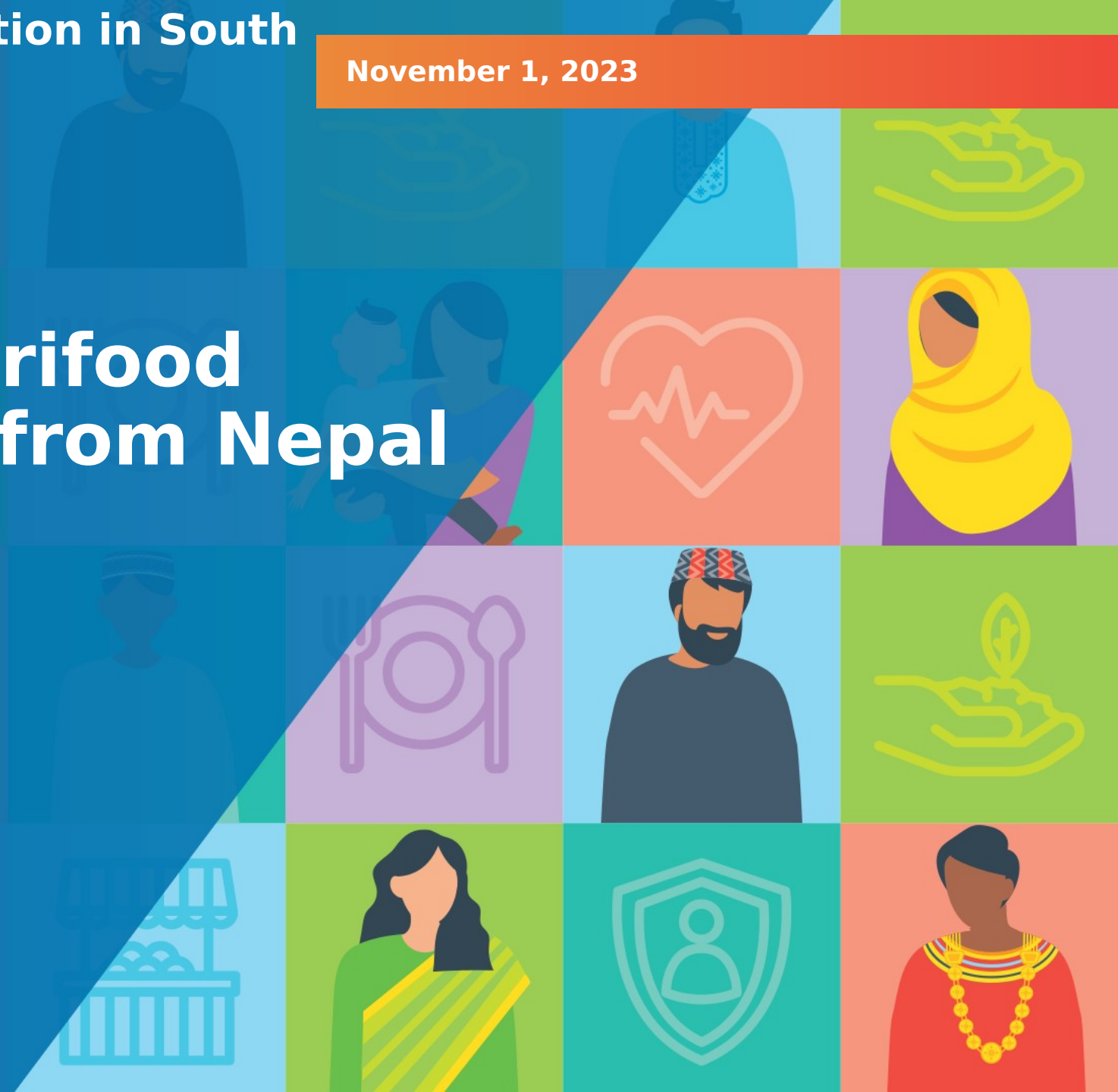


# Assessing local agrifood systems: Insights from Nepal

Samuel Scott and Sumanta Neupane  
Nutrition, Diets and Health unit  
International Food Policy Research  
Institute

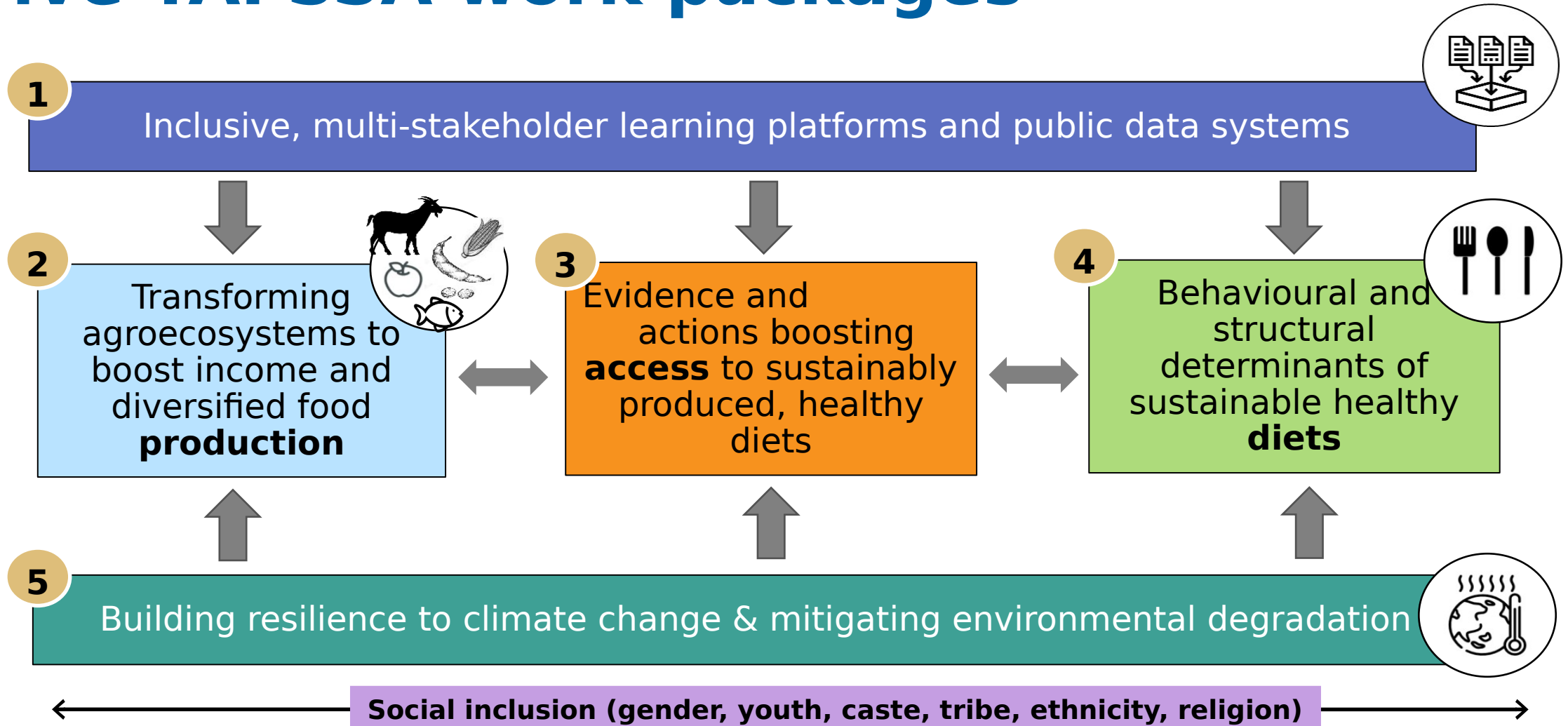


# Transforming Agrifood Systems in South Asia (TAFSSA)

- A CGIAR Regional Integrated Initiative to support actions that improve equitable access to sustainable healthy diets, improve farmers' livelihoods and resilience, and conserve land, air, and water resources in South Asia (Bangladesh, India, Nepal, Pakistan).
- Currently in phase 1 (2022-2024), with 3 phases expected



