

An End-to-End Approach to Improve Fruit and Vegetable Production and Consumption:

Design, Preliminary Results, and Next Steps from CGIAR FRESH Sri Lanka

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Background and study design

Motivation for the FRESH approach in Sri Lanka

- **Dietary intake of fruit and vegetables is low.** 68% of Sri Lankan adults do not consume the recommended 5 servings of F&V (STEPS survey 2021).
- **Agricultural production of FV has not realized its full potential.** Barriers include: pests and diseases, access to quality inputs, post harvest losses, and marketing issues.
- **Since the economic crisis in particular, the affordability of safe, nutritious fruits and vegetables has been a major concern.** Meanwhile, low-cost ultra-processed foods are relatively low-cost, and readily available even in urban and rural areas.

Limited evidence on the impact of food systems-based interventions to improve FV intake in Sri Lanka

The FRESH End-to-End (ETE) Approach

DEMAND

SUPPLY

FOOD ENVIRONMENT



Nutrition,
health & food
security

Poverty
reduction,
livelihoods &
jobs

Climate
adaptation &
mitigation

Enviro
health &
biodiversity

Gender
equality, youth
& social
inclusion

FRESH activities in Sri Lanka

Demand

To be designed and layered on

Menu of intervention options compiled based on desk review, key informant interviews, and stakeholder engagement, to be refined *using co-creation process**

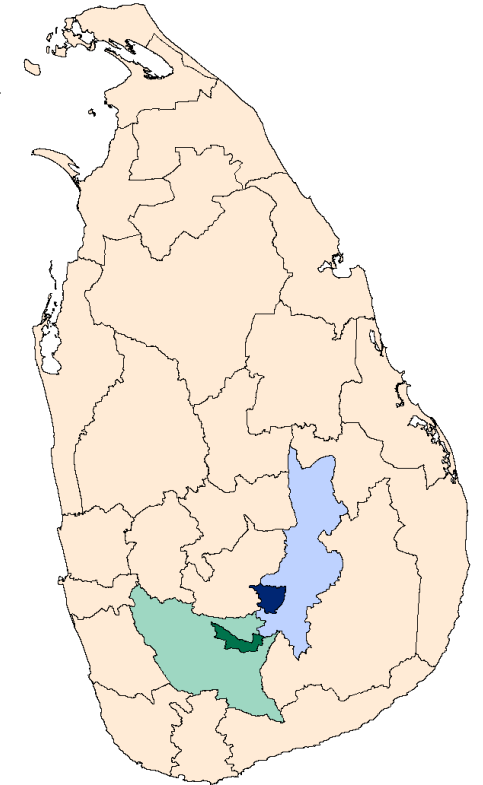
Supply

Production hub approach

Trainings: Good agricultural practices (GAPs) identified through participatory adaptive trials in demonstration plots, transferred to farmers via farmer field days and extension staff, addressing:

- Integrated water, nutrient, pest, and disease management
- Food safety
- Post-harvest practices

Access to inputs: Seed distribution by local seed companies via farmer field days



Primary ETE evaluation research question

What are the impacts of these FRESH supply, FE, and demand activities on production of vegetables and dietary intake of FV among women and men?

To further understand program context:

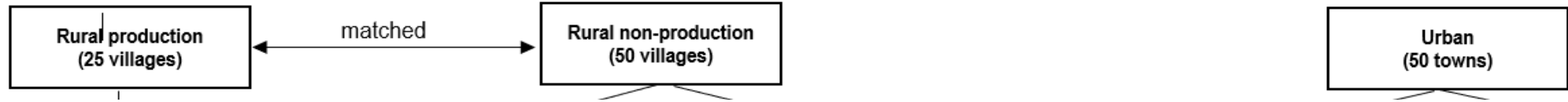
Urban and rural study sites



Food environment assessments



Study Design: Cluster matched, partially randomized, controlled trial



Data collection



Household survey

- Roster, assets, shocks
- Crop cultivation,
- Consumption and expenditure
- Drivers of food choices
- Food and water security



Dietary intake assessment

- 24-hour multi-pass dietary recalls via phones among women and men.
- Fruit and vegetable consumption frequency questionnaire.



Food environment assessment

- Census of market/ retail outlets.
- Market vendor census.
- Marketing and advertisements
- Food list for quality, availability and prices.

Preliminary description of Sri Lankan households, diets and food environments from FRESH baseline surveys

Characteristics of sample (N=2872 households)



