



RESEARCH PROGRAM ON  
**Climate Change,  
Agriculture and  
Food Security**



# CCAFS country programs and partnerships to deliver results

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# Example of Kenya



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## *targetCSA*

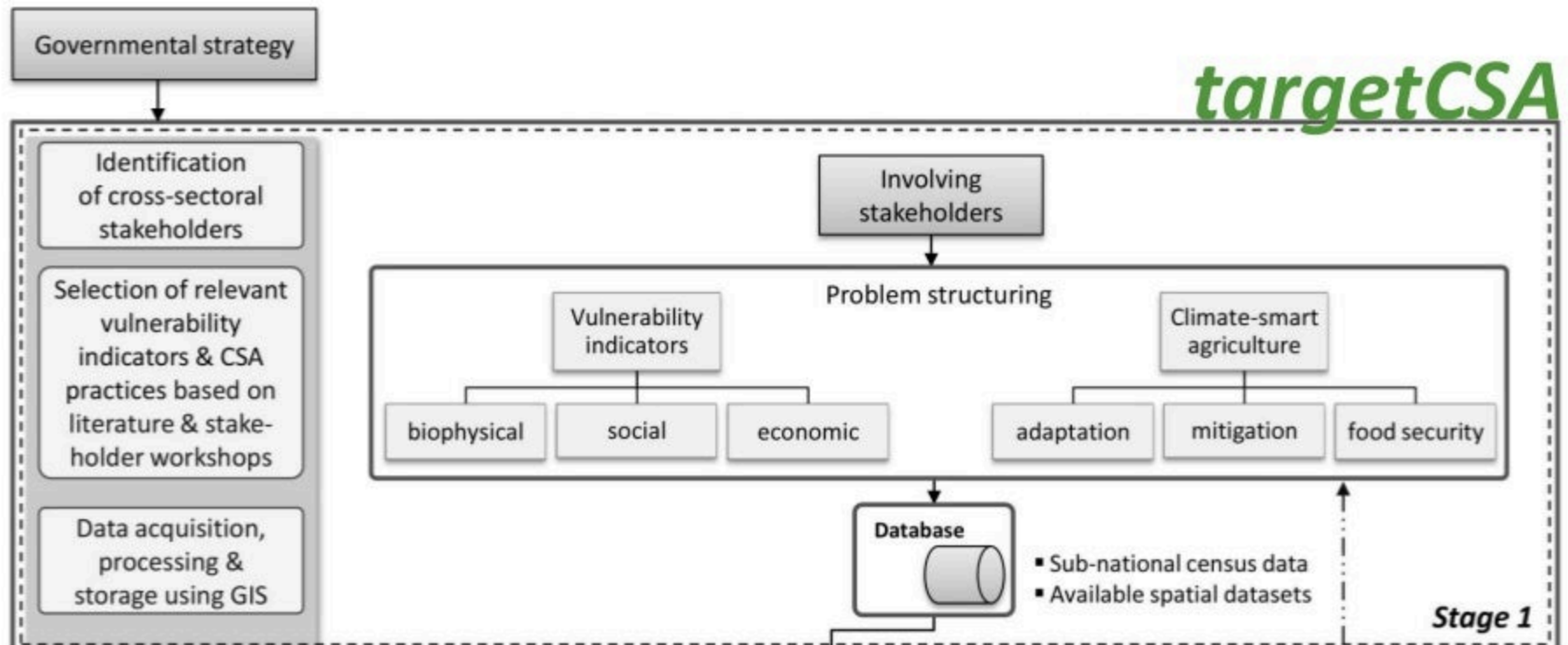
- a decision support tool to target CSA  
investments

# Purpose

- Adaptation, mitigation & food security
- Participatory planning process
- Where and how to target CSA intervention projects; 47 counties



# targetCSA



# Database



- Spatially-explicit information for Kenya
- Including biophysical, social and economic data
- In total about 140 variables
- On county level or higher resolution