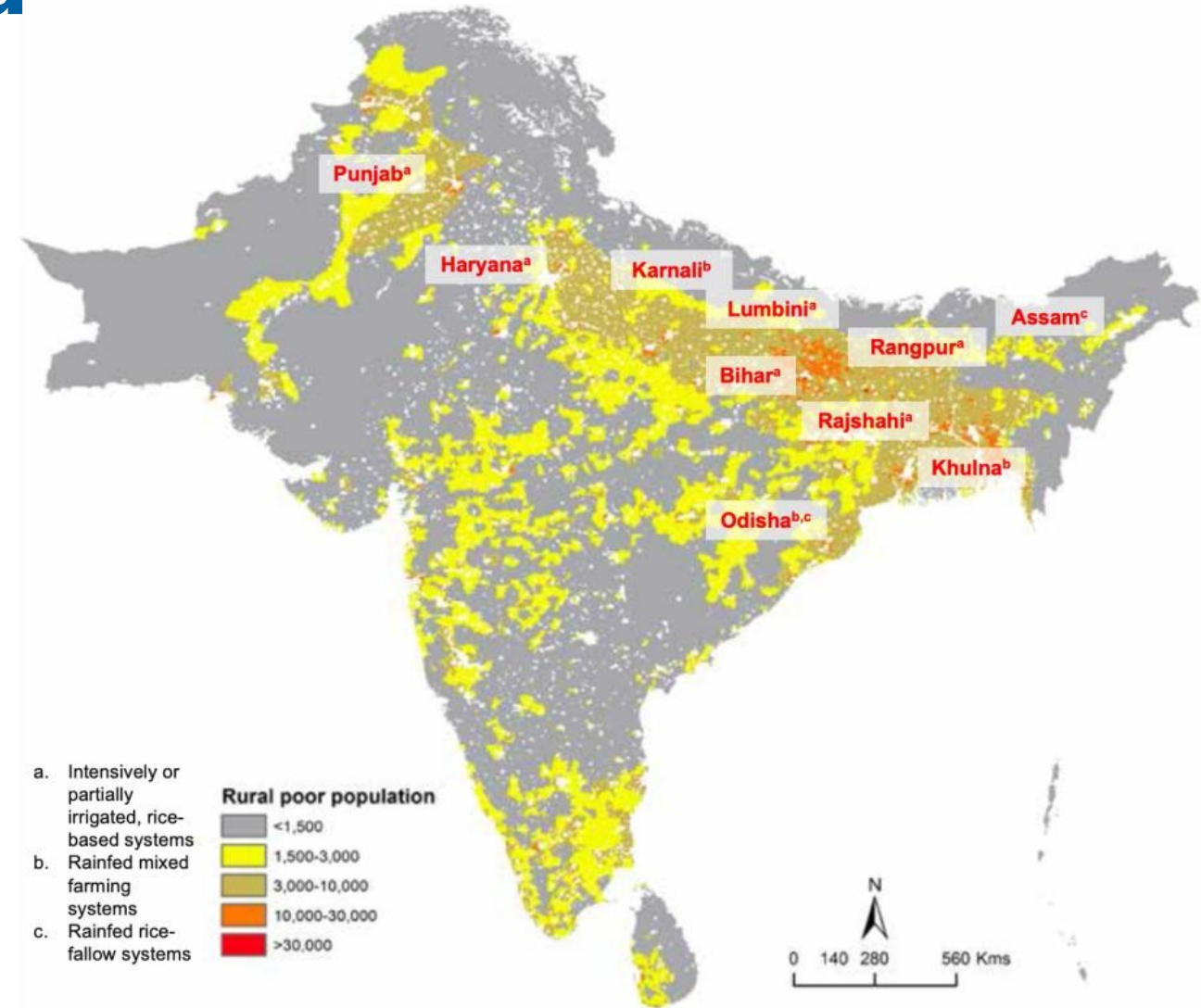
# Five TAFSSA work packages





# TAFSSA's local agrifood systems assessment

- 3 countries, 5 districts in total in 2023
  - 2 in Bangladesh (n=2000 HHs)
  - 2 in Nepal (n=1000 HHs)
  - 1 in India (n=1000 HHs)
- Data from men, women, and adolescents
- Multiple market types surveyed across district
- Representative sample of *all* rural HHs with adolescents



# Design process

Conceptually grounded in multiple frameworks/literatures

- HLPE framework for overall food system
- Gender-adapted HLPE
- Food environment framework
- Drivers of food choice
- Food systems countdown indicators
- Adolescent diets and nutrition

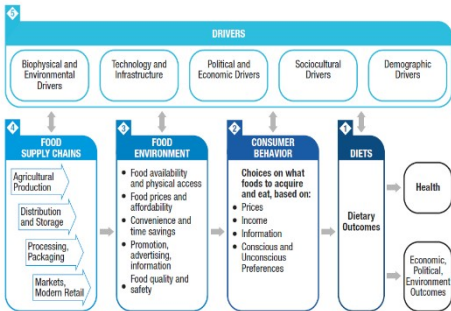


Identifying gaps in secondary data on diets in South Asia

Questionnaire assembled using validated and/or field-tested instruments where available

- New questions designed where unavailable

GDQS, questionnaire refinement and survey harmonization workshop (Nepal, Jan 2023)



Domains for inquiry and choice of respondents developed based on these multiple frameworks and interests

Pre-survey design field visits to multiple locations



Cross-country questionnaire design workshop (Nepal, Sept 2022)

Drivers of food choice analysis workshop (Bangladesh, Mar 2023)



# Tracing foods from plate to farm in Banke, Nepal

Consumption

What is on the plate?

Food sources

Where is food coming from?

Tasks

Who does what food-related tasks?

Shopping behavior

Who buys what, from where?

Food aspirations

How do people perceive healthy and unhealthy foods?

Food perceptions

What food would people like to eat?

Market food environment

What is available in markets?

Food production

What food do households grow?

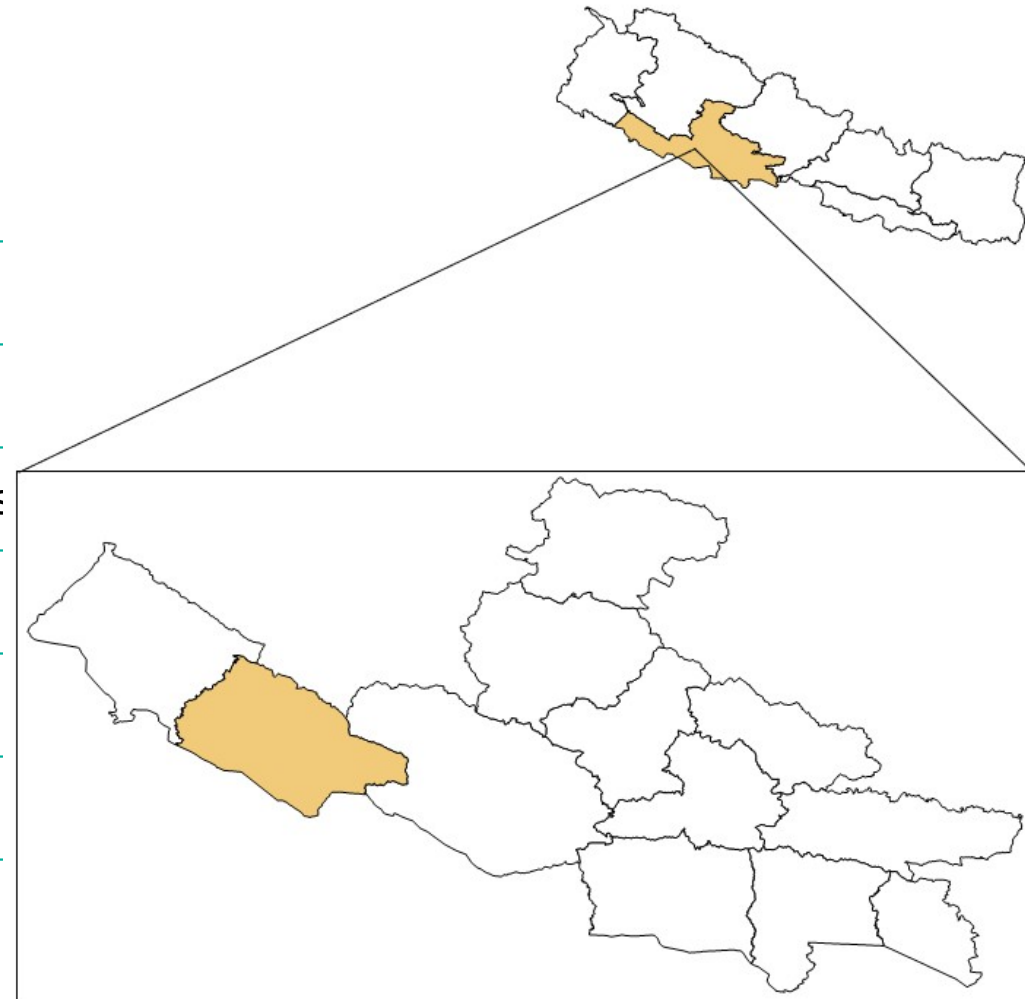
Adolescent farming interest

Do adolescents want to be farmers?

