



Trans-SEC

Innovating pro-poor Strategies to safeguard Food Security using Technology and Knowledge Transfer

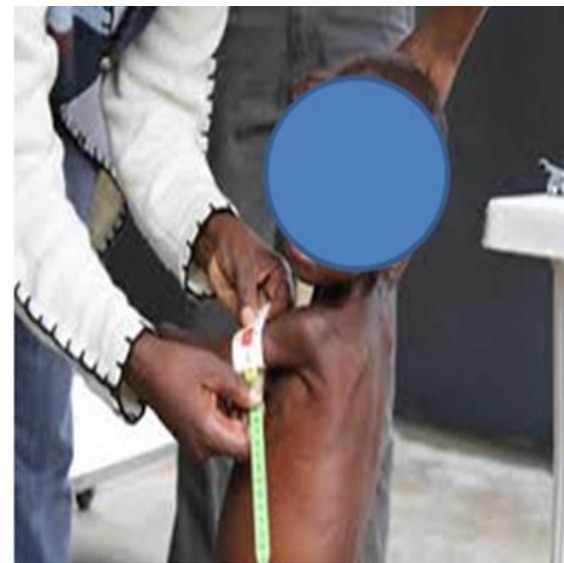
Seasonal and agro-climatic variations in kitchen gardening: Impact on household dietary diversity in rural Tanzania

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Background

- The nutrition situation in rural households is characterized by:
 - Inadequate attainment of the physical dimensions of the body in children
 - Poor micronutrient status of children and adults
- Cause: inadequate dietary intake coupled with poor environmental sanitation and food safety.





Background...

- Strategies at national level= supplementation and fortification
- But limited due to:
 - strongly relies on international aid
 - Cannot reach all at risk groups
 - Conflicting logistics of delivery
 - Target only sub groups of population
- An alternative sustainable approach
 - Increase consumption of nutrient rich foods
 - Example: introducing household kitchen gardens and
 - Small animals/livestock

Goal:
To examine the influence of home gardening on household dietary diversity during different seasons in various agro-climatic zones