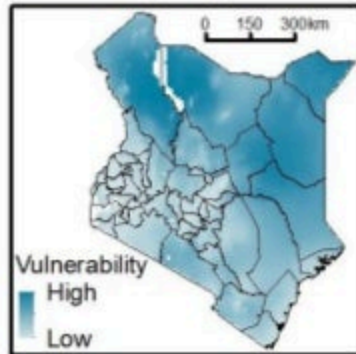


# Vulnerability indicators

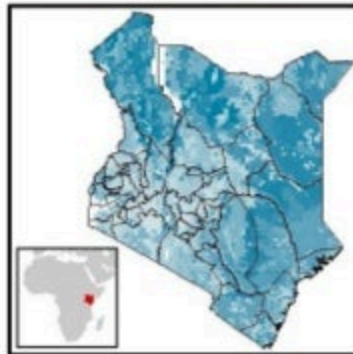
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## Biophysical

Annual precipitation

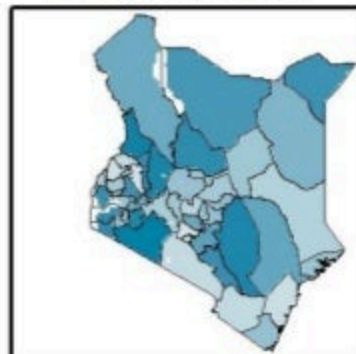


Soil organic matter

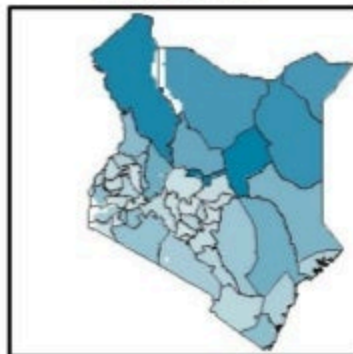


## Social

Households with access to safe water

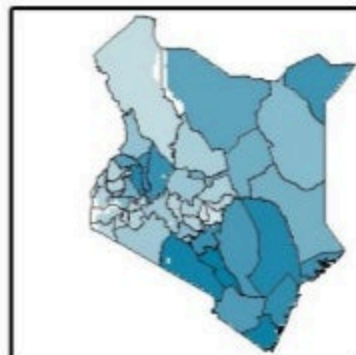


Literacy rate

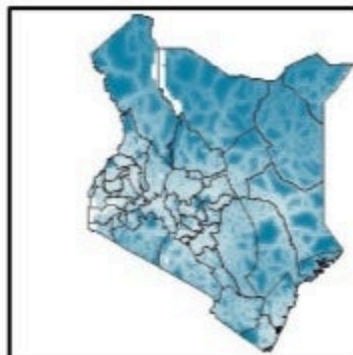


## Economic

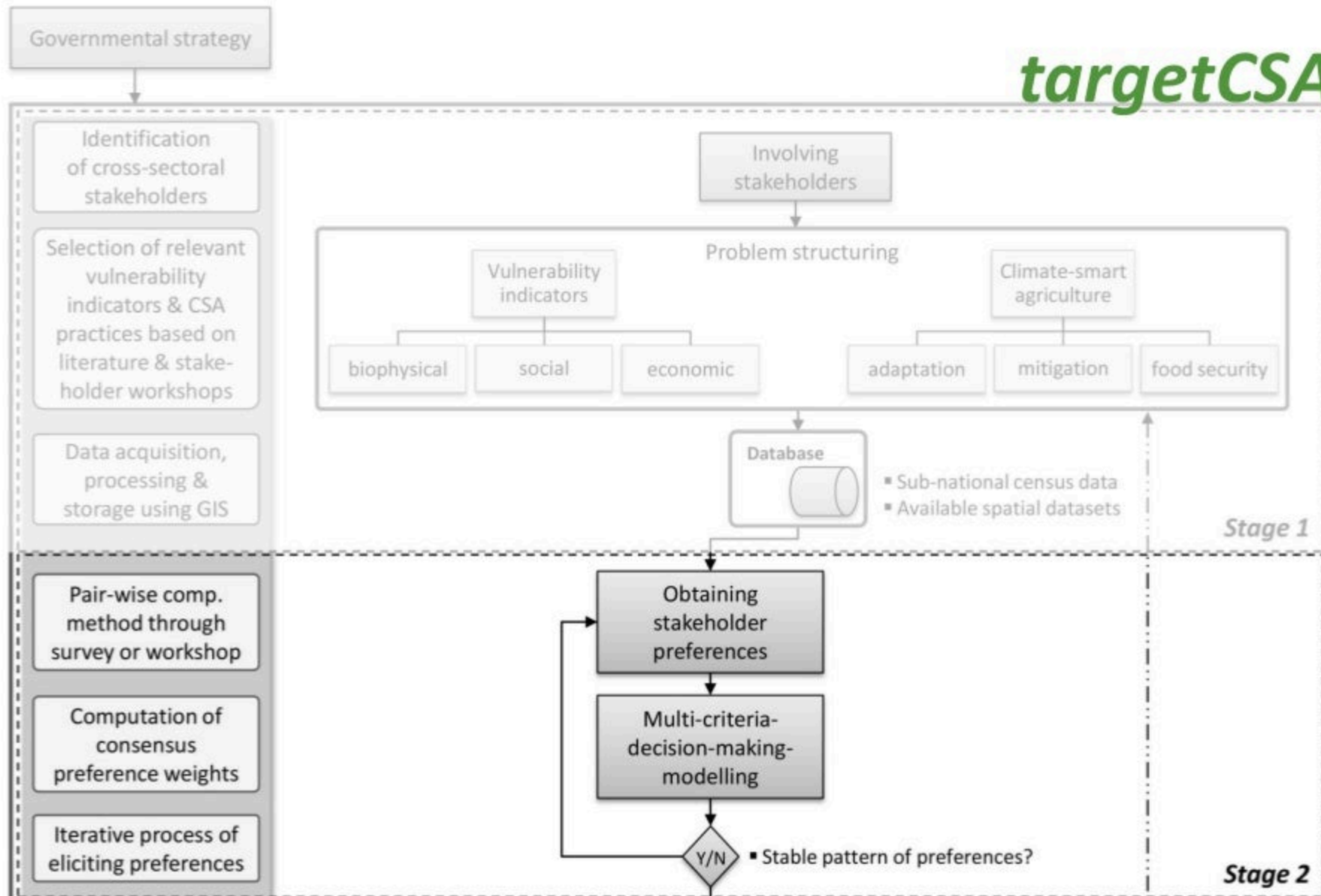
Female participation in economic activities



