



# Numbers for Nourishment: Diet, Consumption, and Access Insights

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- I have no conflicts of interest to declare

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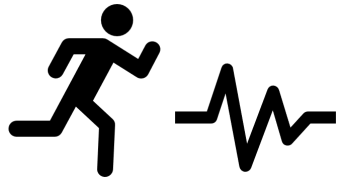
## Today's talk

- Primer on measuring “nutrition”
- Data on food and nutrition in India [& South Asia]
- Use cases on insights from available data
  - Stunting reductions in India
  - Program coverage data in India
  - Dietary data in South Asia and India
  - A local food systems assessment in South Asia
- Summary and reflections

# Why care about malnutrition? Because the consequences of malnutrition are far-reaching



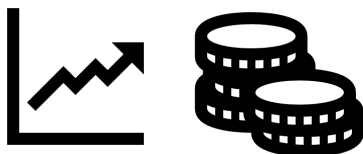
Major contributor to child survival



By far the biggest driver of the burden of disease  
Global epidemic of non-communicable disease (NCDs)



Cognitive impairment  
Intergenerational impacts of poor nutrition



Lost income-earning potential  
Annual GDP losses



## **2 minutes: Come in on the chat box**

- What do you think of when you hear the words “malnutrition”



# How is malnutrition/nutrition measured?

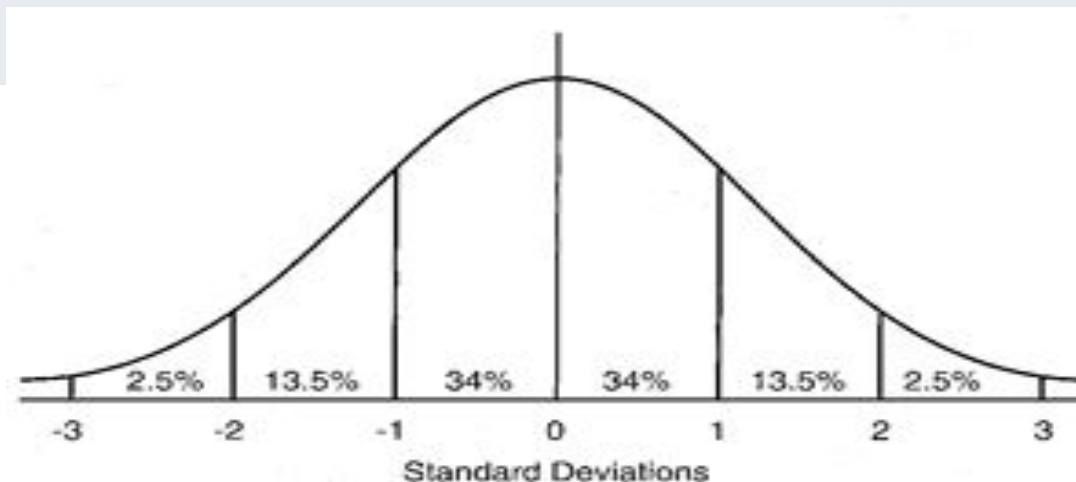
- Dietary intake [food]
- Nutrient intake [from food]
- Nutrient status [in the blood/body]
- Functional outcomes related to nutrition [physical tests, cognitive tests]
- Physical outcomes related to nutrition [body size]