Trans-SEC project

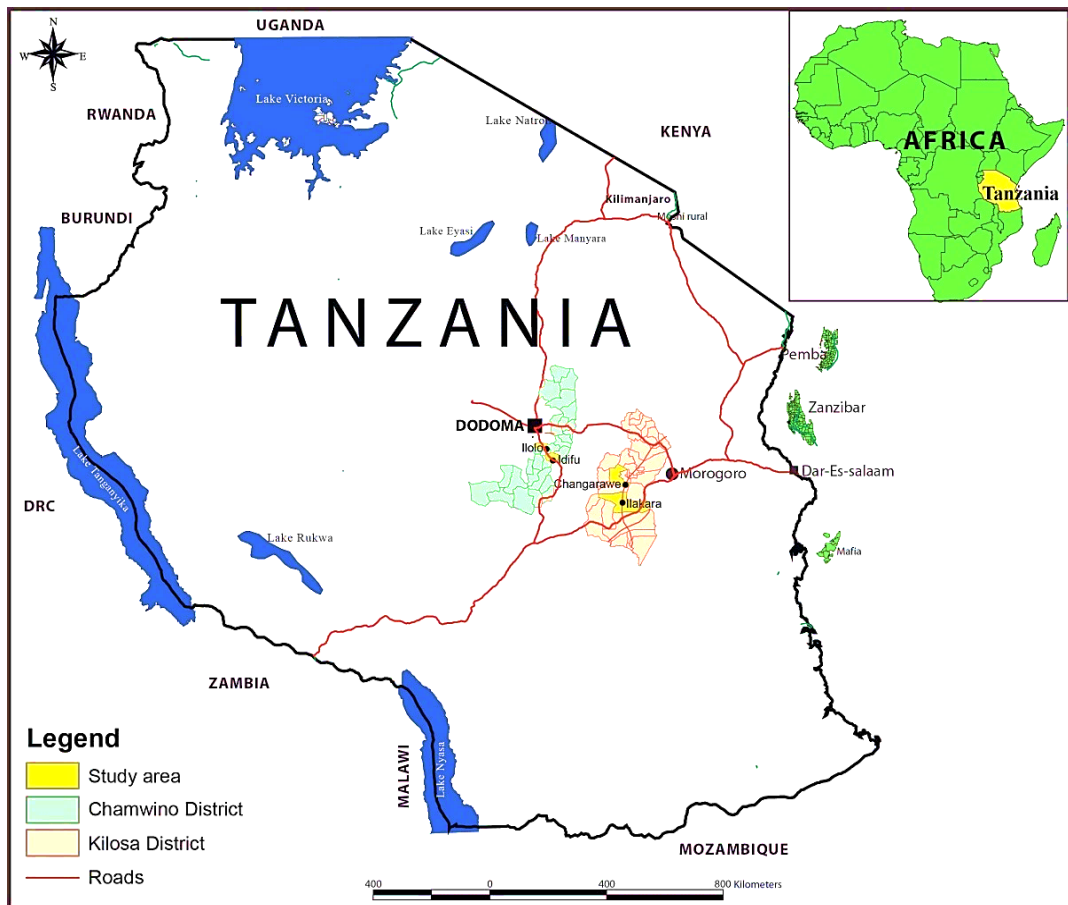


Aimed to improve food security for the most vulnerable rural populations in Tanzania by applying food securing upgrading strategies along local and regional food value chains.

Funded by the German Federal Ministry of Education and Research (BMBF) and co-financed by the Federal Ministry for Economic Cooperation and Development (BMZ).



Location



- Two different agro-climatic zones
 - ✓ sub humid Morogoro region
 - ✓ semi arid Dodoma region
- Two villages in each zone.
- Represent two different food systems
- Sufficiently diverse environmental and socio-economic conditions for investigating causative factors for food and nutrition insecurity

Methods

- Population: All household members
- Sample: 240hh Rainy season, 200hh Dry season

Activities

- Nutrition training
- Kitchen gardening training/ skills
- Nursery Production
- Cooking demonstrations
- Family Nutrition
- Dietary diversity: Rainy & Dry seasons



Methods...

- No. of kitchen gardens established

	Rainy season	Dry season	Total
Morogoro	98	70	168
Dodoma	115	92	207
			375



- Cropping calendar for main food crops

	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Dodoma	Rainy season								Rainy season			
Maize, bulrush millet				Harvesting					Planting			
Morogoro	Rainy season									Short rains		
Maize	Planting		Harvesting									



Dietary diversity score



Food groups?

Is a simple **count of food groups** that a household or an individual has consumed over the preceding 24hrs (FAO guidelines)

Dietary diversity tertiles

1. Low DDS= ≤ 3 food groups

2. Medium DDS = 4-5 Food groups

3. High DDS= ≥ 6 food groups

Group No	Score 1 if any of the food item within a food group was consumed and 0 if the food item was not consumed in the past 24 hour and its frequency of consumption	Score 1=Consumed 0=Not consumed
Food Groups		
1	Grains/ cereals (Bread, rice, or other foods made from grains, oats, maize, barley, wheat, sorghum, millet or other grains? (Other locally available grain)	1
2	Roots and tubers (Potatoes, yams, cassava or any other foods made from roots or tubers)	1
3	Vegetables (Any vegetables)	1
4	Fruits (Any fruits)	1
5	Meat (Beef, pork, lamb goat, rabbit, wild game, chicken, duck or other birds, liver, kidney, heart or other organ meats)	1
6	Eggs (Any eggs)	1
7	Fish (Any fresh or dried fish or shellfish)	1
8	Pulses (Food made from beans, peas, lentils or nuts)	1
9	Milk (Any cheese, yogurt, milk or other milk product)	1
10	Oil (Any foods made with oil, fat or butter)	1
11	Sugar / sweetener (Any sugar or honey)	1
12	Condiments and seasoning (for flavour, eg chilies, spices, herbs, fish powder, tomato paste, flavour etc)	1



How does HDDS reflect to food security?

HDDS is meant to reflect in a snapshot form, the economic ability of a household to access a variety of foods.

On a nutrition basis, IDDS is meant to reflect nutrient adequacy/ quality of the diet