Household Head

86.7% male-headed



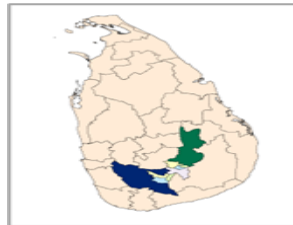
Household size

On average: 4.3 ± 1.2 members



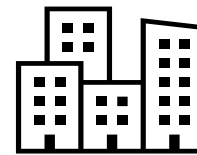
Children under 5

23.8% households



District

53.8% Badulla
46.2% Ratnapura



Location

61.2% rural
38.8% urban

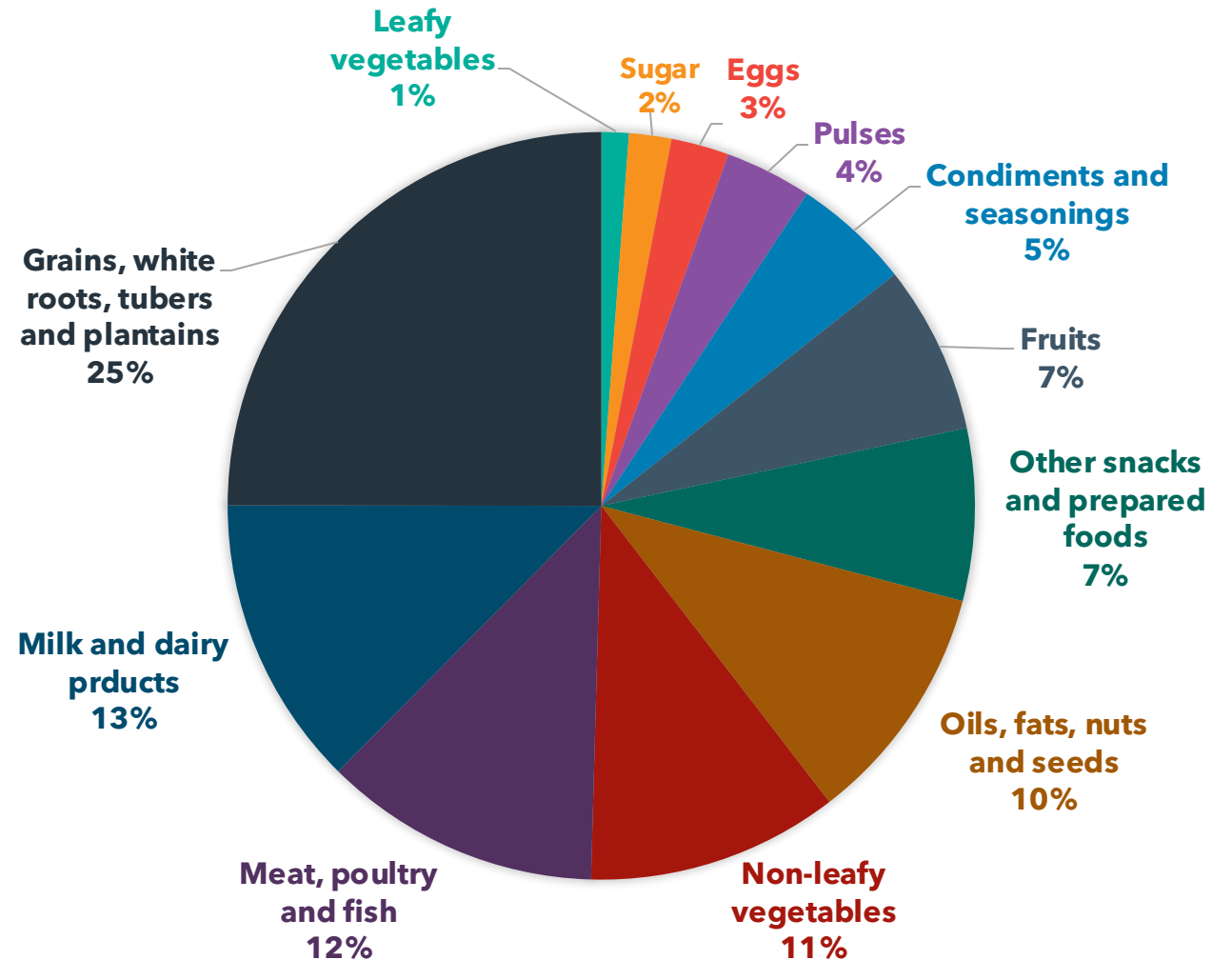


Ethnicity

Sinhala: 82.8%
Tamil: 6.3%
Moor: 10.7%
Other: 0.1%

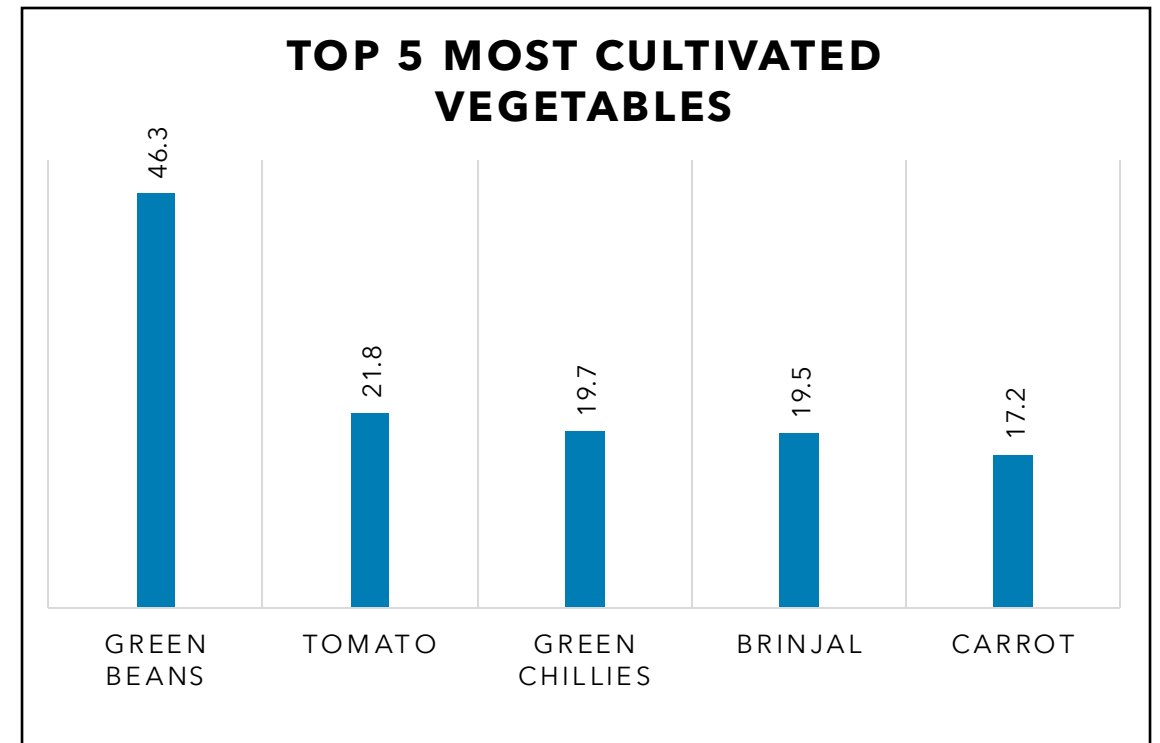
