



Presentation from  
**2016 World Water  
Week in Stockholm**

[www.worldwaterweek.org](http://www.worldwaterweek.org)

© The authors, all rights reserved



# *Multiple-use Water Services and Dietary Diversity in Rural Tanzania and Burkina Faso*

Stockholm World Water Week

31 August 2016

## **Sara Marks**

with: Ariane Schertenleib  
Honoré Biauou  
Mary Renwick  
Boukari Salifou  
Kees Vogt  
Anna Muntwyler  
Muganyizi Ndyamukama  
Ilyasse Kabore  
Emily van Houweling  
Vincent G. Vyamana  
Vivienne Abbott  
Megann Mielke



## An Impact Evaluation of Multiple-Use Water Services in Morogoro Region 2016 Tanzania



**eawag**  
aquatic research

**wi** WINROCK  
INTERNATIONAL

**FIU** FLORIDA  
INTERNATIONAL  
UNIVERSITY

Tanzania Integrated Water, Sanitation and Hygiene (iWASH) Program

## **Multiple-use water services (MUS):**

An integrated water service delivery approach that considers people's many water needs as a starting point and integrates planning, finance, and management for domestic and productive uses of water over the long-term.

# iWASH and WA-WASH Programs



# Research Questions

- ***Impact of MUS on the **livelihoods** of rural households?***
  - water-based productive activities
  - income
- ***Impact of MUS on the **health and diet** of rural households?***
  - food security, dietary diversity
  - diarrhea, respiratory illness
  - injuries during water fetching
- ***Impact of MUS on **water service quality**?***
  - microbial safety
  - service reliability
  - water user satisfaction
  - time fetching water

# Measuring Dietary Diversity

## Introducing the Minimum Dietary Diversity – Women (MDD-W) Global Dietary Diversity Indicator for Women

Washington, DC, July 15–16, 2014

### MDD-W food groups

1. All starchy staple foods
2. Beans and peas
3. Nuts and seeds
4. Dairy
5. Flesh foods
6. Eggs
7. Vitamin A-rich dark green leafy vegetables
8. Other vitamin A-rich vegetables and fruits
9. Other vegetables
10. Other fruits