Climate

How do climate shocks affect farming households?

Plate to farm



# Consumption - measurement method

## Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

Adolescent farming interest

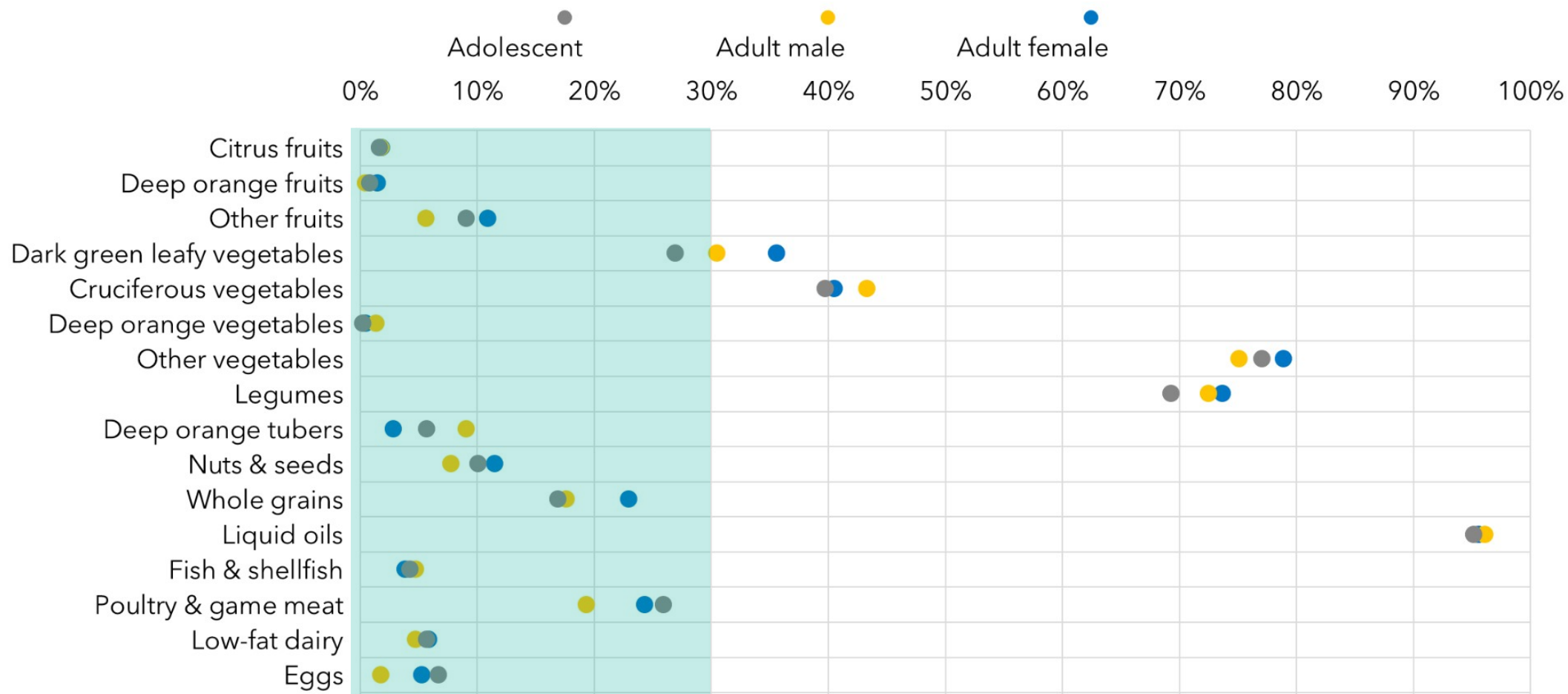
Climate

## Global Diet Quality Score (GDQS)

- A metric and app developed by *Intake - Center for Dietary Assessment* (FHI Solutions)
- 15-20 minutes to administer
- 24 hr recall of food intake, with quantity estimated at food group level
- GDQS scores correlate with nutrient adequacy and noncommunicable disease indicators in adults (2021 *Journal of Nutrition* supplement)
- Includes database of 6000+ foods

# 11 of 16 “healthy” GDQS food groups were consumed by <30% of respondents in last 24 hrs (Feb-Apr 2023)

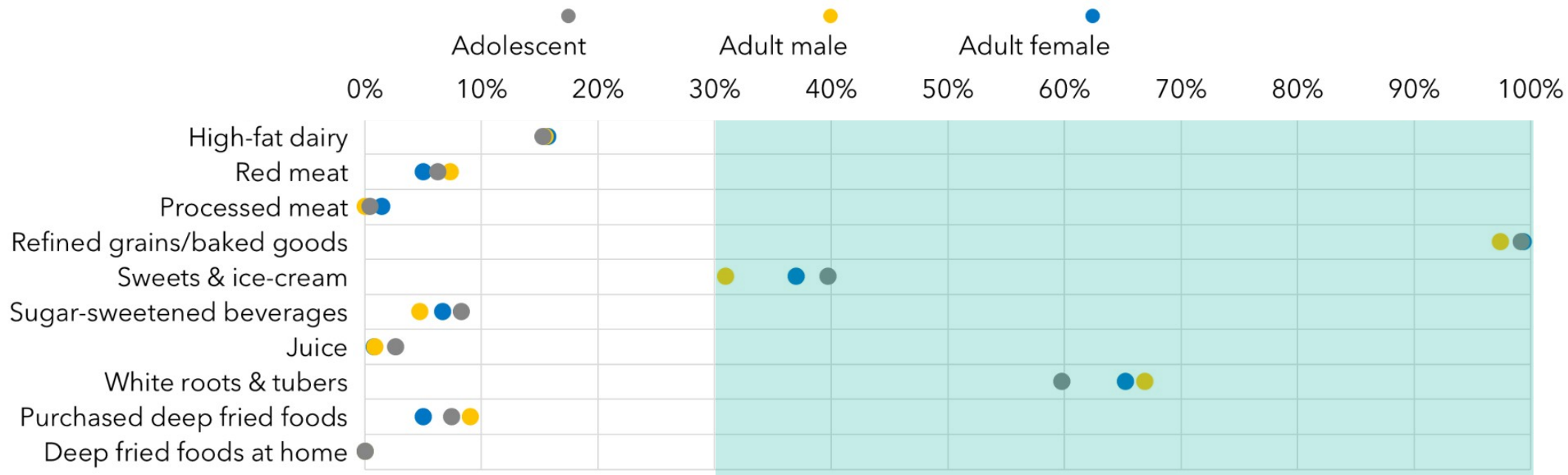
- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate