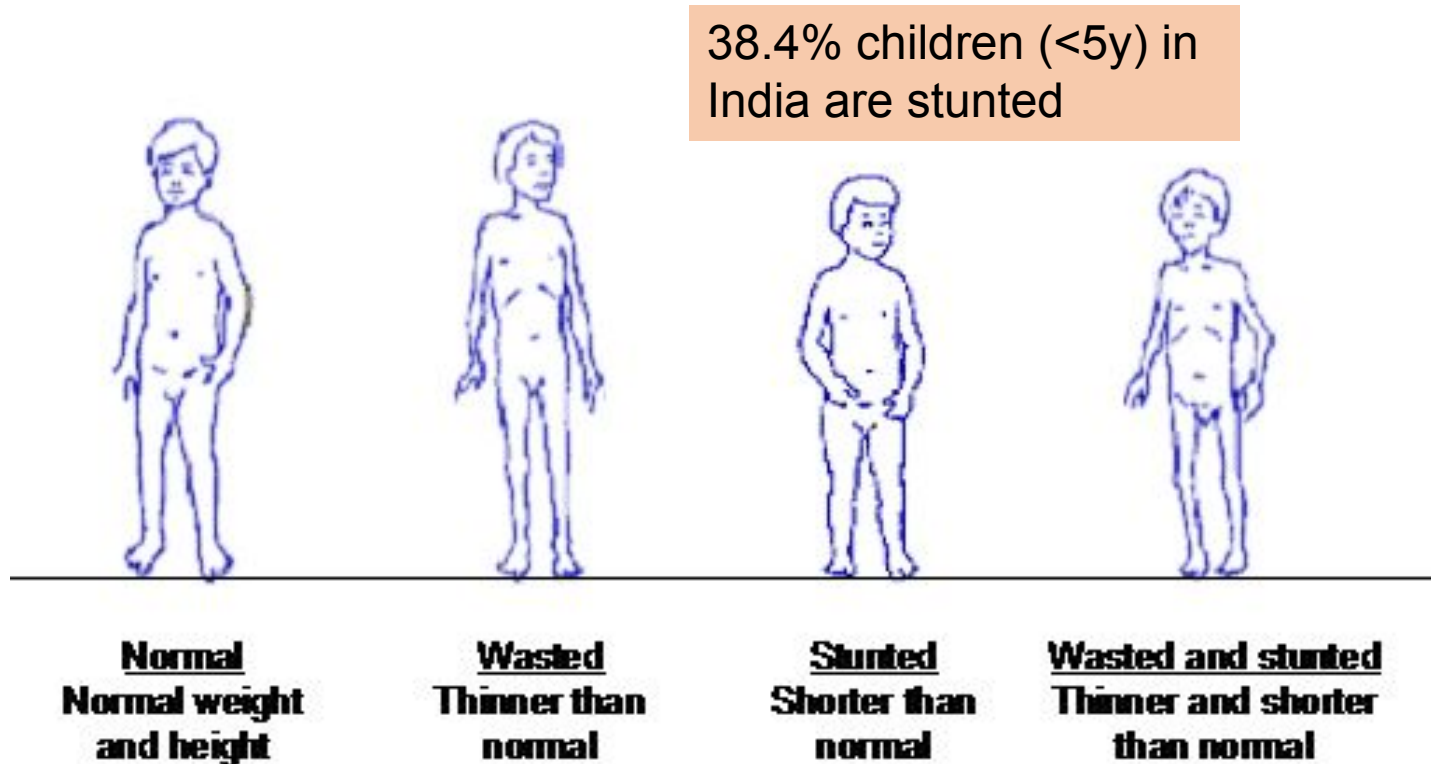
# The ways malnutrition is most frequently referred to in major reports

## Children < 5 years of age

- **Stunting:** child <5 years of age is too short for their age—a result of *chronic* undernutrition (more than 2 standard deviations *below* median in a healthy population)
- **Wasting:** child <5 years of age has weight too low for their height—a result of *acute* undernutrition (more than 2 standard deviations *below* median in a healthy population)
- **Underweight:** child <5 years of age has weight too low for their age—from *either* chronic or acute undernutrition (more than 2 standard deviations *below* median in a healthy population)
- **Overweight:** child < 5 years of age has weight too high for height (more than 2 standard deviations *above* median in a healthy population)



Stunting: an index of child growth based on attained height for age  
Wasting: an index of child growth based on weight proportional to height