**2,704 Households Surveys**



**241 Water Samples**



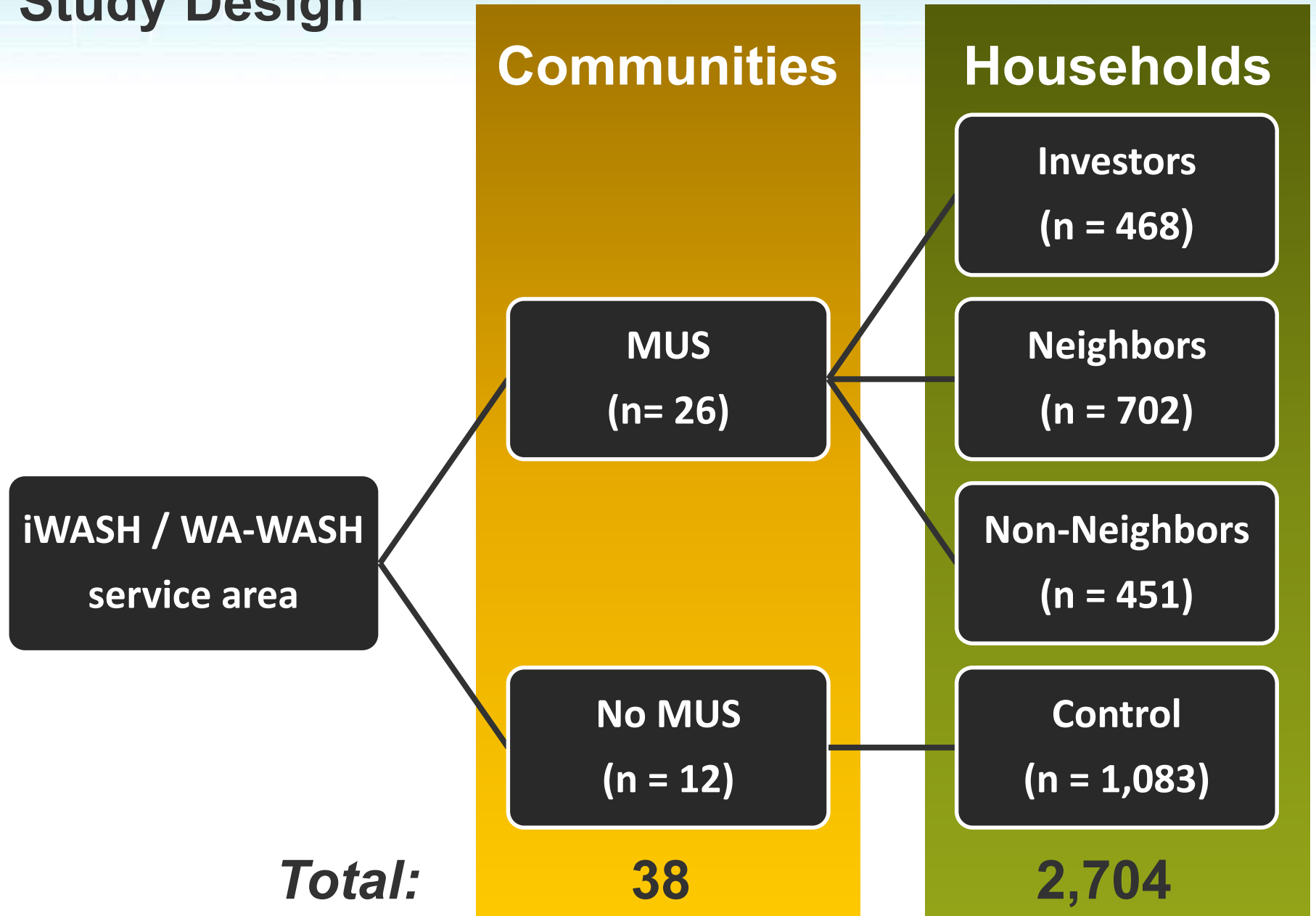
**38 Key Informant Interviews**

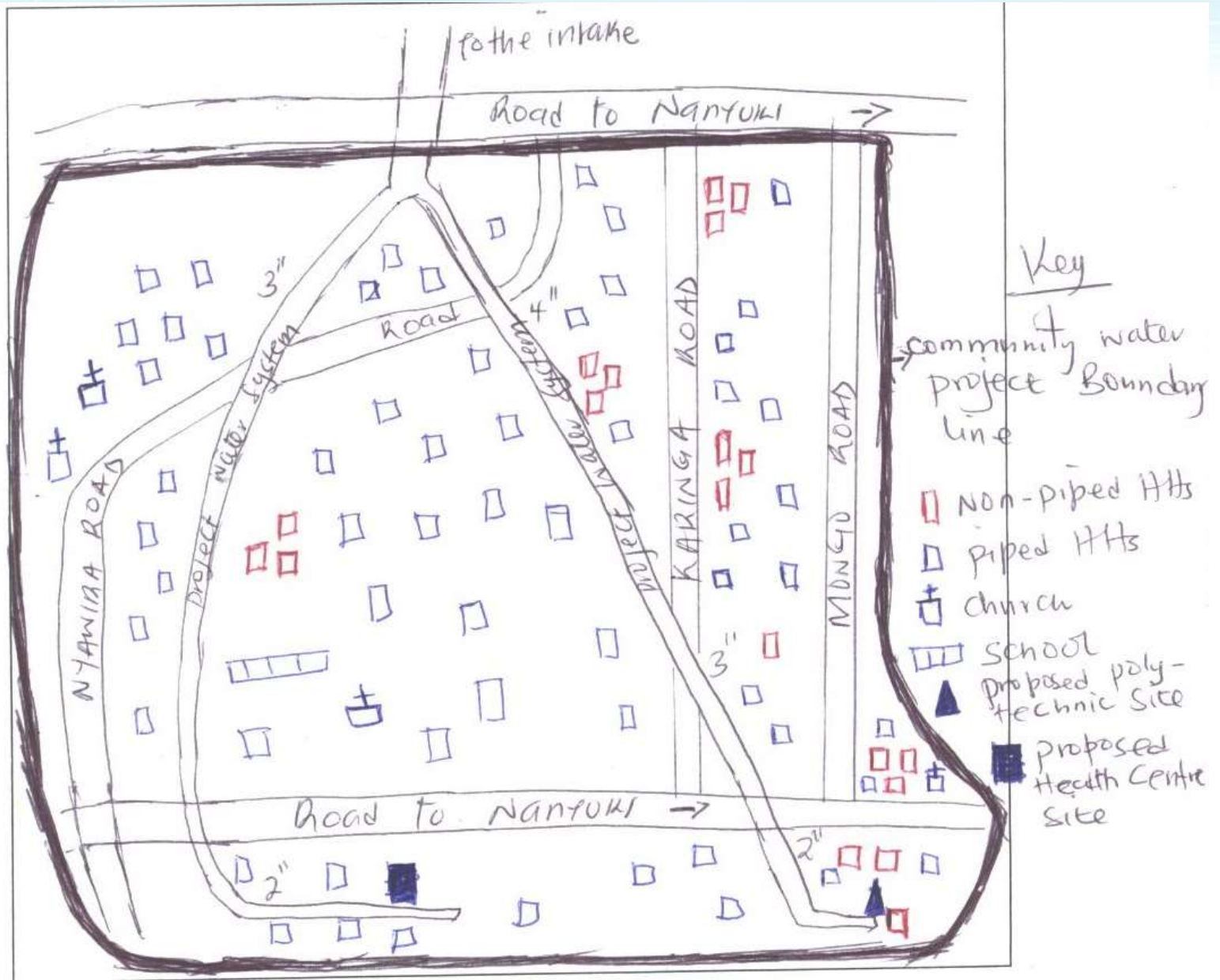


**8 Focus Group Discussions**

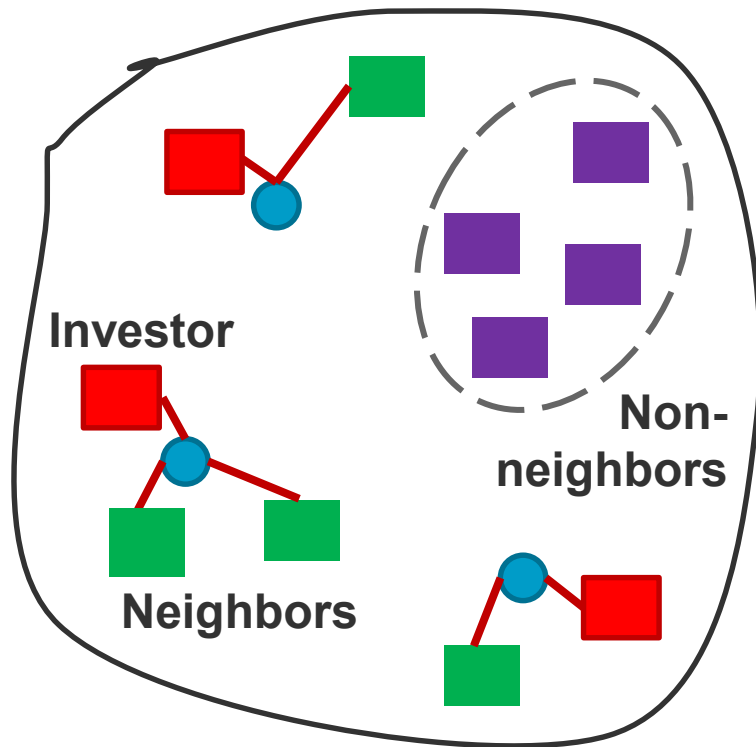


# Study Design

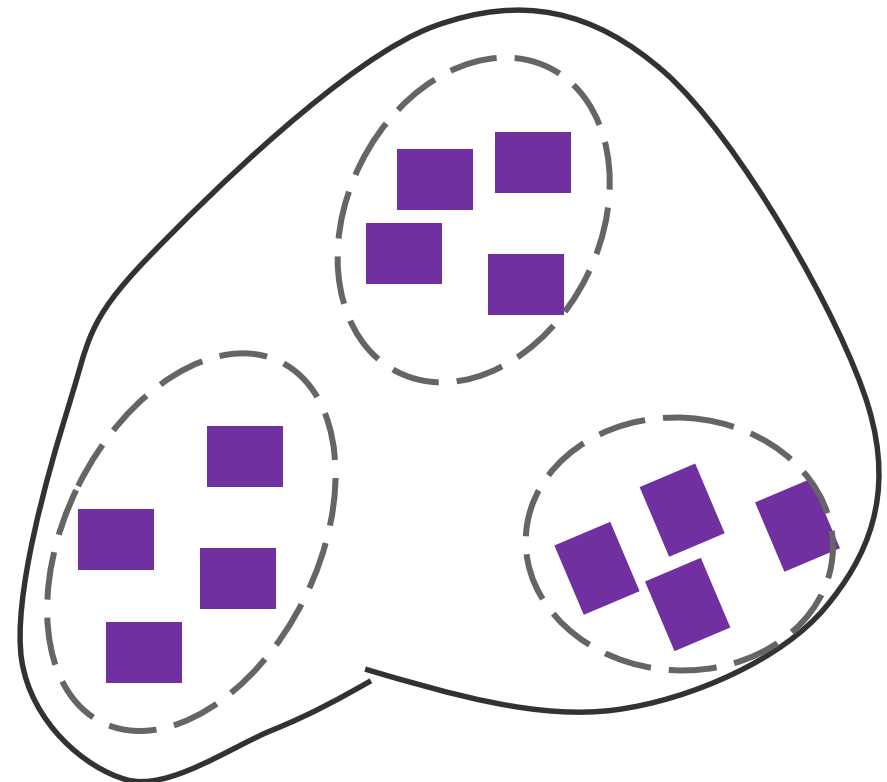




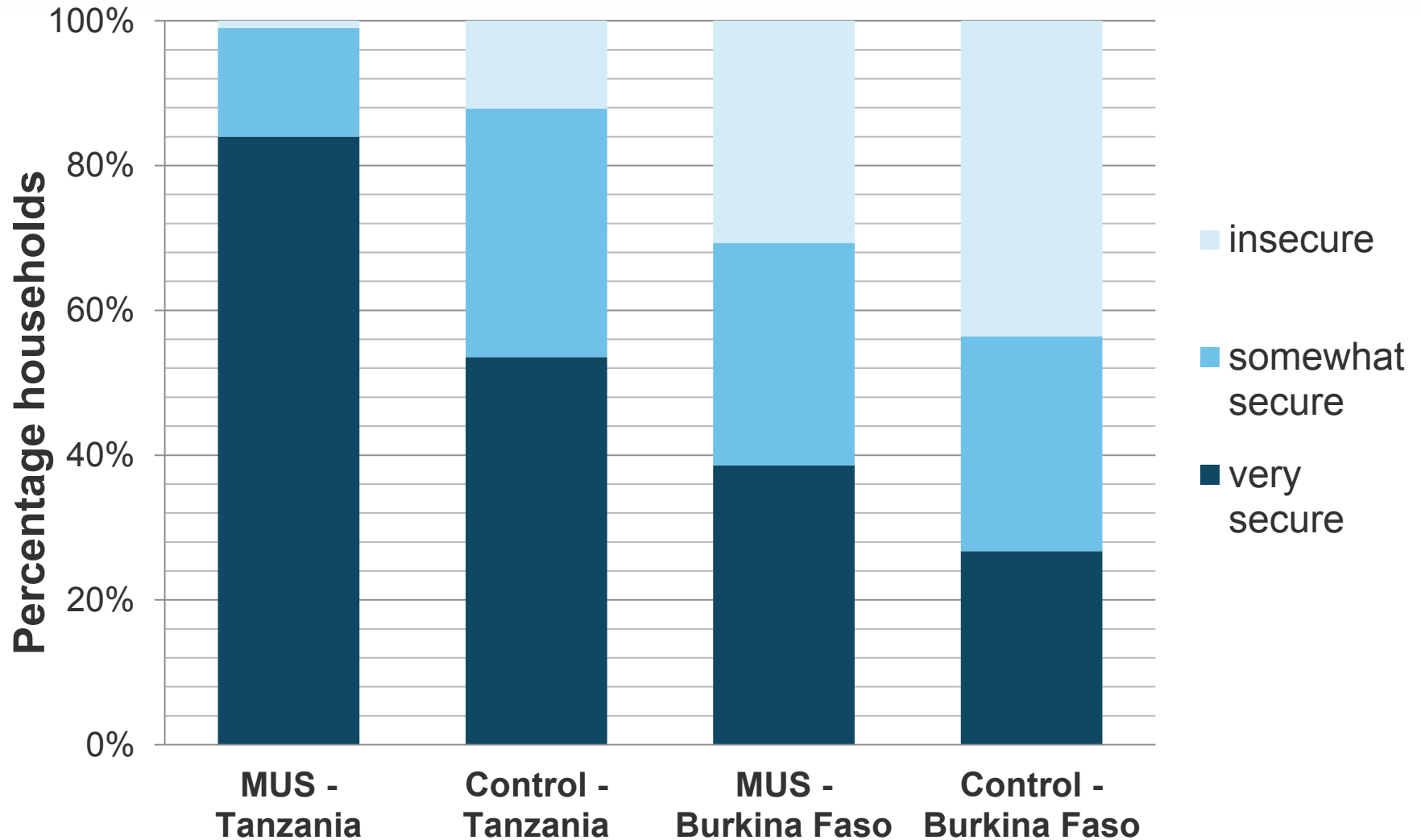