# 3 of 9 “unhealthy” GDQS food groups were consumed by >30% of respondents in last 24 hrs (Feb-Apr 2023)

- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate



# Food sources - measurement method

Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

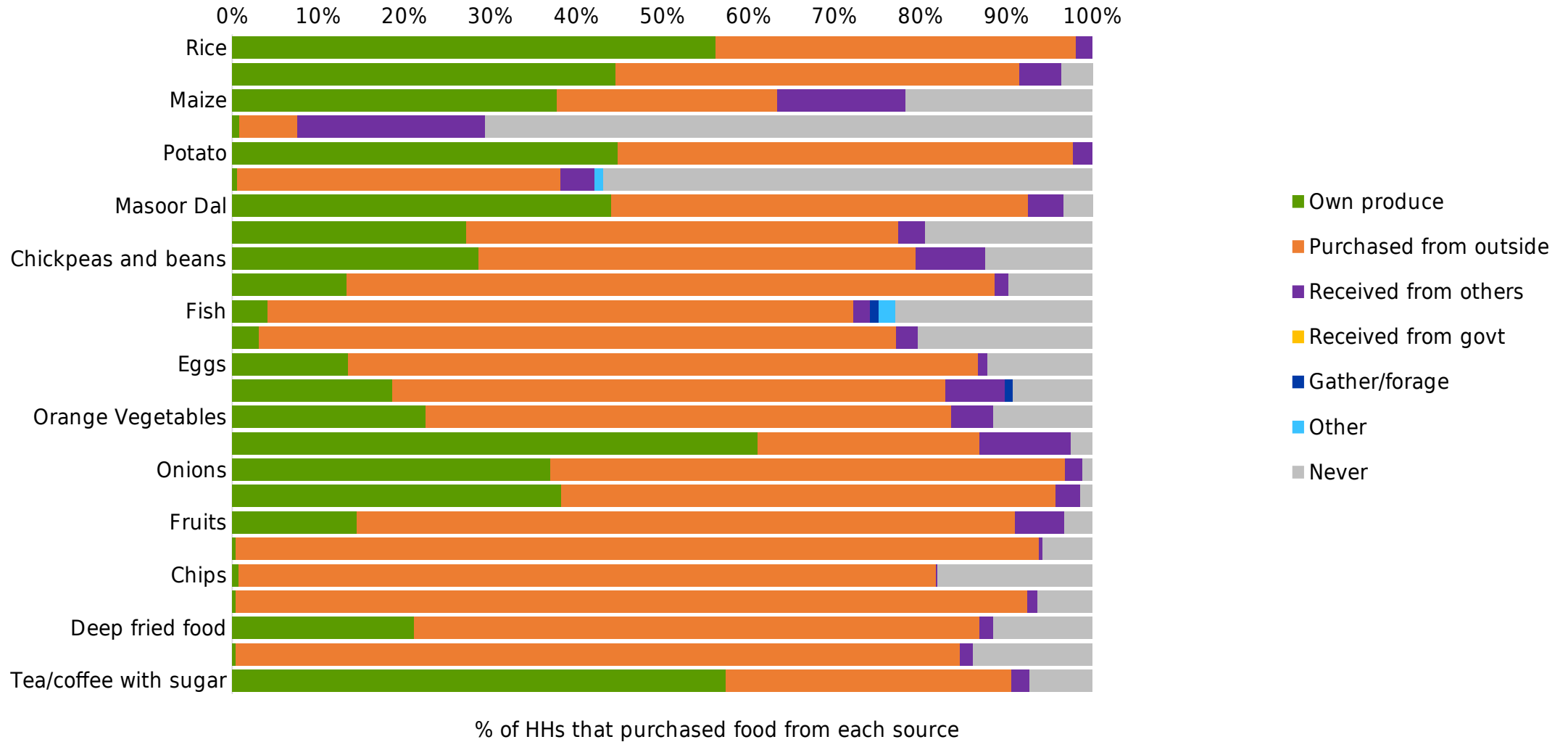
Adolescent farming interest

Climate

- List of 25 commonly consumed “sentinel foods” was used to ask where households get their food
  - Own produce
  - Purchased from outside
  - Received from others
  - Received from government
  - Gathered/foraged

1. Rice
2. Wheat
3. Maize
4. Millets
5. Moong dal
6. Masoor dal
7. Chana dal
8. Chickpeas and beans
9. Potato
10. Poultry (Chicken, ducks, pigeons etc)
11. Fish
12. Other meat (e.g., mutton)
13. Eggs
14. Milk (e.g., cow, buffalo, goat)
15. Orange vegetables (e.g., Pumpkin, carrots)
16. Green leafy veg. (e.g., spinach, mustard, taro, pumpkin leaves, red amaranth leaves)
17. Onions
18. Tomatoes
19. Fruits (e.g., guava, banana, apple, mango)
20. Instant noodles (e.g., maggi, wai wai)
21. Chips (e.g., lays, Kurkure)
22. Biscuits and baked sweets (e.g., cakes and cookies, mithai)
23. Deep fried food (e.g., samosa, pakora)
24. Soda/soft drinks and packaged juices (e.g., coke, sprite, fanta, maaza)
25. Tea/coffee with sugar