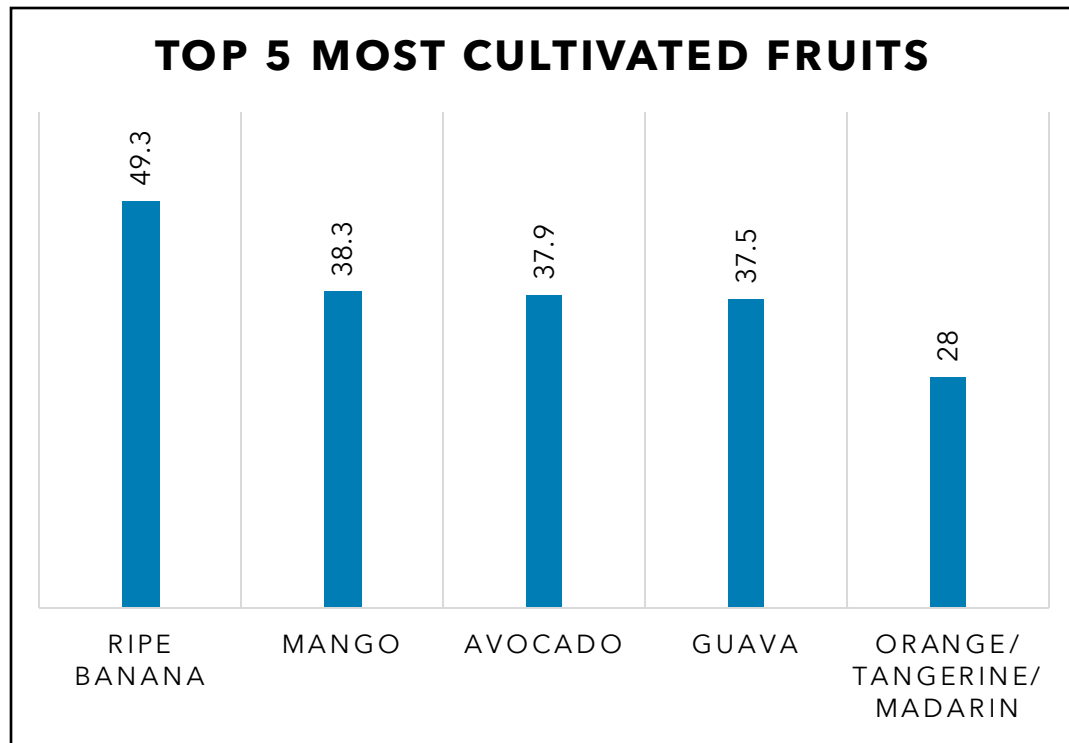
Household food expenditure

- Monthly per capita food expenditure = LKR 14,160
- Food budget share of total household expenditure = 60.3%
- Compared to rural residents, urban residents spend more on:
 - Meat, poultry and fish
 - Milk and dairy products
 - Eggs
- Compared to rural residents, urban residents spend less on:
 - Leafy vegetables
 - Fruits
 - Oils, fats, nuts and seeds
 - Grains, white roots, tubers and plantains

