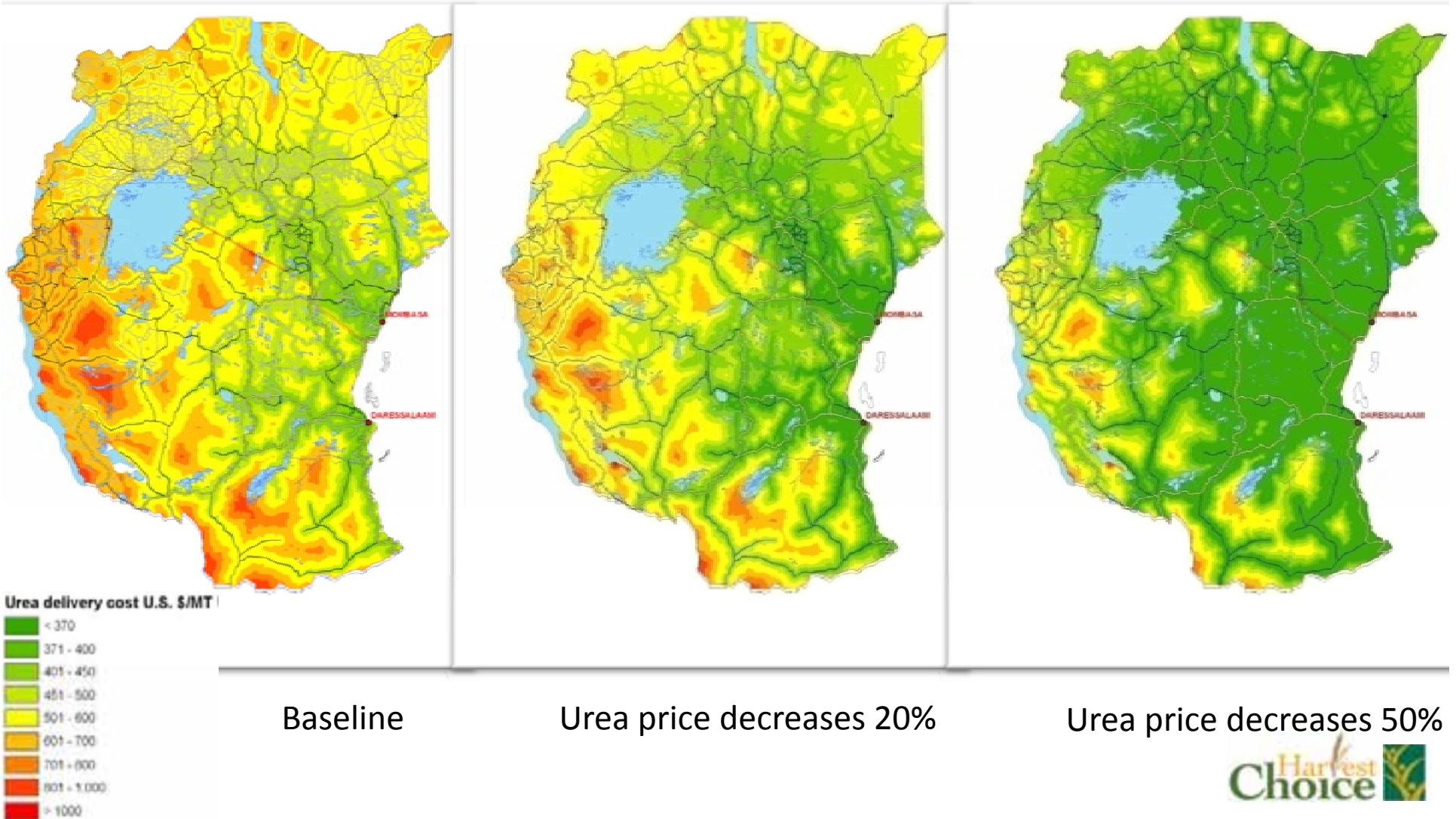
- “Farm” and market locations
- Market maize price
- Farm to market transport costs
- Border crossing fee