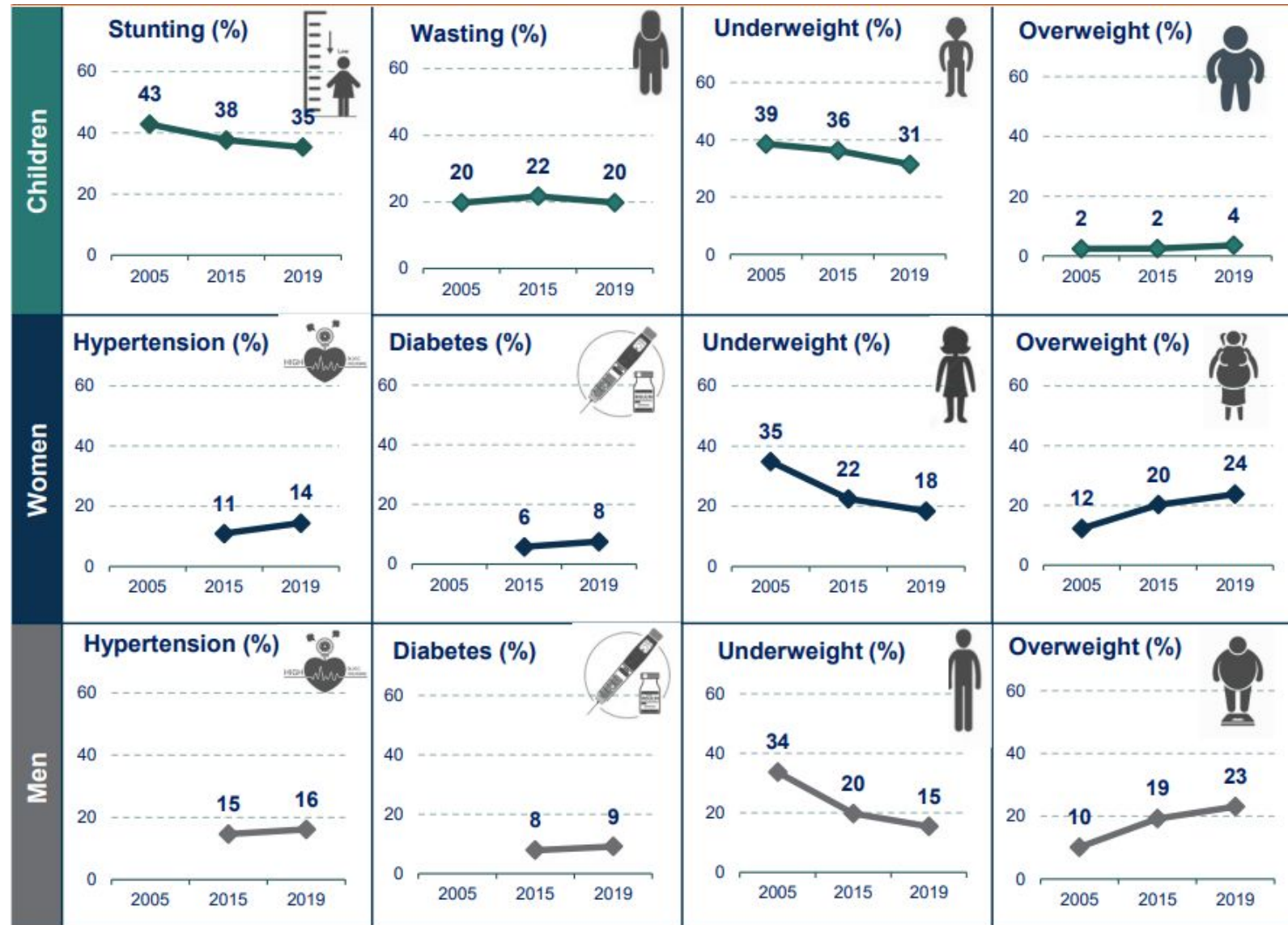


38.4% children (<5y) in India are stunted

21 % of children (<5y) in India are wasted



# Multiple forms of malnutrition: a new era



# Where does data in India come from on food and nutrition? And how available is it?

Dietary intake [food]	<ul style="list-style-type: none"><li>•NFHS (food groups)</li><li>•CNNS (food groups)</li><li>•NNMB (food intake, nutrients)</li></ul>
Nutrient intake [in food]	<ul style="list-style-type: none"><li>•NNMB (nutrient intakes)</li><li>•Upcoming DABI – diets, anthropometry, biomarkers</li></ul>
Nutrient status [in the blood]	<ul style="list-style-type: none"><li>•CNNS</li><li>•NNMB</li><li>•DABI</li></ul>
Functional outcomes related to nutrition [physical tests, cognitive tests]	<ul style="list-style-type: none"><li>•None that I am aware of</li></ul>