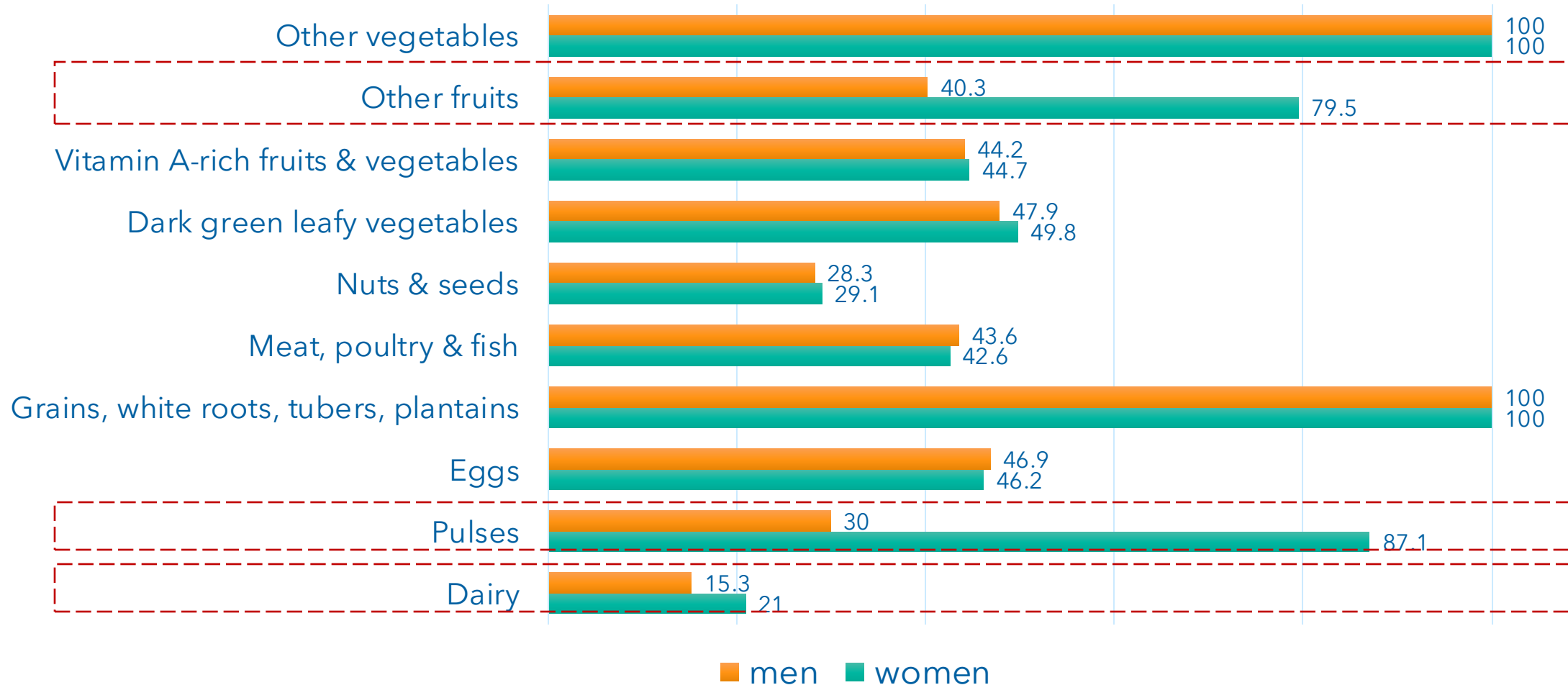


Diversity of F&V cultivated at the household level

- 31.5% of all households surveyed cultivated fruits.
- On average: 3.6 ± 2.6 fruits.
- 36.9% of all households surveyed cultivated vegetables.
- On average: 2.6 ± 1.9 vegetables.