# Most foods are purchased from outside



Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

Adolescent farming interest

Climate

# Tasks – measurement method

Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

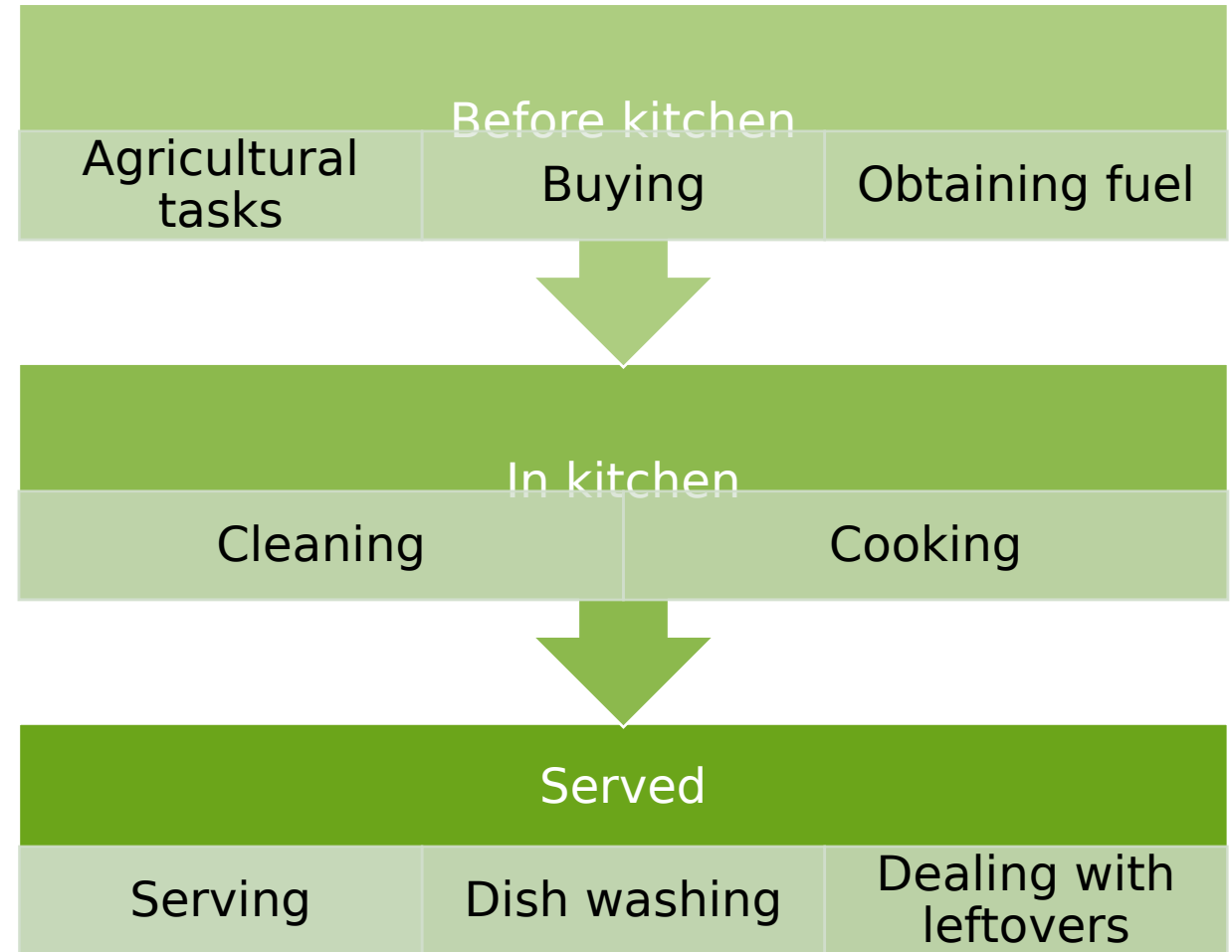
Market food environment

Food production

Adolescent farming interest

Climate

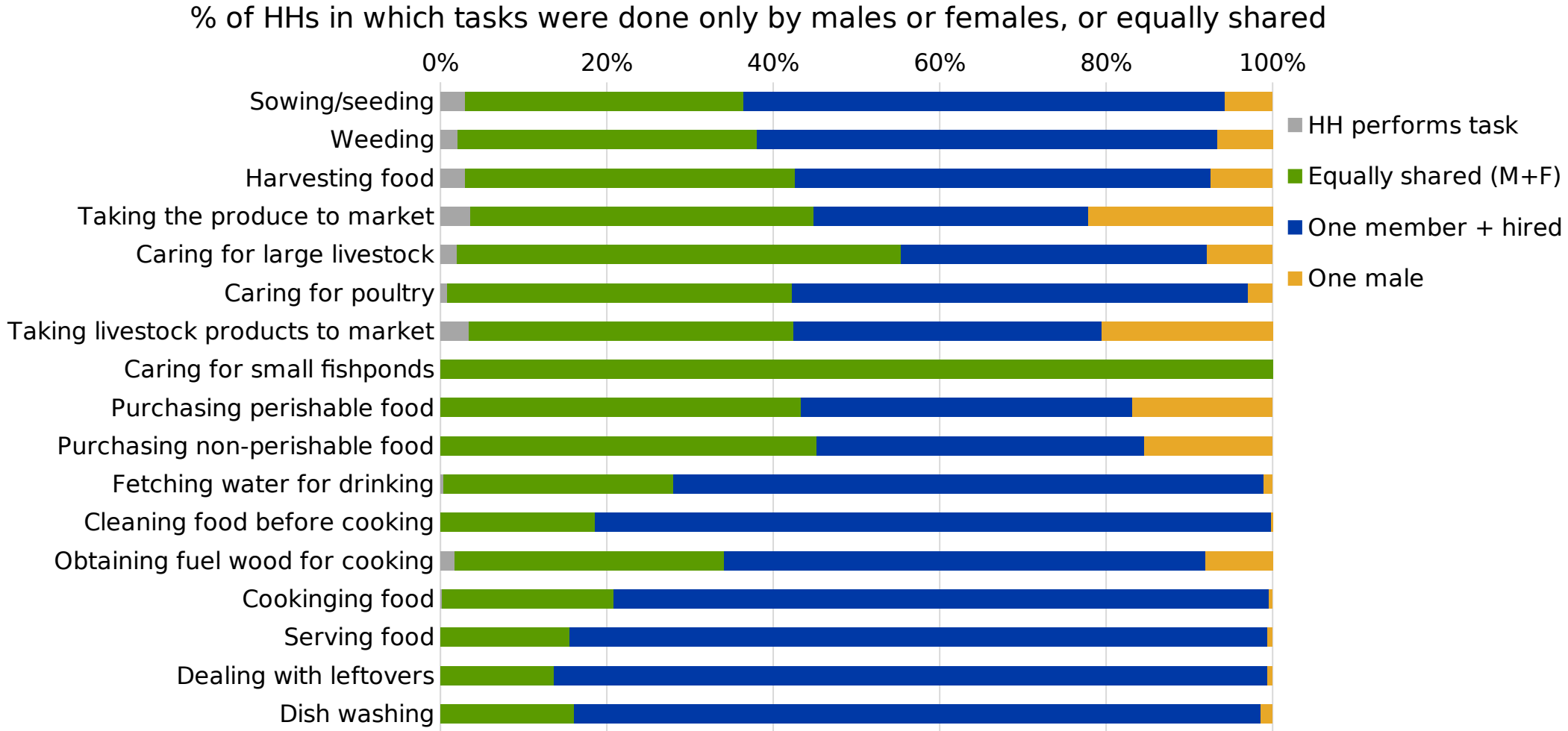
- Asked women the primary and secondary person in HH who does each of 44 different food-related tasks





# Females do tasks alone or share tasks equally with males

- Consumption
- Food sources
- Tasks**
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate



Findings shown are from TAFSSA's local agrifood system assessment in Banke, Nepal conducted in Feb-Apr 2023

# Shopping behavior– measurement method

Consumption

Food sources

Tasks

Shopping  
behavior

Food aspirations

Food perceptions

Market food  
environment

Food production

Adolescent  
farming interest

Climate

- Asked the primary shopper in the HH (either male or female)
  - Where and how often certain sentinel foods (healthy and unhealthy) are usually purchased
  - What factors influence decisions to shop at different types of markets
- Explored gender differences



# Retail outlets were most popular shopping outlet; females accessed roadside markets more than males

- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate



# Food aspirations – measurement method

Consumption

Food sources

Tasks

Shopping  
behavior

Food aspirations

Food perceptions

Market food  
environment

Food production

Adolescent  
farming interest

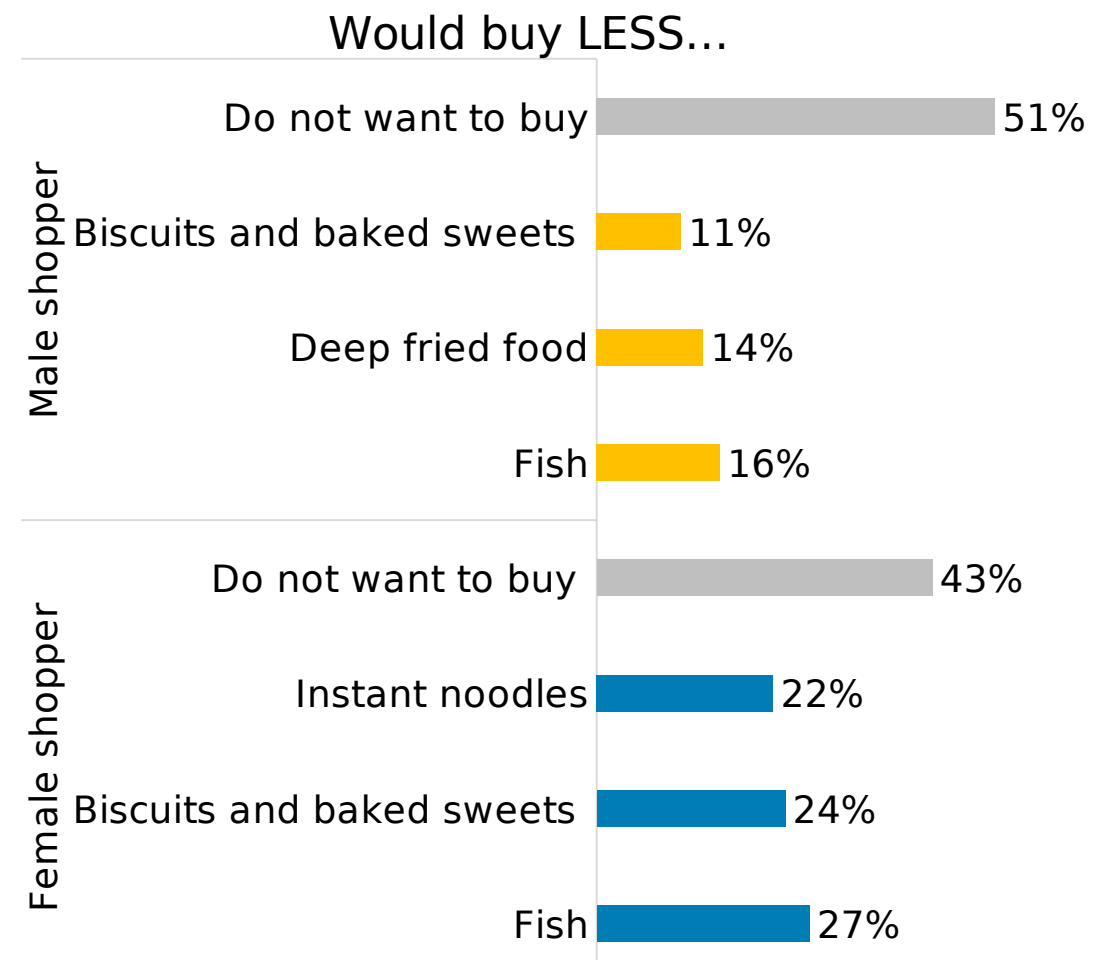
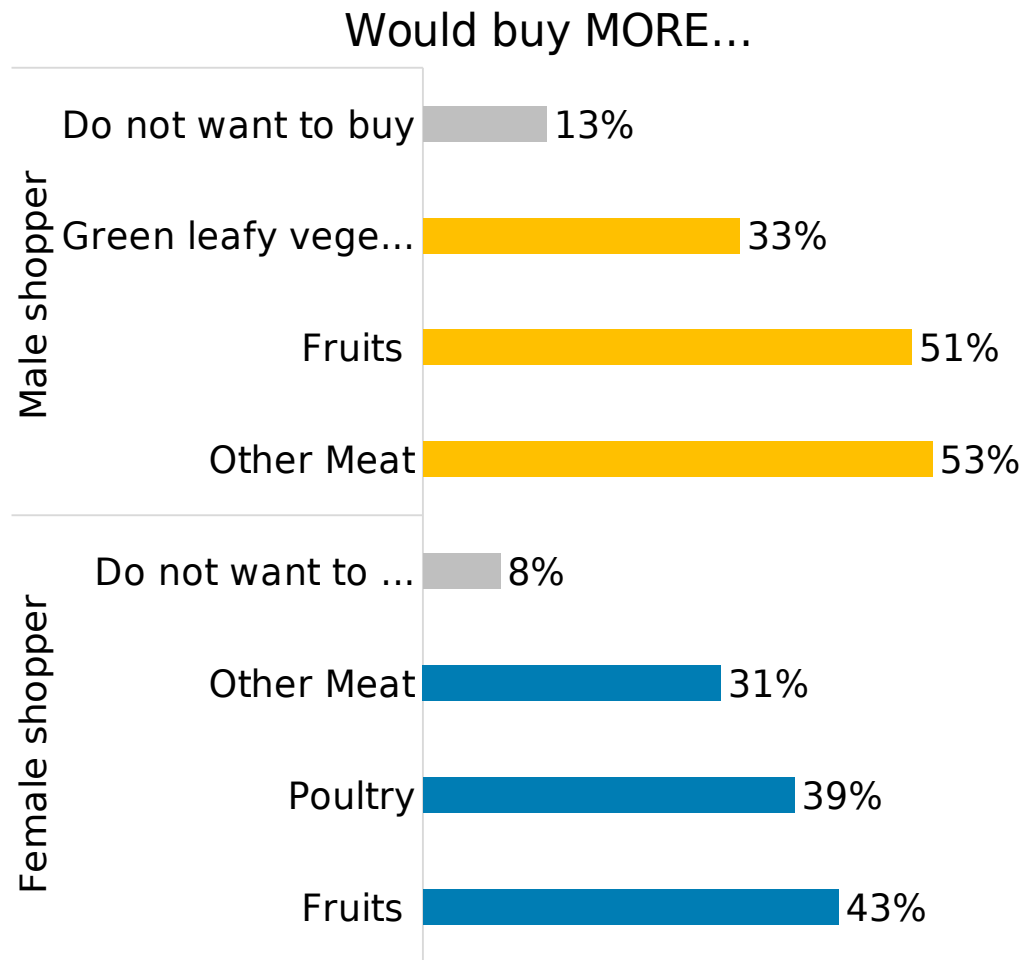
Climate