Connectivity through transport infrastructure



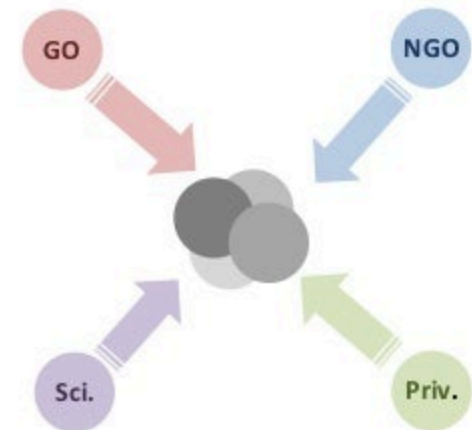
# targetCSA



# Expert survey

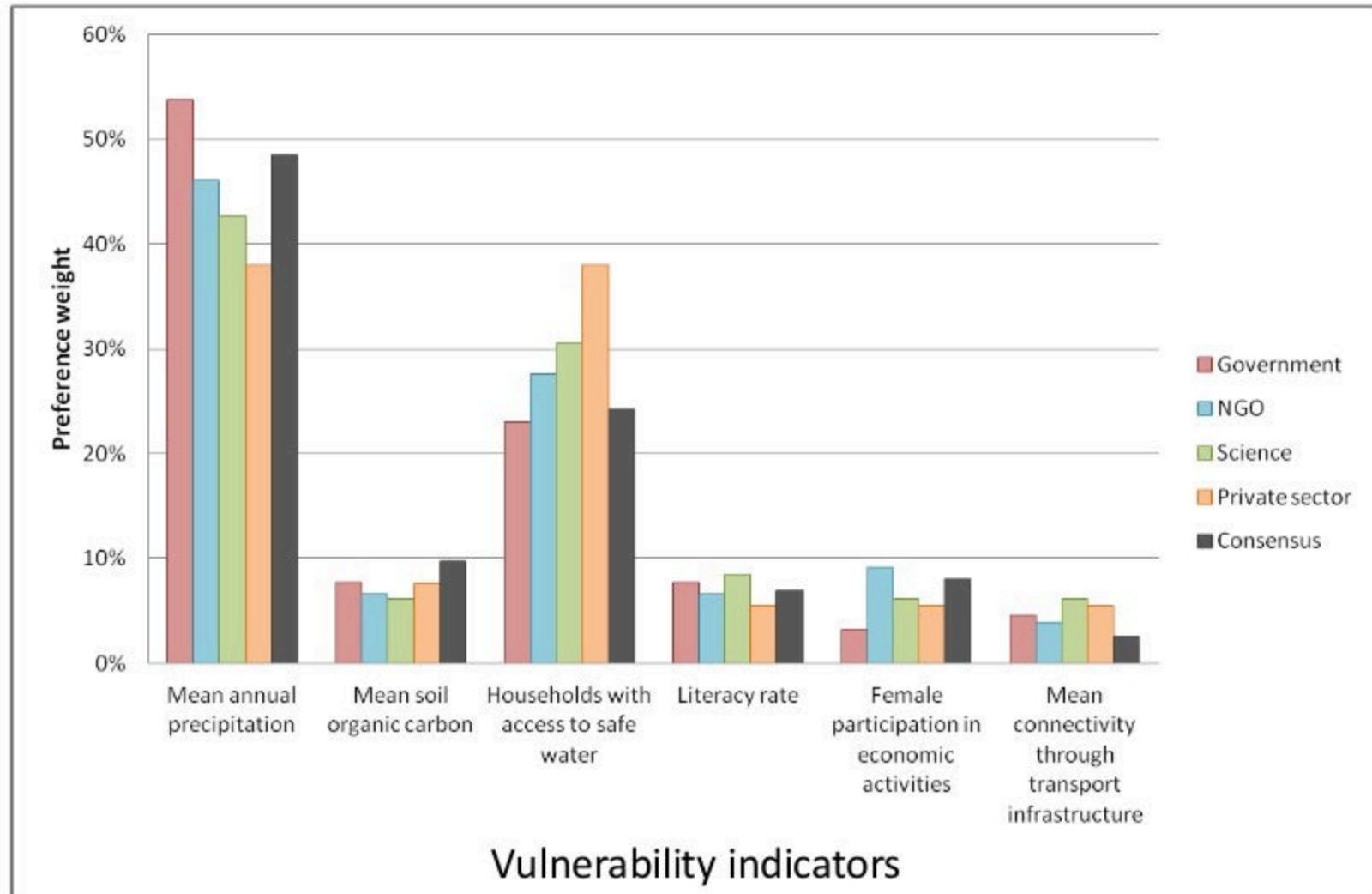


- Opinions from 32 stakeholders on:
  - 6 vulnerability indicators
  - 6 CSA-practices
- Tradeoffs/Consensus = minimized dissent