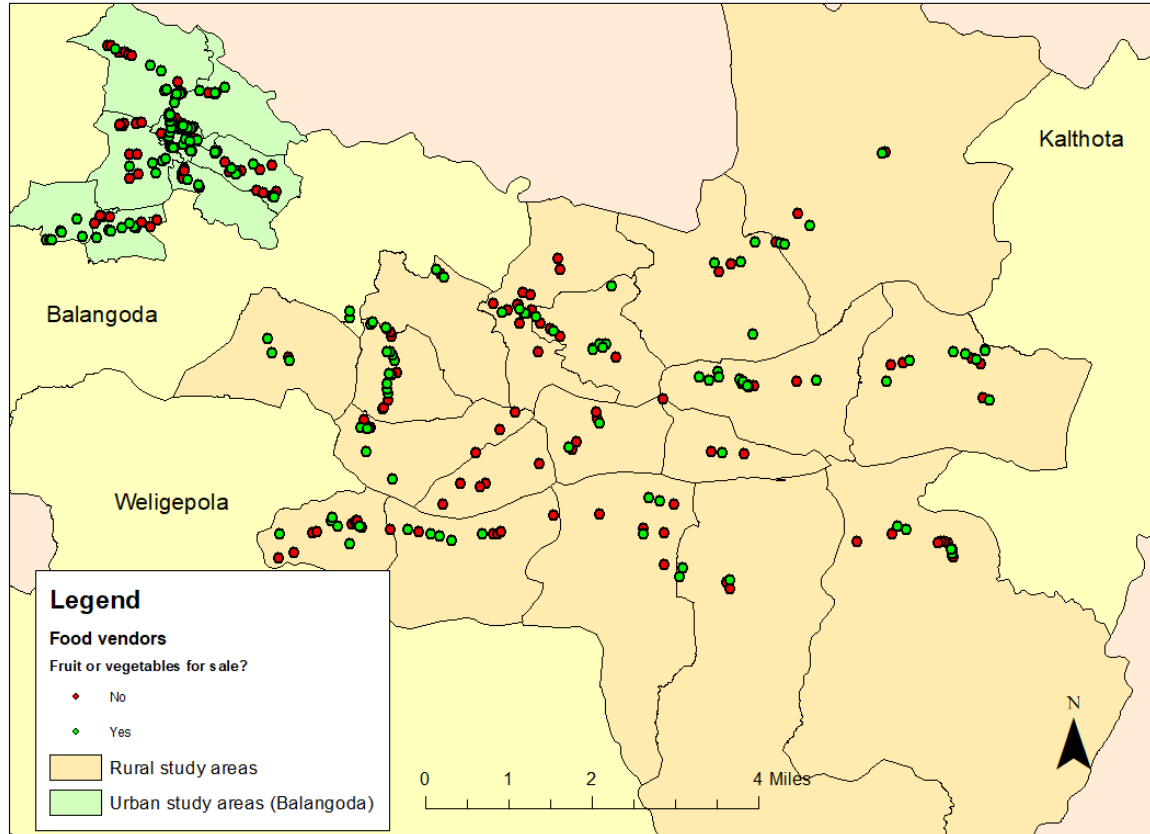
Dietary intake among adult women (n=2363) and men (n=710) 20-49 years of age



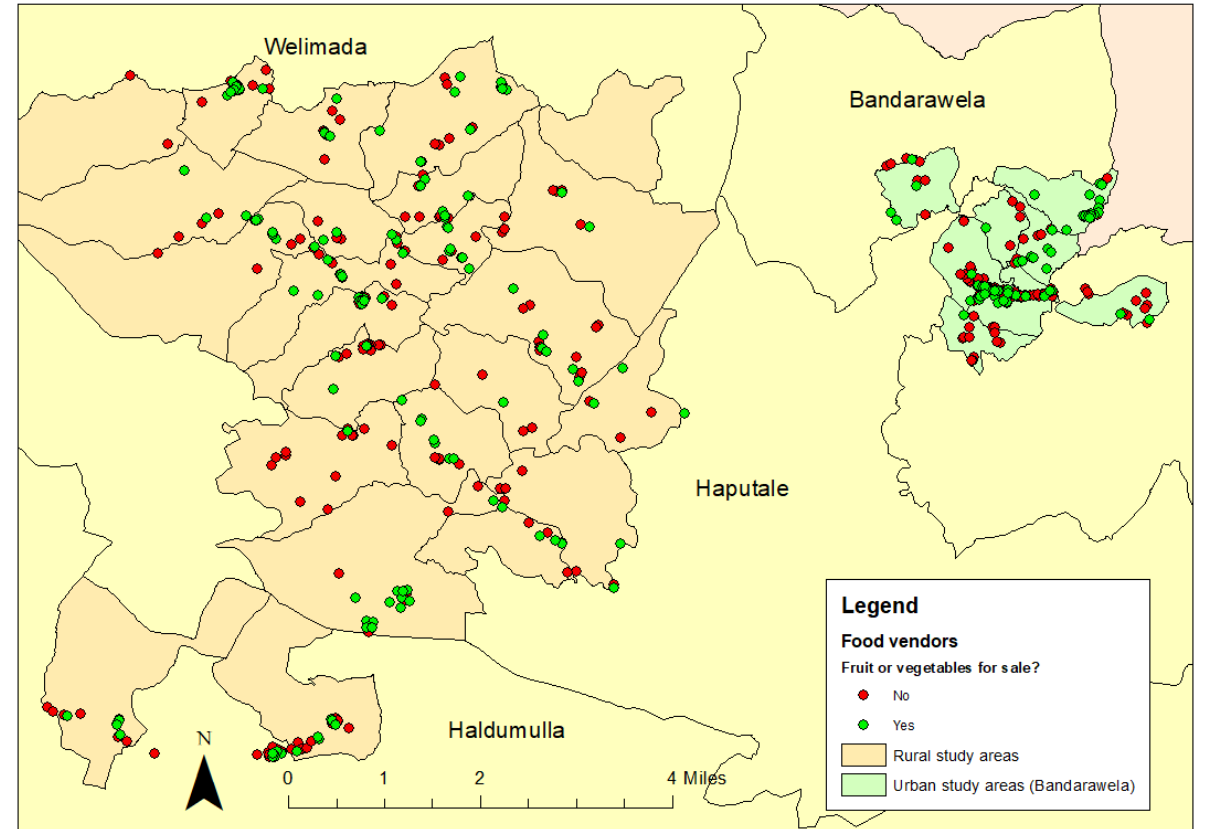
Food environment assessment

Census of food vendors, May 2024

Balangoda Study Area (Ratnapura District)