- Asked the primary shopper in the HH what foods they would buy more of and less of if they had more disposable income



# With more disposable income, shoppers aspired to buy more fruit and meat, less fish and biscuits

- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations**
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate



# Food perceptions – measurement method

Consumption

Food sources

Tasks

Shopping  
behavior

Food aspirations

Food perceptions

Market food  
environment

Food production

Adolescent  
farming interest

Climate

Please respond whether you **agree, disagree or neither agree/nor disagree** to these statements\*

*Food choice construct*

I know of at least one vendors/shop who sells **green leafy vegetables (GLV)**

Accessibility

**GLV** are safe to eat

Safety

It is easy to acquire **GLV** close to where I spend most of my time

Accessibility

Given my income, **GLV** are not too expensive

Affordability

**GLV** are fast and easy to prepare, in general

Convenience

I like the taste of **GLV**

Desirability

Eating **GLV** fills my stomach

Preferences

**GLV** are nutritious

Knowledge

My family enjoys eating **GLV**

Beliefs

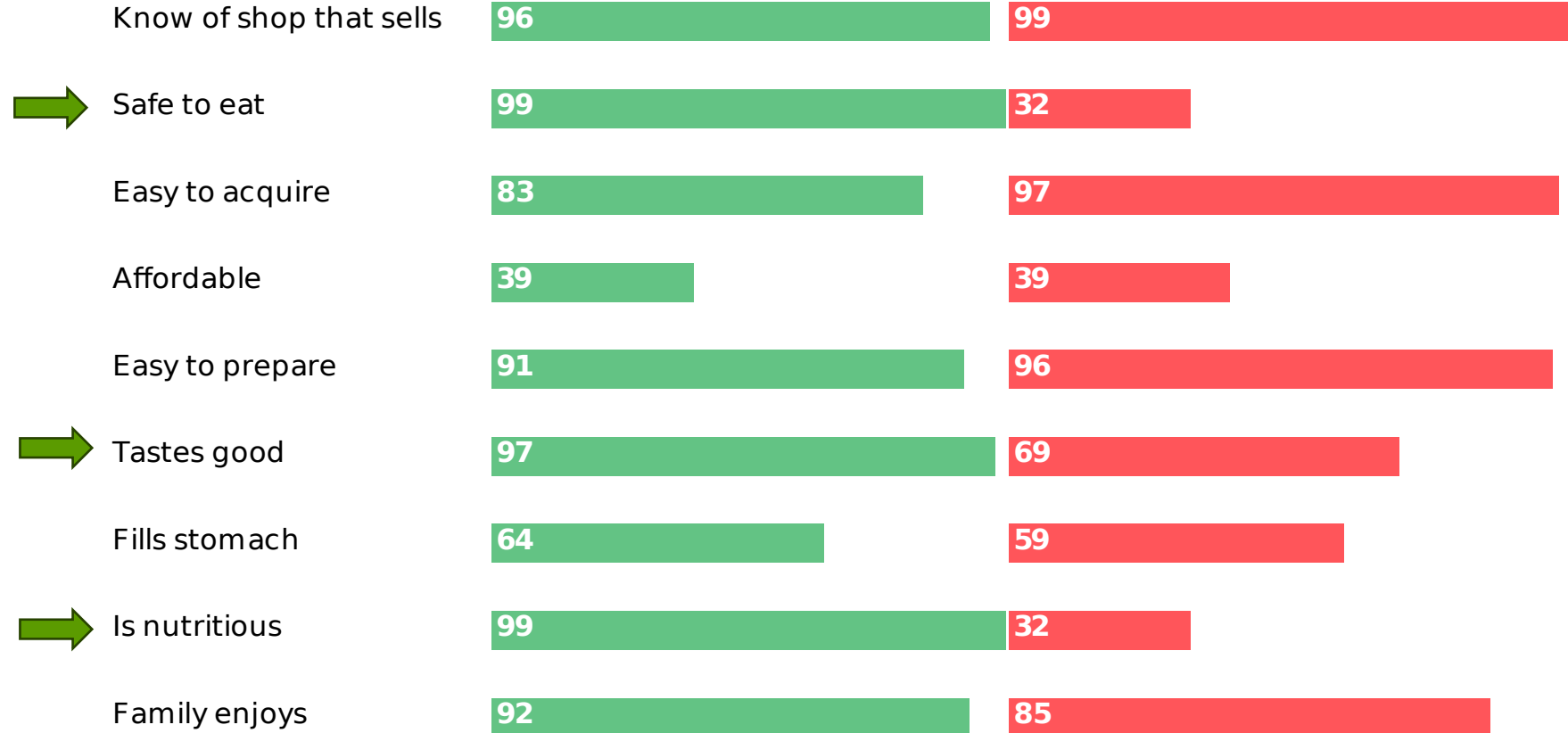
**\*Questions were asked for 7 food items (dal, eggs, green leafy vegetables, banana, biscuits, fried foods, instant noodles)**

# Adult women's perceptions of healthy and unhealthy foods differ



Green leafy vegetables

Instant Noodles



Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

Adolescent farming interest

Climate

# Market food environment– measurement method

Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

Adolescent farming interest

Climate

- Asked shopkeepers if they sell 25 “sentinel foods” in their shop

1. Rice
2. Wheat
3. Maize
4. Millets
5. Moong dal
6. Masoor dal
7. Chana dal
8. Chickpeas and beans
9. Potato
10. Poultry (Chicken, ducks, pigeons etc)
11. Fish
12. Other meat (e.g., mutton)
13. Eggs
14. Milk (e.g., cow, buffalo, goat)
15. Orange vegetables (e.g., Pumpkin, carrots)
16. Green leafy veg. (e.g., spinach, mustard, taro, pumpkin leaves, red amaranth leaves)
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19. Fruits (e.g., guava, banana, apple, mango)
20. Instant noodles (e.g., maggi, wai wai)
21. Chips (e.g., lays, Kurkure)
22. Biscuits and baked sweets (e.g., cakes and cookies, mithai)
23. Deep fried food (e.g., samosa, pakora)
24. Soda/soft drinks and packaged juices (e.g., coke, sprite, fanta, maaza)
25. Tea/coffee with sugar