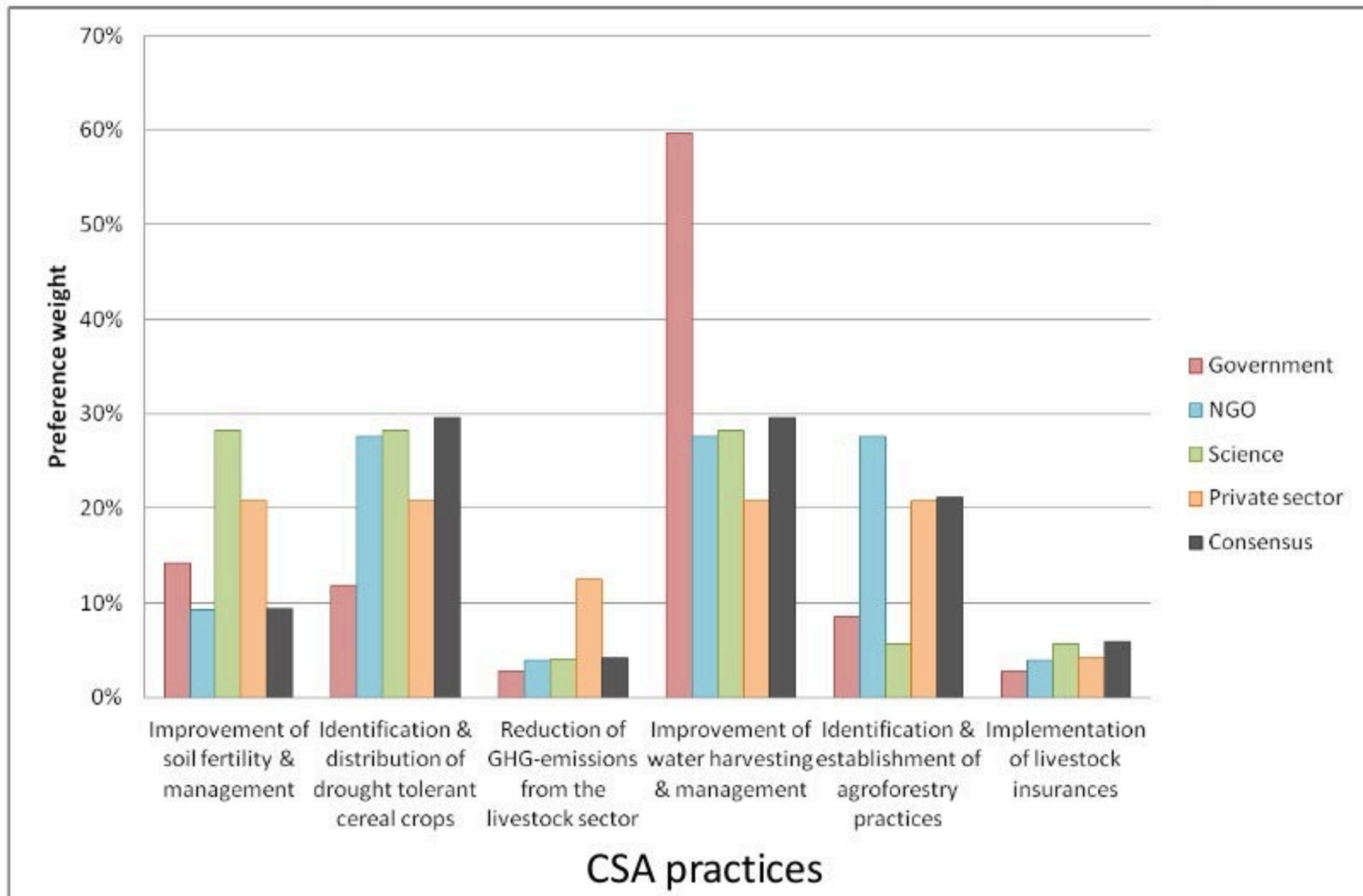


# Expert opinions



Question: Which indicators are more suitable for you in the context of climate change & agriculture?

# Expert opinions



Question: For which CSA-options do you set a higher priority?

# Opinions informed by mitigation potential of agriculture



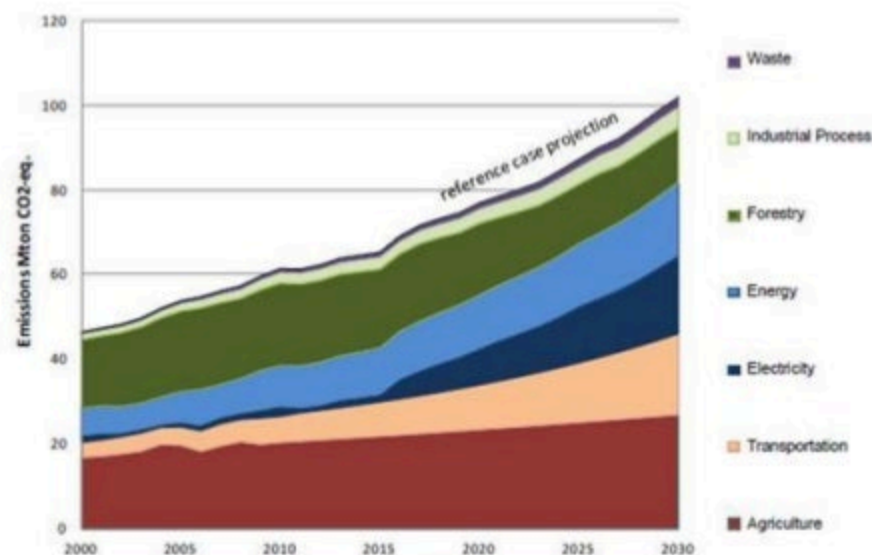
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## GHG emissions inventory

Important to identify subsectors, regions or types of agricultural activity that should be addressed in mitigation plans.

- Agriculture and forestry are the largest emitters
- Projections for 2030 show agriculture will cause 72% of Kenya's GHG emissions



Source: GoK NCCAP Mitigation Analysis 2012

# Opinions informed by climate smart development of the dairy



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## EAST AFRICA DAIRY DEVELOPMENT

Creating sustainable livelihoods for 1 million people in Uganda, Kenya and Tanzania.