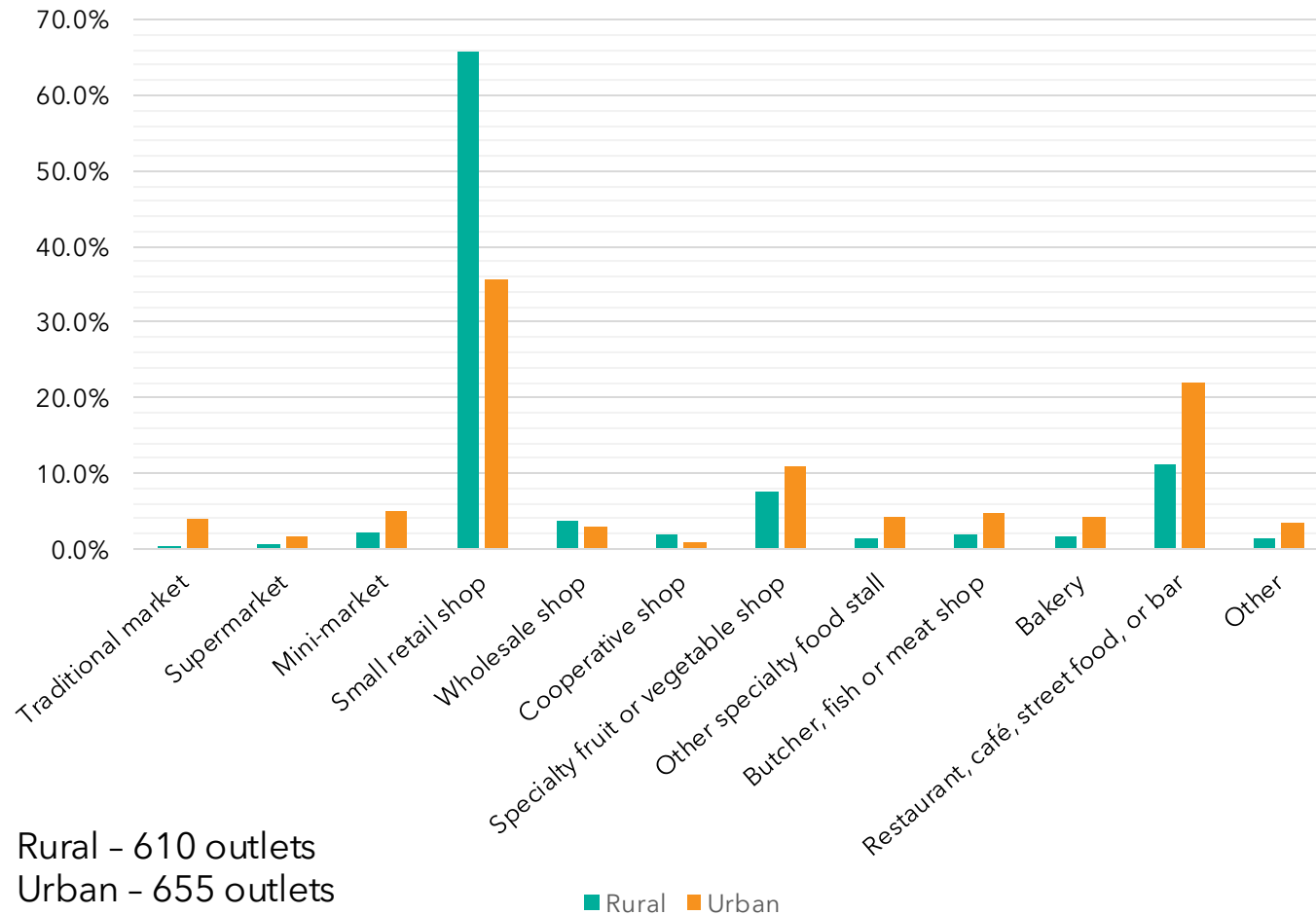


Welimada Study Area (Badulla District)