# Unhealthy foods were more available than healthy foods in retail shops

Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

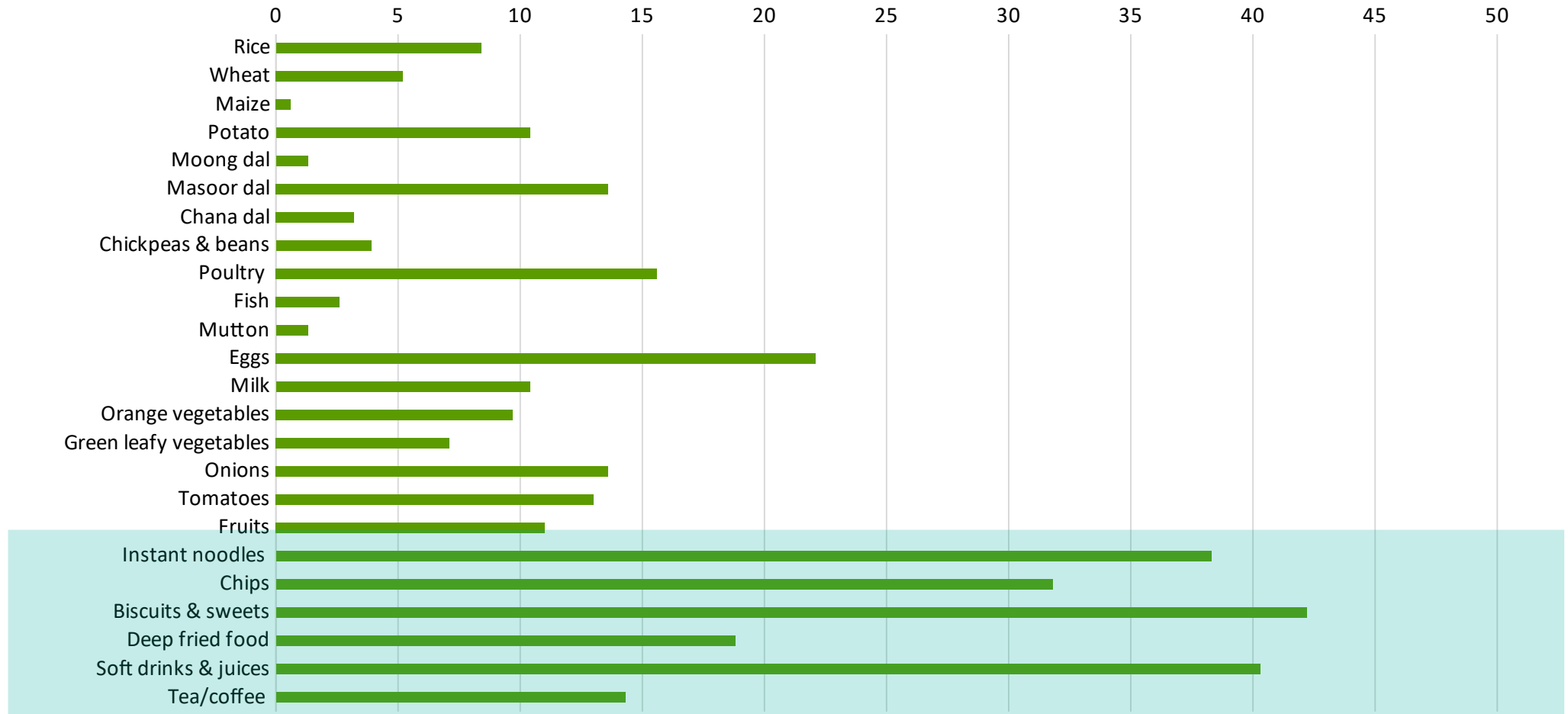
**Market food environment**

Food production

Adolescent farming interest

Climate

% of retail shops where sentinel foods were available



# Food production – measurement method

Consumption

Food sources

Tasks

Shopping behavior

Food aspirations

Food perceptions

Market food environment

Food production

Adolescent farming interest

Climate

- Asked households whether they grow different sentinel foods, by season

1. Rice
2. Wheat
3. Maize
4. Millets
5. Moong dal
6. Masoor dal
7. Chana dal
8. Chickpeas and beans
9. Potato
10. Poultry (Chicken, ducks, pigeons etc)
11. Fish
12. Other meat (e.g., mutton)
13. Eggs
14. Milk (e.g., cow, buffalo, goat)
15. Orange vegetables (e.g., Pumpkin, carrots)
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23. Deep fried food (e.g., samosa, pakora)
24. Soda/soft drinks and packaged juices (e.g., coke, sprite, fanta, maaza)
25. Tea/coffee with sugar

# In the last year, few households produced most sentinel foods

- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production**
- Adolescent farming interest
- Climate



# Adolescent farming interest – measurement method

Consumption

Food sources

Tasks

Shopping  
behavior

Food aspirations

Food perceptions

Market food  
environment

Food production

Adolescent  
farming interest

Climate

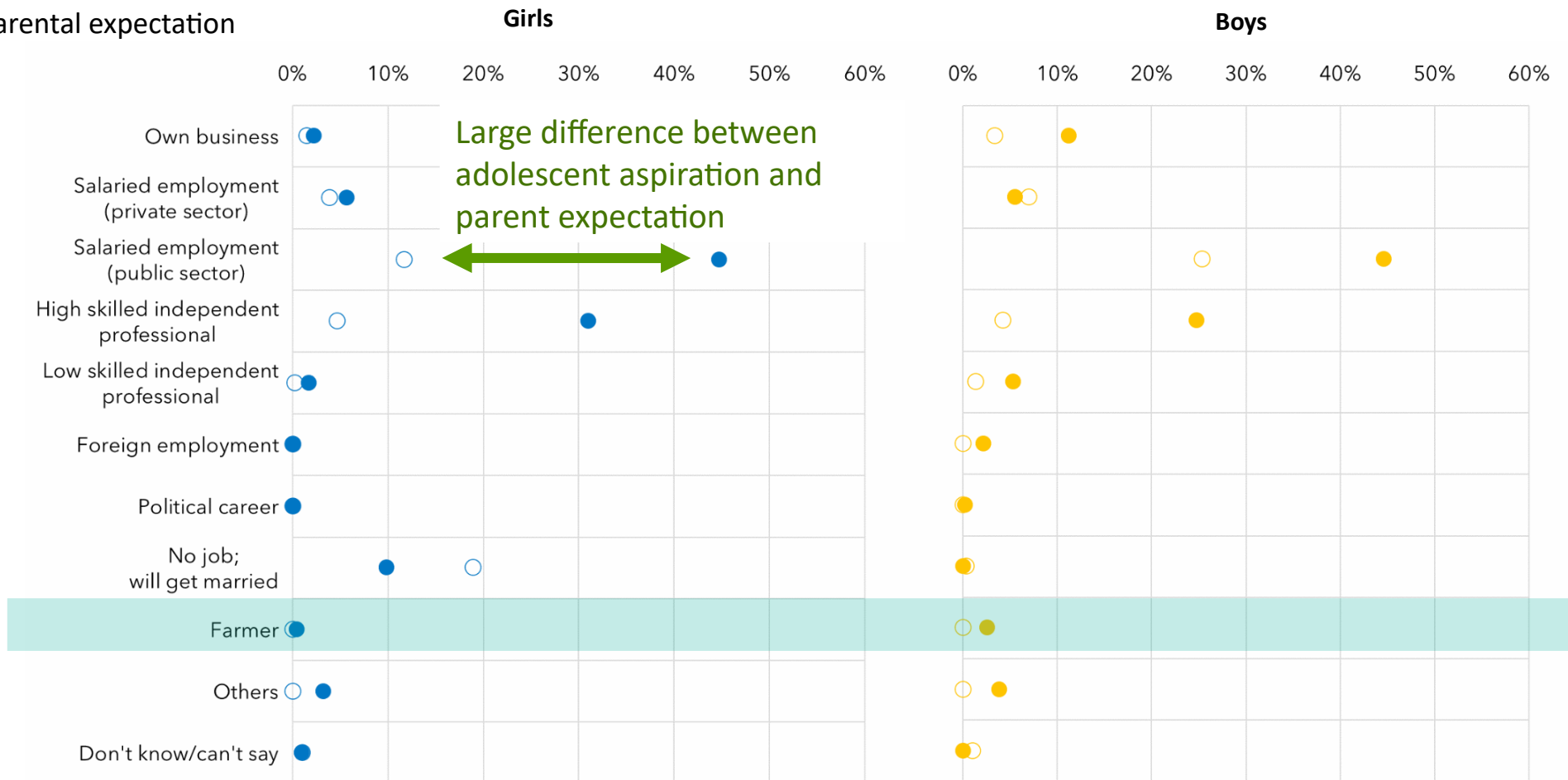
- Asked male and female adolescents (10-19 years old) what they would like to do in the future
- Asked their parents what they expect their adolescent child to do in the future