OUR PARTNERS

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## In East Africa, Milk is Money

The East Africa Dairy Development (EADD) program is designed to boost the milk yields and incomes of small-scale farmers in Africa so they can lift their communities out of hunger and poverty. With help from a \$25.5 million grant from the Bill & Melinda Gates Foundation, the second phase of EADD will work with more than 200,000 farmers to improve dairy production and access to markets over the next four years.

Building on the success and lessons learned in Phase I, the vision for EADD II is to provide an additional 136,000 smallholder farms the opportunities to create financial independence and social equality. Together with our program partners, we are changing the nutritional landscape in East Africa, one family, one community at a time.

Advancing Climate-Smart Agriculture  
THE 2013 ANNUAL REPORT

Outcomes and milestones

## East African Dairy Development programme adopts climate-smart agriculture

Photo: © Dwayne Kibuka

The East Africa Dairy Development (EADD) programme works to build a robust dairy industry in a region where demand for fresh milk is close to outstripping supply. But livestock emit 12% of greenhouse gas emissions caused by human activity. Producing milk with fewer emissions per litre could play a big part in mitigating climate change.

THEMES

Low Emissions Agriculture

REGIONS

East Africa

Heifer International and CCAFS scientists are tackling problems in measuring greenhouse gas emissions in smallholder systems arising from a lack of capacity and a lack of standard methods for measuring emissions. Researchers are establishing the costs and benefits of