Urea delivery cost U.S.\$/Ton urea

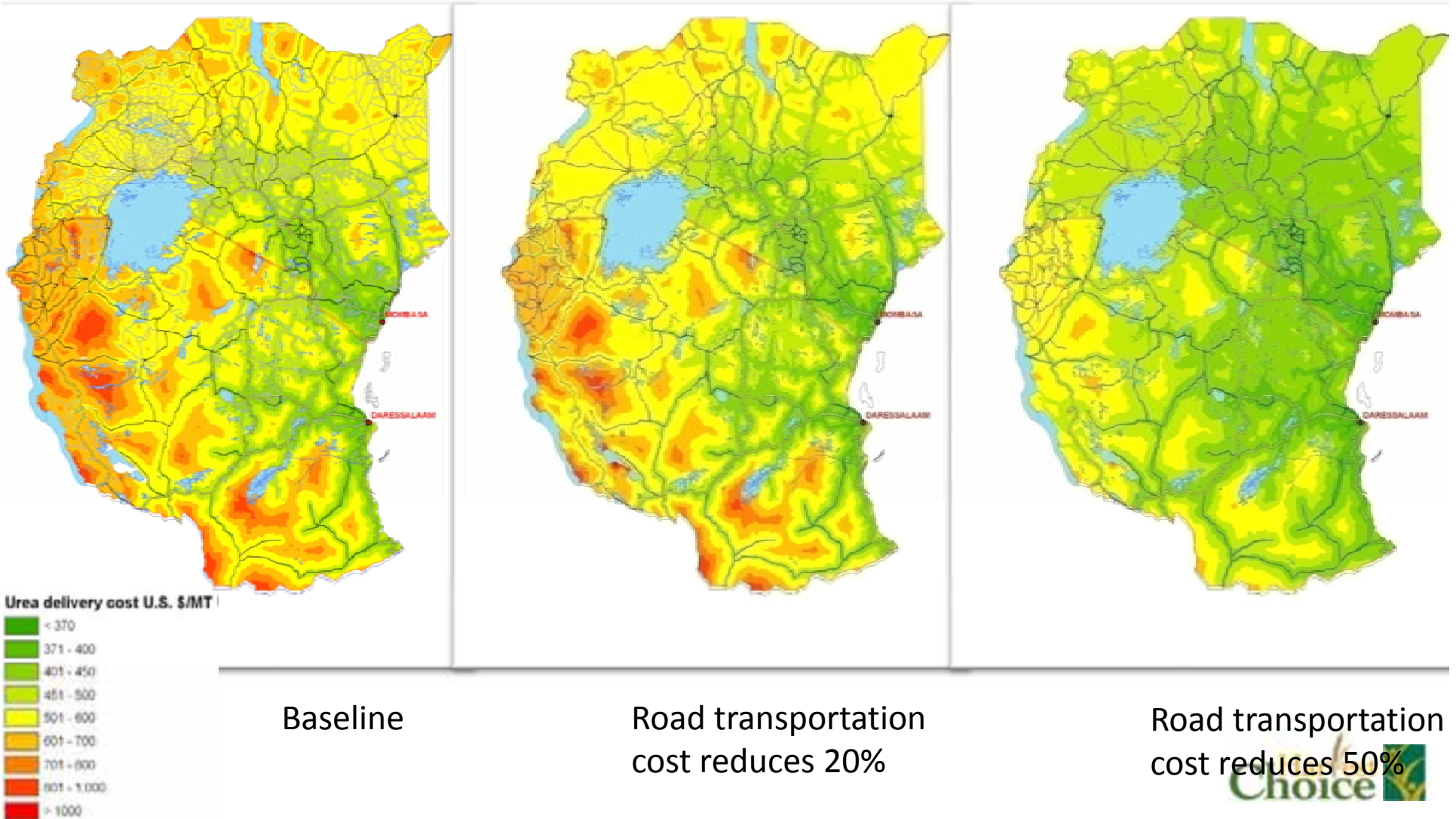
Urea delivery cost: scenario 1

Port landed Urea price decreases 20% and 50%



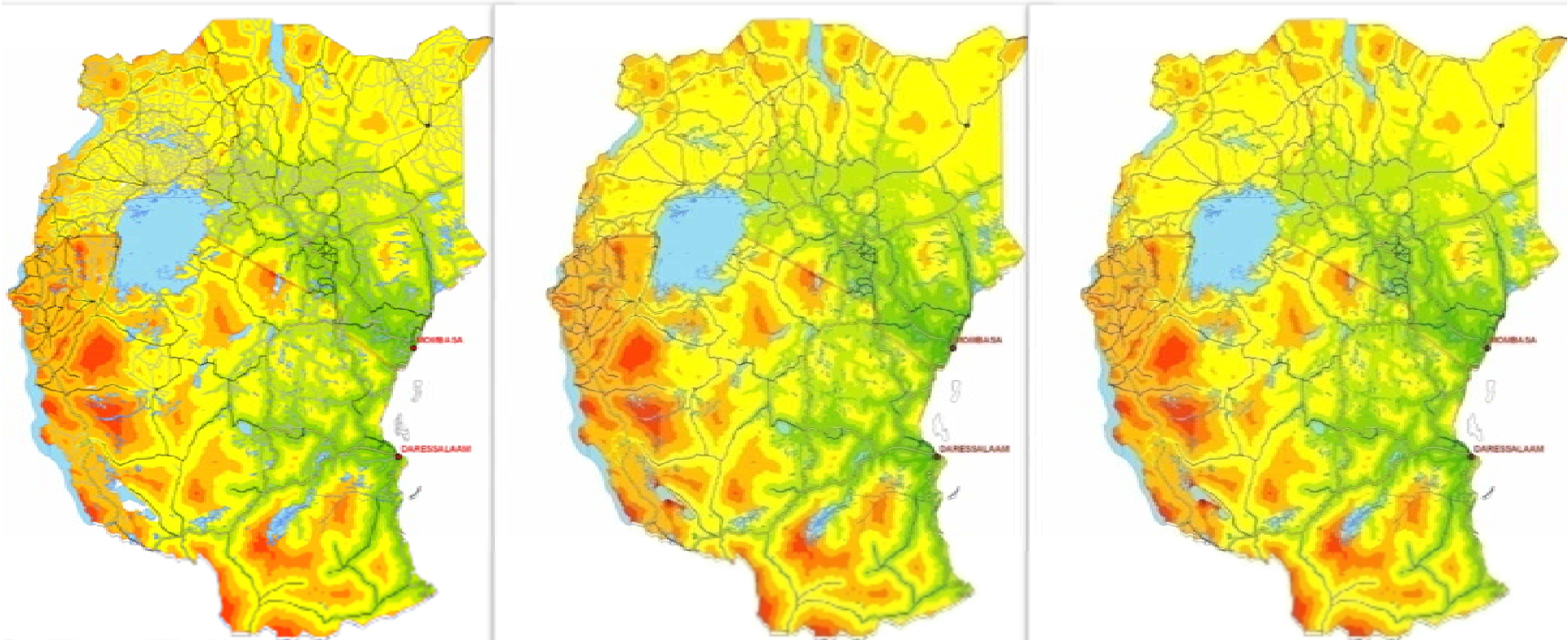
Urea delivery cost: scenario 2

Road transportation cost reduces 20% and 50%



Urea delivery cost: scenario 3

Border-crossing cost reduces 20% and 50%



Baseline

Border-crossing cost reduces 20%

Border-crossing cost reduces 50%



Maize Transportation cost

- Assumptions:

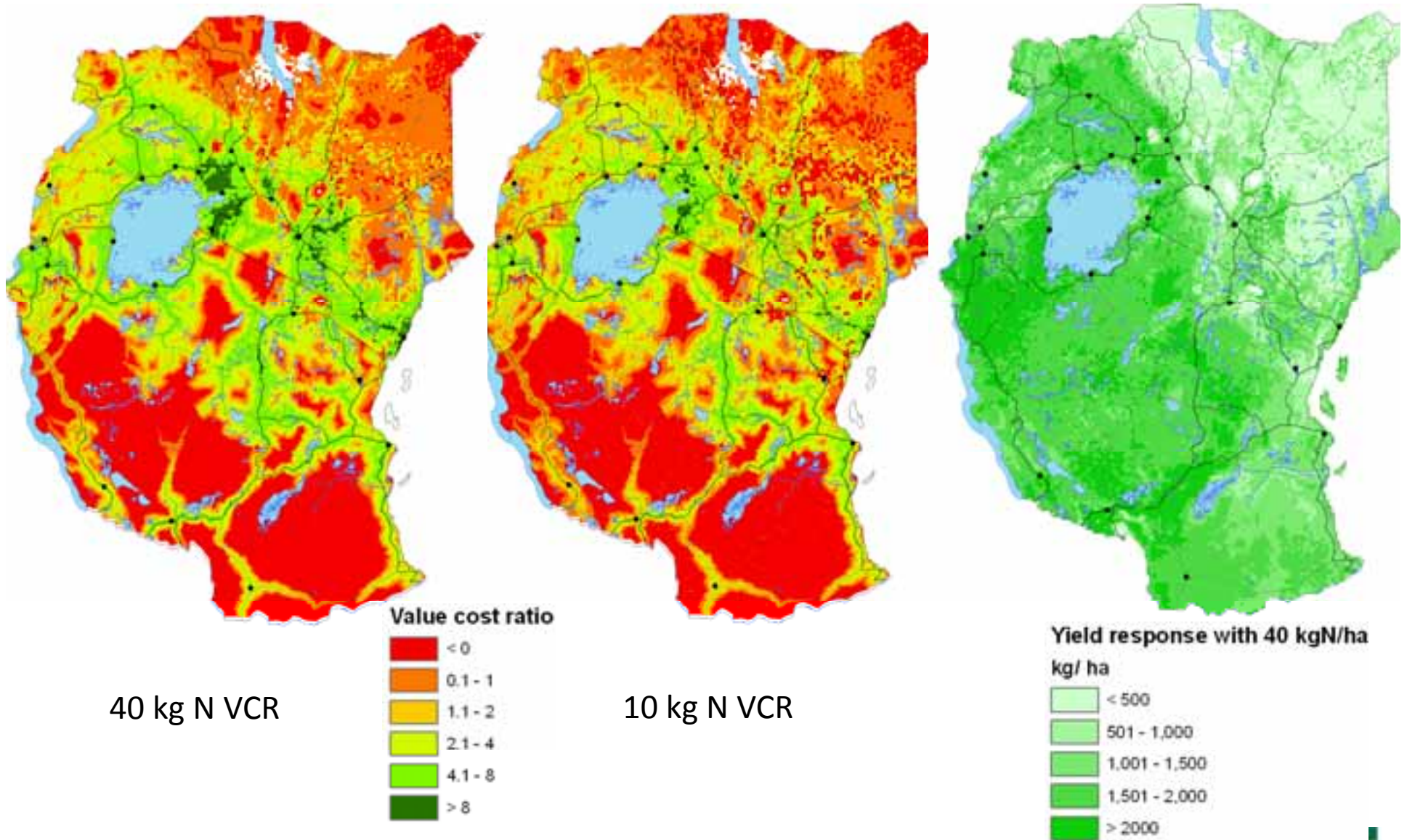
1. Farm-gate produced maize is transported to 40 target cities only

2. Farm-gate maize transported to the city that can benefit farmers the most

- 3 Farm-gate maize price =

Target city price – maize trans cost

Value Cost Ratio maps



Optimal VCR and its fertilizer application level (baseline scenarios)