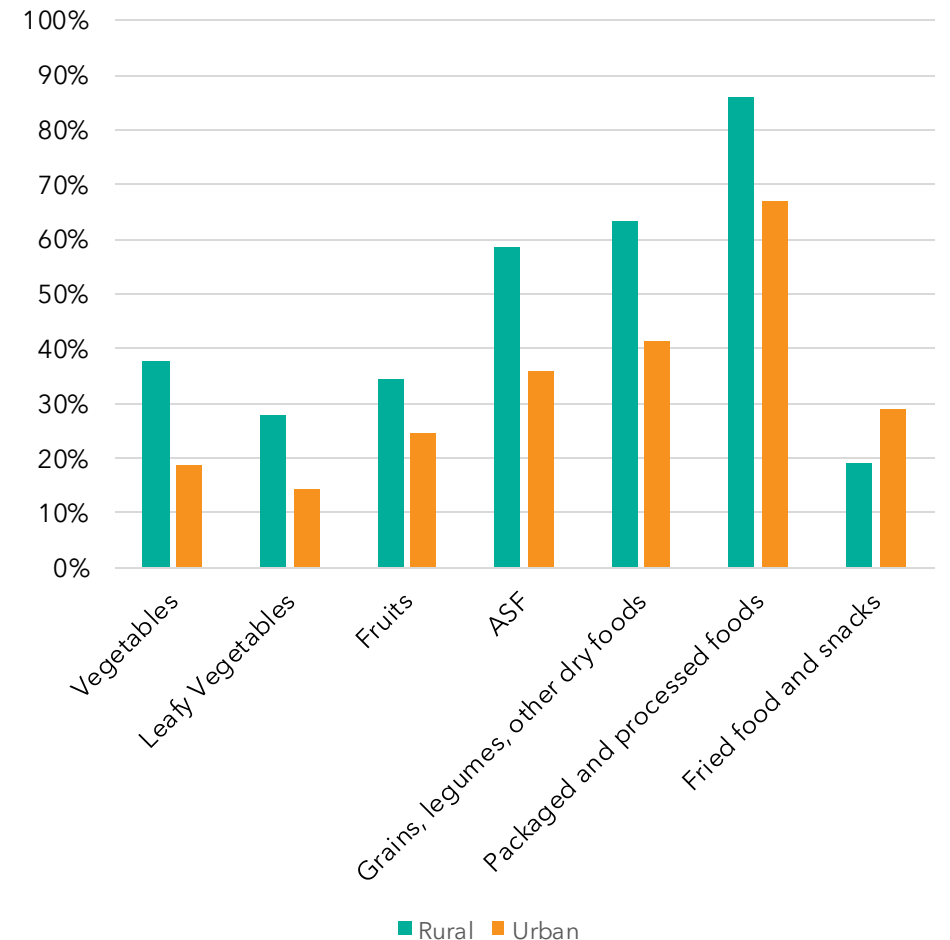


Vendor types and food group availability

Share of outlets by type



% of outlets offering food groups:



Monthly in-depth food environment assessments

Market questionnaire

- Market information
- Count of fruit and vegetable vendors in the market
- Marketing and advertising
- Food list (3 observations per item):
 - Availability
 - Prices
 - Quality (priority F&V only), *select follow-ups*
- Wages (3 observations)

Monthly follow-ups, from baseline to endline (at least for availability, prices, wages, and market vendor census)

Started July 2024

Retail shop questionnaire

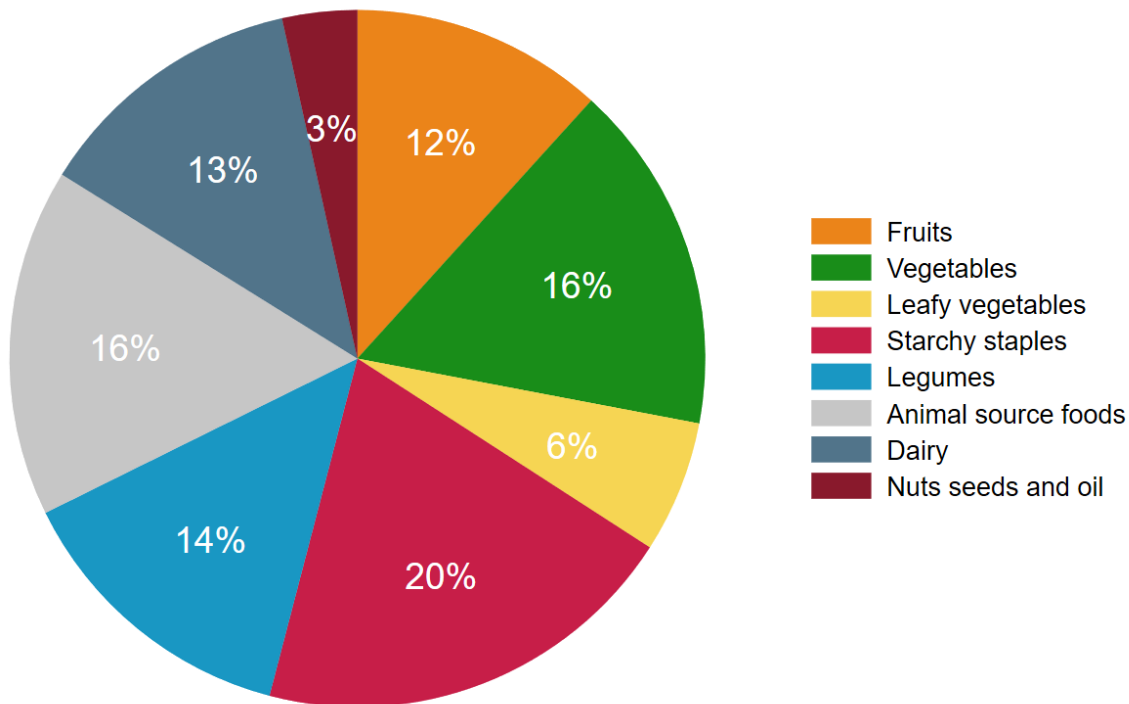
- Shop information
- Marketing and advertising
- Food list:
 - Availability
 - Prices
 - Quality (priority F&V only) – *start 1st follow-up*
- Wages