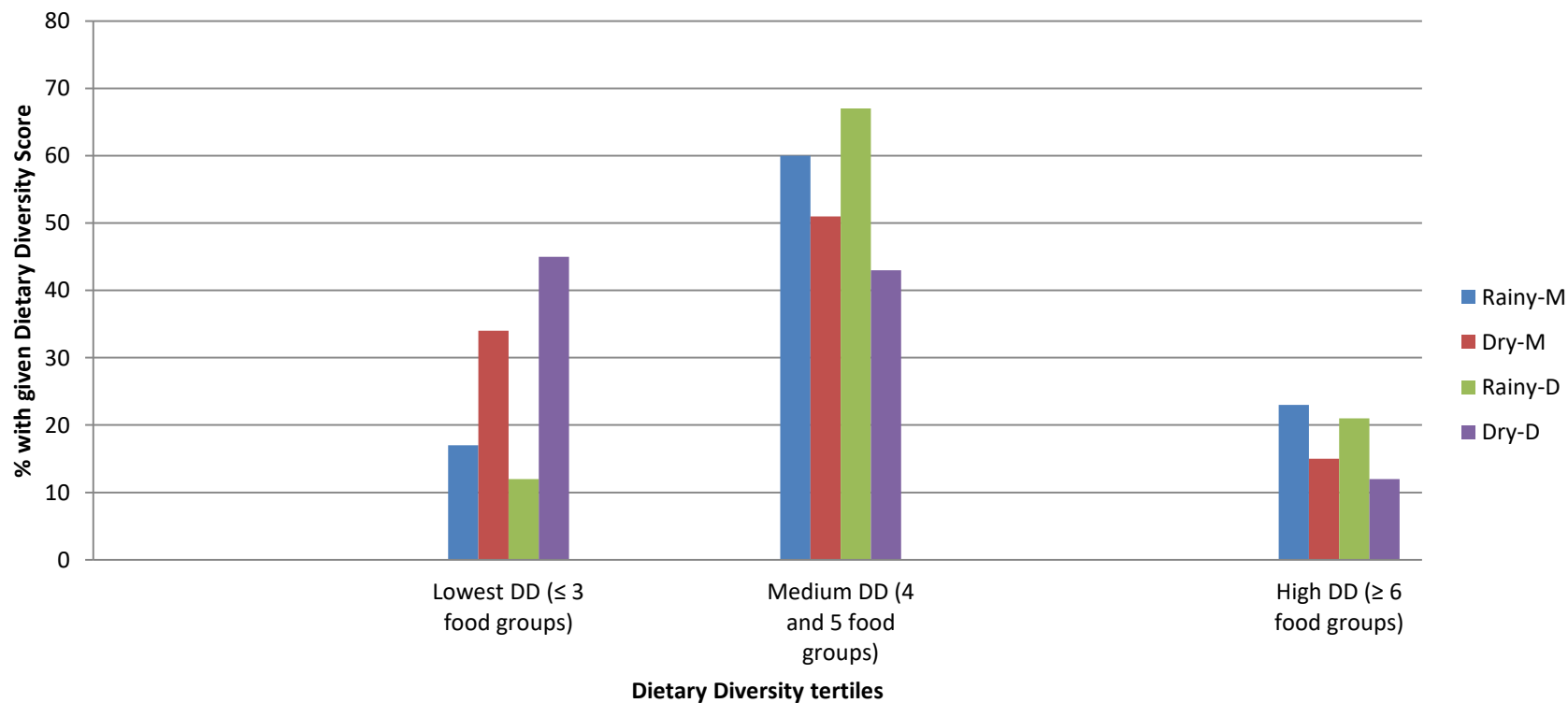
Source, FAO

Consumption of various food groups among regions

Food groups	Morogoro		Dodoma	
	Rainy season (n=120) %	Dry season (n=100) %	Rainy season (n=120) %	Dry season (n=100) %
Cereals	100	100	100	100
Vegetables, Vitamin A Rich & other Vegetables and Tubers	90	52	95	65
White tubers and roots	13	10	10	16
Vitamin A rich fruits & Other fruits	7	7	10	3
Flesh & Organ meat (iron-rich)	37	38	20	19
Eggs	13	14	7	29
Fish	30	17	13	0
Legumes, nuts and seeds	47	79	50	65
Milk and milk products	10	14	7	13
Oils and fats	87	93	67	61
Sweets	93	86	87	88
Spices, condiments, beverages	97	100	33	77

Dietary diversity tertiles

Household dietary diversity tertiles



Seasonality, kitchen gardening activities and household dietary diversity

	Rainy season				Dry season			
	Dodoma (n=120)		Morogoro (n=120)		Dodoma (n=100)		Morogoro (n=100)	
	β	P	β	P	β	P	β	P
Received nutrition education from the TP	.00		-.01		.03		.07	
Received kitchen gardening training from TP	0.7	≤ 0.05	.00		.0.1	≤ 0.01	.05	
Participated in kitchen gardening implemented at demonstration point	.00		-.02		.09		.06	
Received inputs for kitchen gardening from TP	.03		.03		.06		.17	.01
Participated in cooking demonstrations	.00		.01		.11	$\leq .001$.15	$\leq .01$
Received technical support from village extension staff	-.03		.02		.04			
Kitchen gardening participation in 6 vital activities	.04		.05		.13	$\leq .01$.19	$\leq .001$
Abbreviation: TP-Trans-SEC Project								
^x The following confounders were controlled: household size, distance to water source, source of cooking fuel, age of the mother, education level of the mother and region of residence								
Un coloured= not significant								



Policy issues

- **Vitamin A rich foods** need to be the main component of any garden and strategies for growing these effectively, all year round, need to be developed and supported
- There need to be solutions to providing **safe, affordable water**
- Project appear to have more success in **rural** contexts and there is potentially a greater nutritional need particularly on commercial farms

Thank you!