# Opinions informed by Index-Based Livestock Insurance



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**The  
Economist**

World politics

Business & finance

Economics

**Kenyan farmers**

## Insure my cows

**A new kind of insurance may protect herders against drought**

Apr 19th 2014 | WAJIR | From the print edition



Cornell University

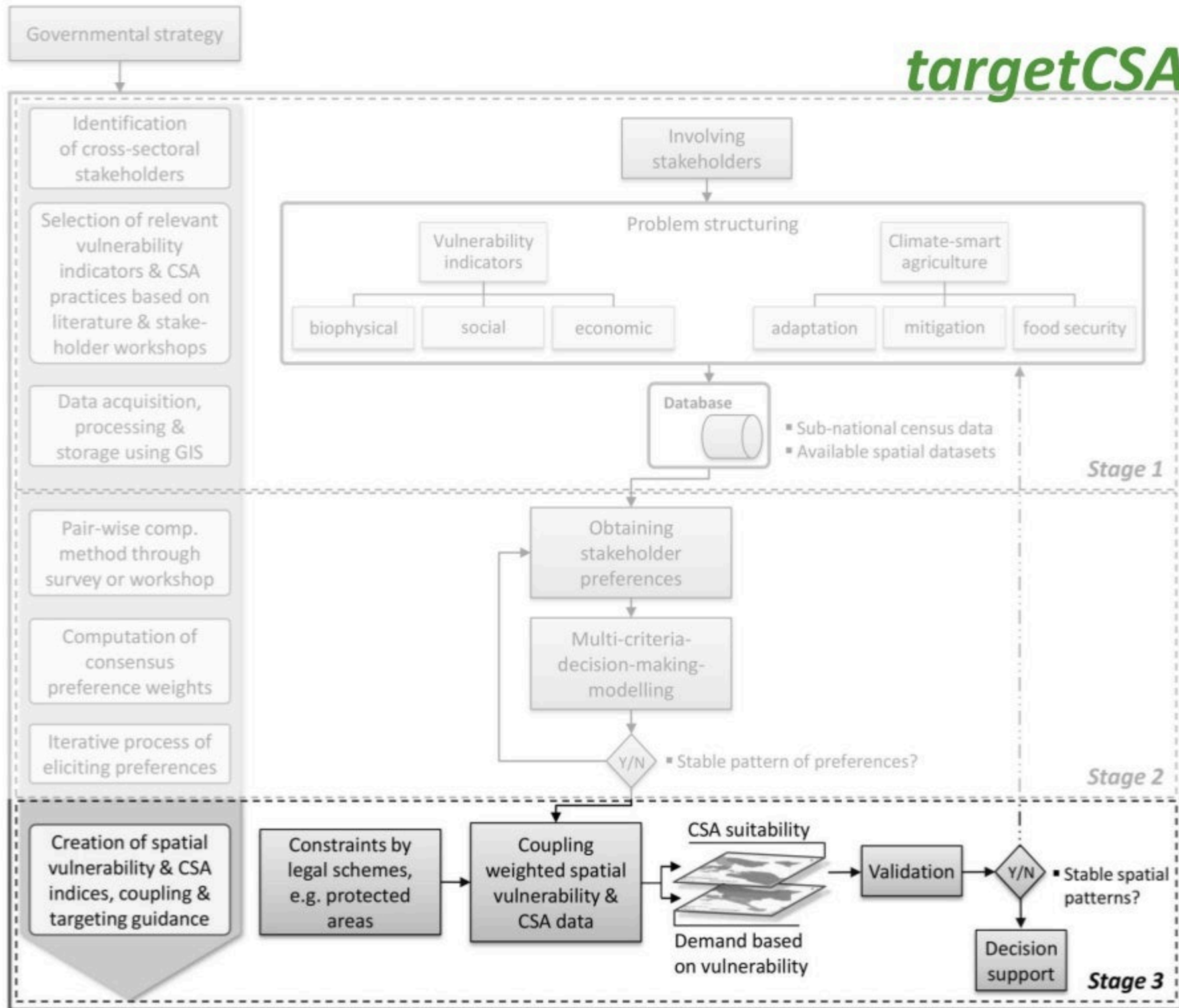


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LIVESTOCK RESEARCH  