Physical outcomes related to nutrition [body size]	<ul style="list-style-type: none"><li>•NFHS</li><li>•CNNS</li><li>•DABI</li></ul>

Only the NFHS survey rounds are available in public domain

# New diet data portal is currently available for India!



## Indian Diet Data Portal

Home > Indian Diet Data Portal

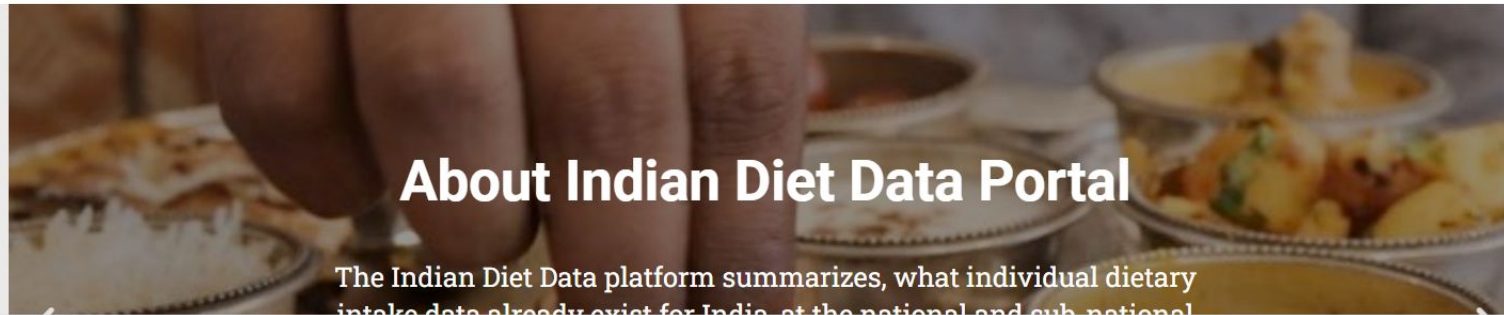
## Indian Diet Data Portal

About

Data Map

Data Inventory

Nutrient Data



The Indian Diet Data platform summarizes, what individual dietary intake data already exist for India, at the national and sub-national



## About the Indian Diet Data Portal

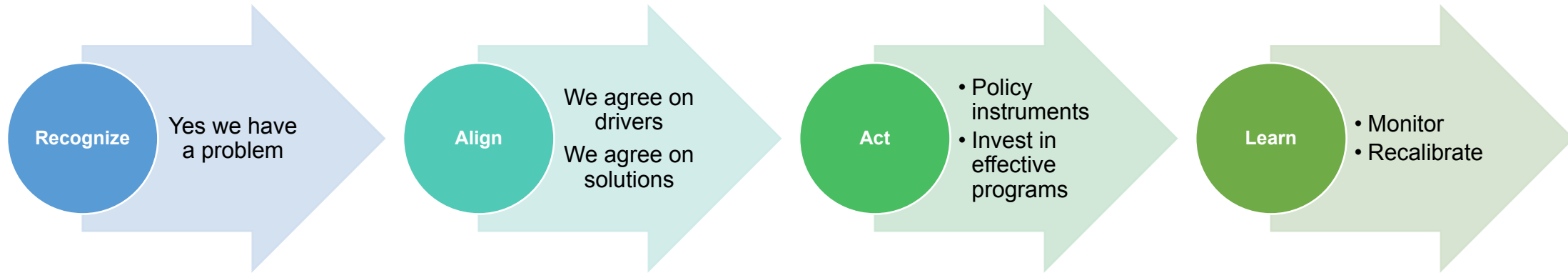
Data on individual food consumption is needed to make agri-food policies and programmes more nutrition sensitive. The Indian Diet Data portal to summarize, in one place, what individual dietary intake data already exist for India, at the national and sub-national level.