## MUS community



## Control community



# Results: MUS enhances food security

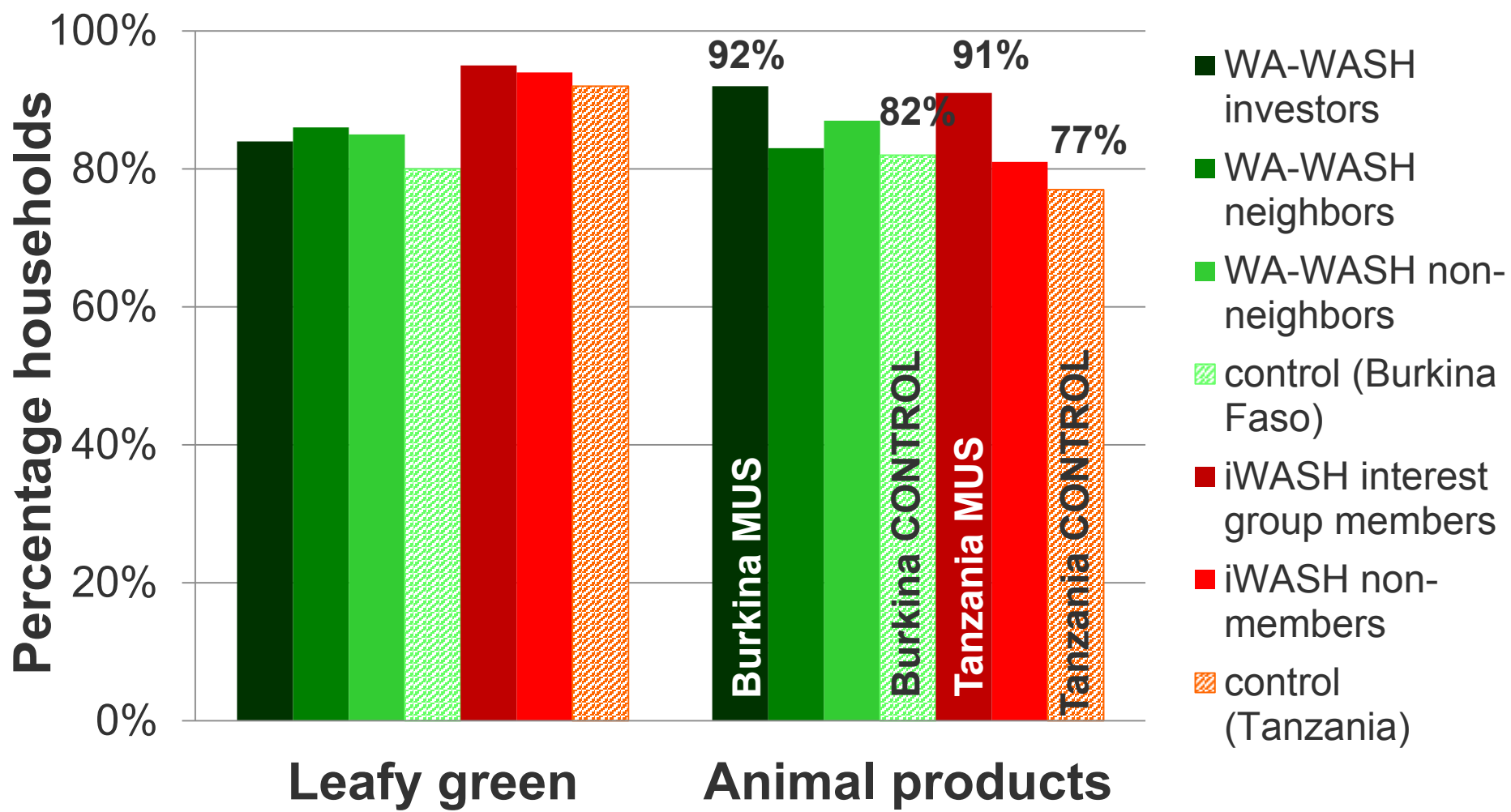


# Results: Improved dietary diversity (Tanzania)

**Table 8: Share of households consuming each food type in the past week and mean number of food types consumed.**

	Control (n = 645)	iWASH MUS non- members (n = 408)	iWASH MUS members (n = 324)
Starchy foods	99%	100%	100%
Beans	92%	93%	97%
Nuts	25%	29%	35%
Dairy	29%	37%	57%
Meat	68%	75%	84%
Eggs	18%	25%	34%
Leafy Greens	92%	94%	95%
Vegetables	81%	69%	67%
Fruits	47%	52%	71%
<i>Mean number food types consumed</i>	5.5	5.7	6.4

# Results: More meat, milk and egg consumption



# Key Messages...

Multiple-use water services enhanced  
**food security** (self-reported)

Slight improvement in overall  
**dietary diversity** (Tanzania only)

**Animal product** consumption  
improved most

# Thank You!

sara.marks@eawag.ch



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Agency for Development  
and Cooperation SDC



**WINROCK**  
INTERNATIONAL

Putting Ideas to Work



**USAID**  
FROM THE AMERICAN PEOPLE