INSTITUTE

<http://livestockinsurance.wordpress.com/>

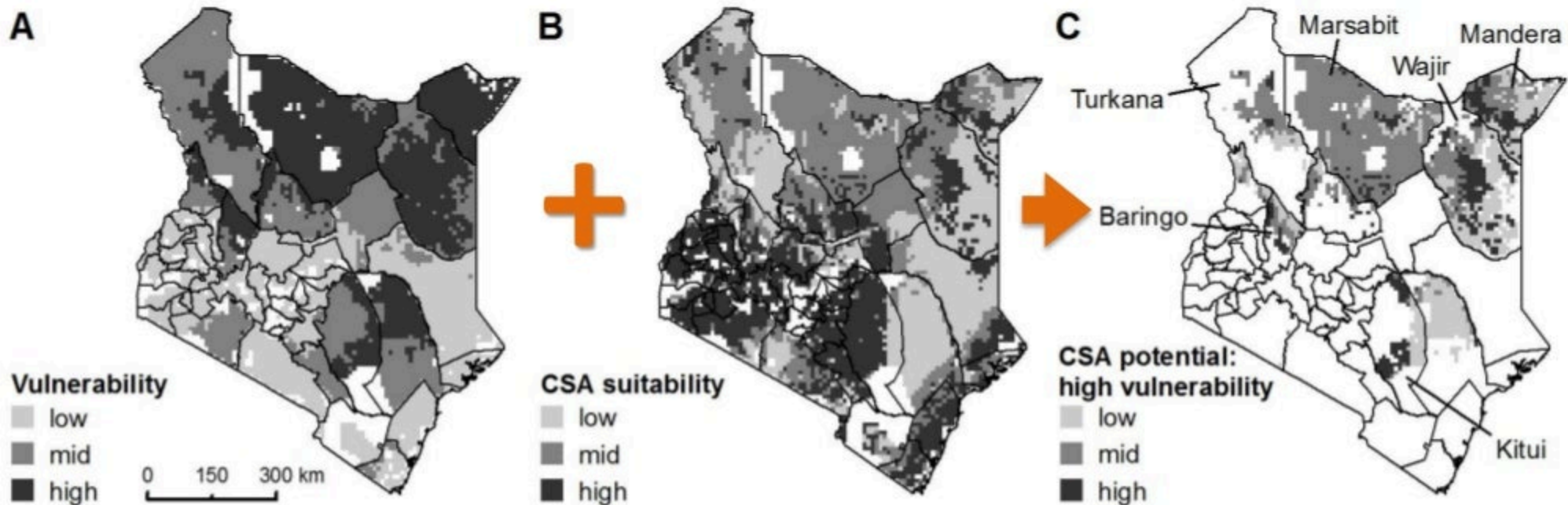
March, 10, 2014

# targetCSA



# Spatial indices

Aggregated and weighted with stakeholder opinions



# *targetCSA*: Take home



- Problem structuring & complexity reduction
- Spatial indices built on consensus & evidence
- Transferability & flexibility

*Quantitative & spatial data* + *Expert opinions* + *Multi-criteria-decision-making-model* = *targetCSA*