# Very few adolescents aspire to be farmers in the future

● Adolescent aspiration  
○ Parental expectation



- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate

# Climate – measurement method

Consumption

Food sources

Tasks

Shopping  
behavior

Food aspirations

Food perceptions

Market food  
environment

Food production

Adolescent  
farming interest

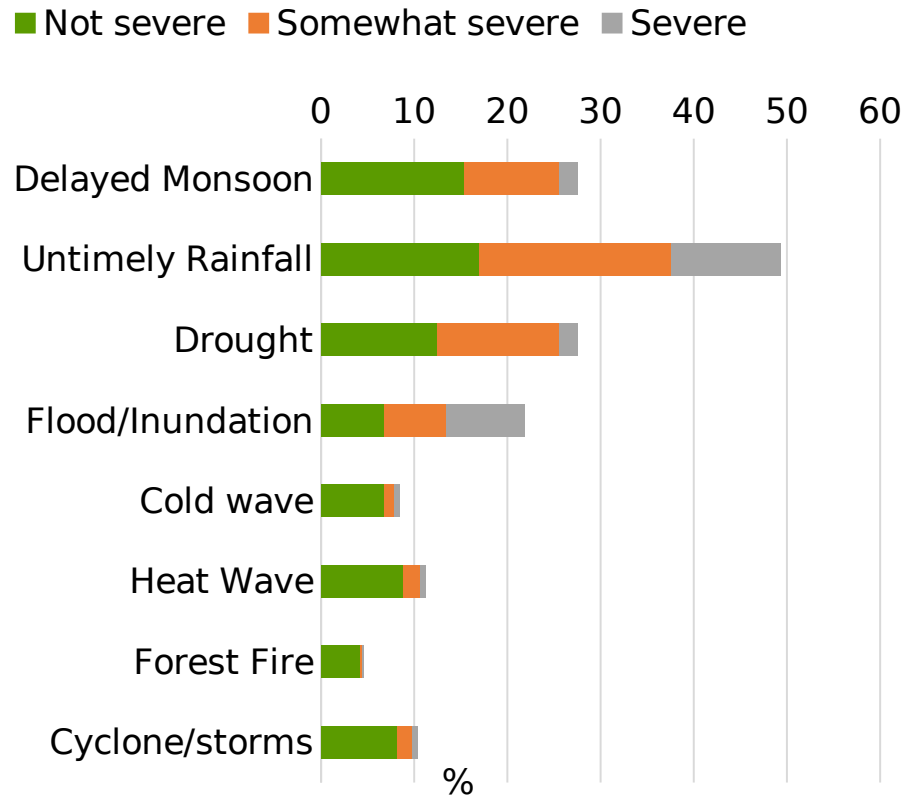
Climate

- Asked households which climate shocks they experienced
- The perceived severity of the shock
- What impacts shocks had on agriculture and livelihoods

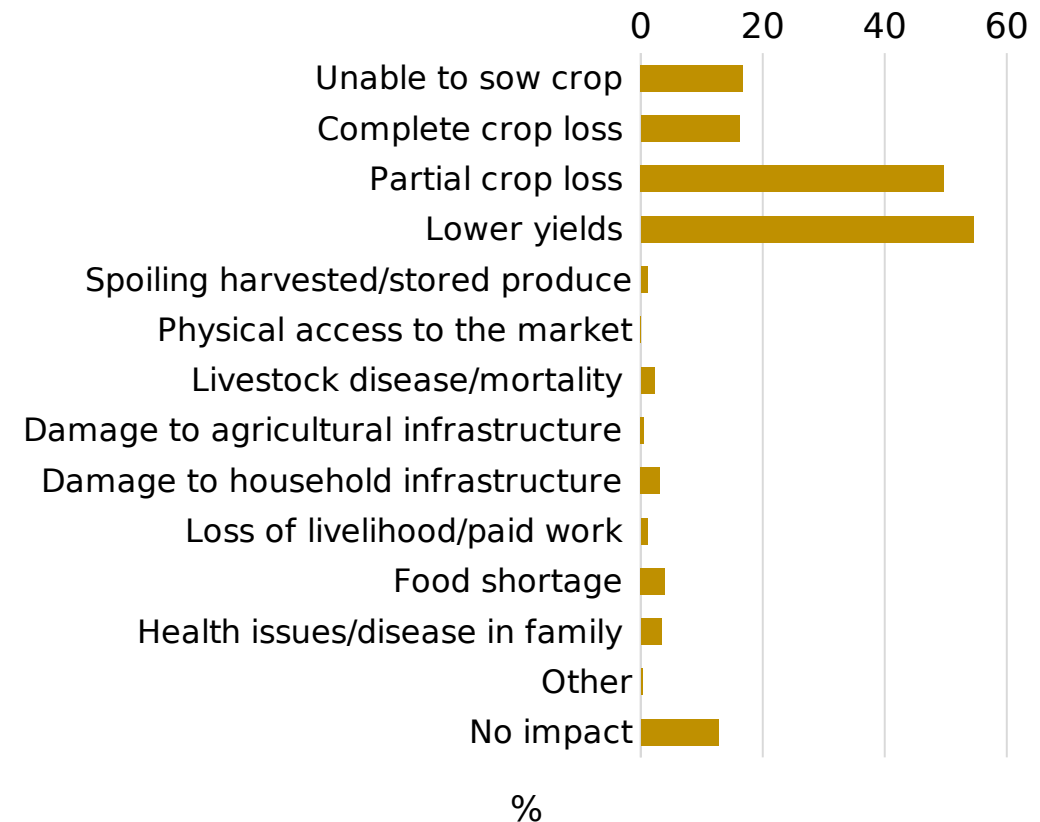
# Untimely rainfall was a major shock affecting agriculture

- Consumption
- Food sources
- Tasks
- Shopping behavior
- Food aspirations
- Food perceptions
- Market food environment
- Food production
- Adolescent farming interest
- Climate

Perceived severity of climate shocks in past 2 years



How climate shocks (all types) affected HHs



# Summary of plate to farm findings in Banke, Nepal

Consumption	What is on the plate? <b>Rice, potatoes, dal, onions, sweets/ice cream</b>
Food sources	Where is food coming from? <b>Mostly purchased from outside</b>
Tasks	Who does what food-related tasks? <b>Women - alone or with men</b>
Shopping behavior	Who buys what, from where? <b>Men and women buy food from retail shops</b>
Food aspirations	How do people perceive healthy and unhealthy foods? <b>Healthy foods are nutritious but unaffordable</b>
Food perceptions	What food would people like to eat? <b>Fruits and meat other than fish</b>
Market food environment	What is available in markets? <b>Lots of unhealthy foods</b>
Food production	What food do households grow? <b>Mostly grains</b>
Adolescent farming interest	Do adolescents want to be farmers? <b>No</b>
Climate	How do climate shocks affect farming households? <b>Water shocks reduce crop yields</b>

# Looking ahead for local agrifoods systems assessments

- Coming soon: set of topical briefs providing snapshot of each district's food system
- Assess local agrifood systems over time, in different seasons
- Replicate local agrifood systems assessments in other countries (e.g. Pakistan) and districts
- Assessing relationships between food system components
- Continue engaging with stakeholders in the region to interpret rich agrifood systems data and inform policy



# Acknowledgements

- Core CGIAR TAFSSA local agrifood systems assessment team members: IFPRI, CYMMIT, IRRI, IWMI
- Academic partners from South Asia: BRAC (Bangladesh), University of Dhaka (Bangladesh), icddr,b (Bangladesh), National Institute of Nutrition (India),
- Global academic partners: University of South Carolina
- Survey partners: DATA (Bangladesh), Kabil (India), IIDS (Nepal)
- Many more!



# Thank you



Photo from TAFSSA drivers of food choice workshop in Dhaka, Bangladesh, March 2023