Monthly follow-ups, from baseline to endline (at least for availability, prices, and wages)

Started July 2024

Cost of a healthy diet, based on the 2021 FBDG

- Rural: LKR 311 per person per day
- Urban: LKR 272 per person per day
- Fruits and vegetables account for 34% of the cost of a healthy diet



	% of CoHD	% of hh food expenditure
Fruits	12	7
Vegetables	22	12
Starchy staples	20	25
Legumes	14	4
ASF	16	15
Dairy	13	13
Nuts oils and seeds	3	10
Discretionary & other	--	14

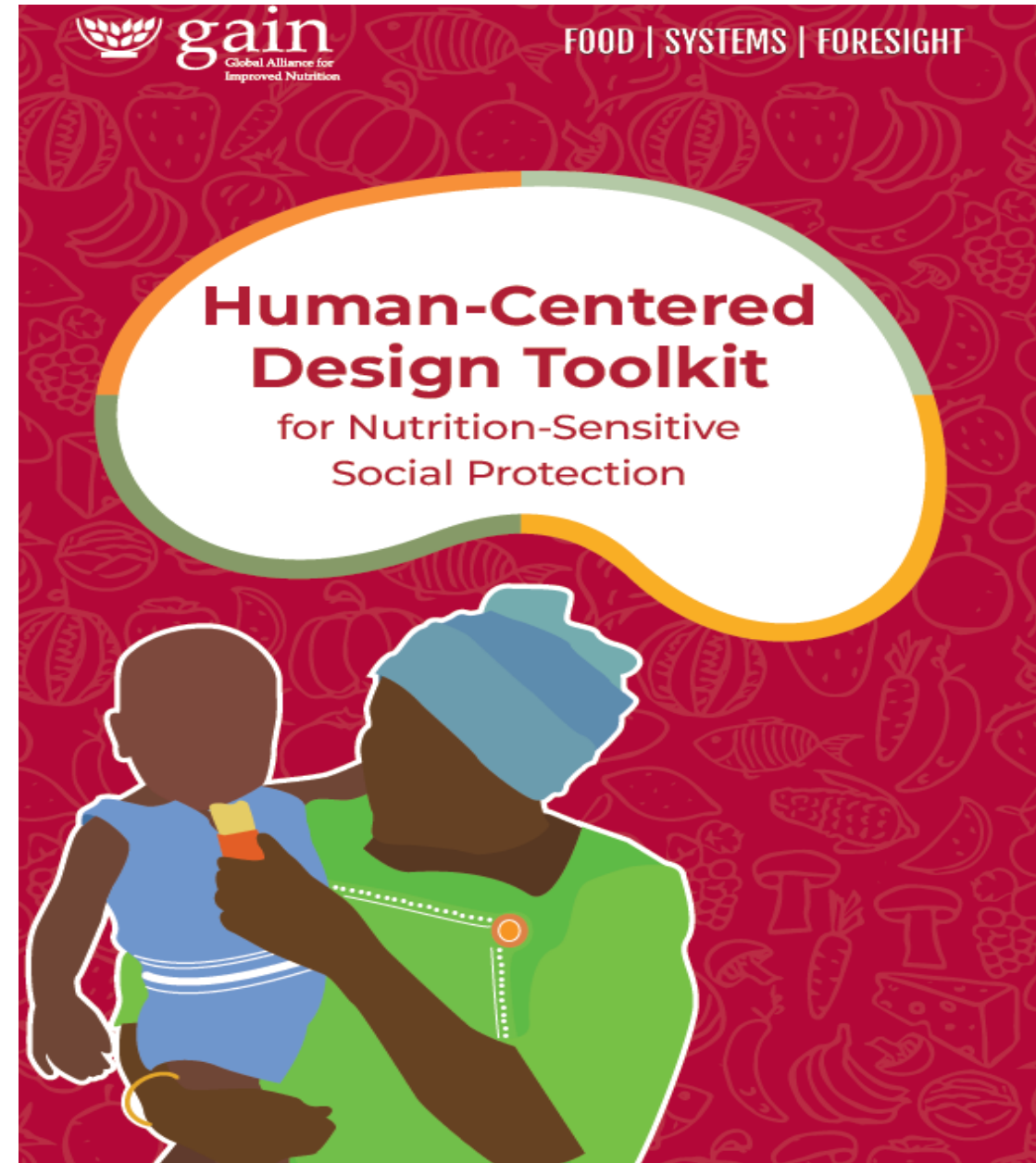
NEXT STEPS

Co-design of consumer demand and food environment interventions

Co-design of interventions using a Human-Centered Approach

Goal of interventions: To increase intake of F&V through increased **consumer demand** for F&V and improved **food environments** where consumers purchase F&V.

- Will be conducted through workshops to be held next week in Balangoda and Haputale in collaboration with GAIN.
- Participants will include:
 - Grassroot organizations
 - Farmers/ non-farmers/ food vendors
 - Extension workers (agriculture, public health)
 - Officers (GN, DS, economic development)



Thank you!

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