It is designed and developed with the objective to shed light on data gaps in the country with respect to dietary intake data and to make available data more readily available to end users. It includes a compilation of metadata such as where the data were collected, from whom, when, using what tool. In some instances, microdata have also been made available.

We have taken inspiration from the global dietary database, FAO/WHO Global Individual Food consumption data Tool ([GIFT](#))

[Join our Learning Network on Indian Diet Data](#)

# Moving an agenda in public policy is complex; bringing data and evidence to that is also complex



The evolution of **science and evidence**, policy, finance, politics, administrative, societal and cultural perspectives....



Pragati Rawat, John Charles Morris, 2016. Kingdon's "Streams" Model at Thirty: Still Relevant in the 21st Century? <https://doi.org/10.1111/polp.12168>



# POSHAN at IFPRI: A knowledge/evidence initiative

## Why?

- Support policy and program decisions and actions with data and evidence
- Strengthen capacity to produce and use evidence
- Create demand for nutrition knowledge and evidence

## Who?

- Initiated by a small group at IFPRI, with several partner organizations over the years
- Primary support from Bill & Melinda Gates Foundation

## How?

- High quality data & evidence work
- Evidence-based honest-broker
- Pro-active, opportunistic and responsive

## Focus of the evidence

### The challenge

- Who's affected
- By what
- In which areas/groups?

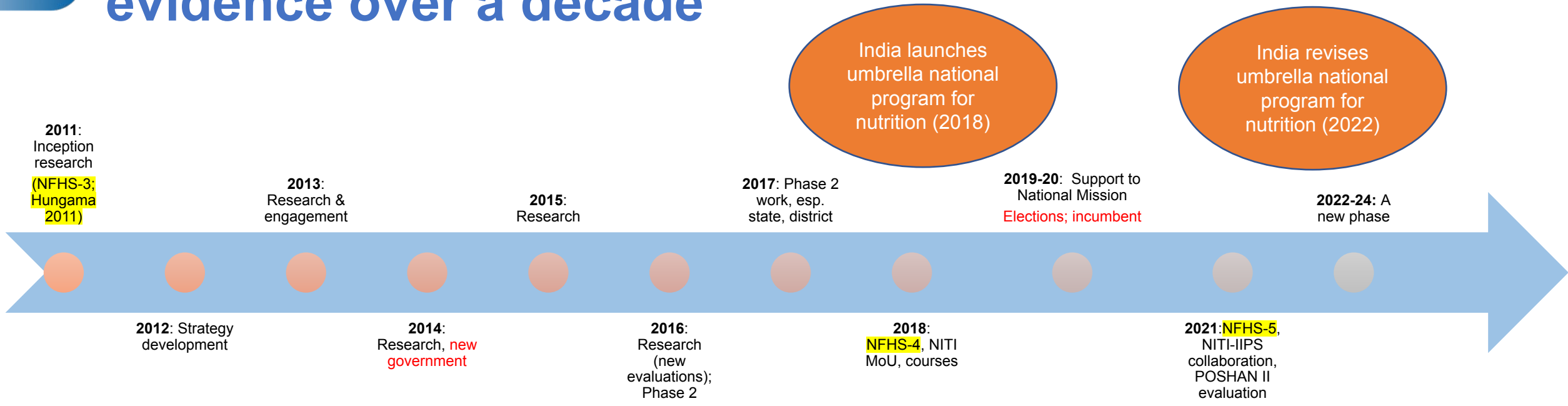
### The determinants

- What factors drive outcomes
- What factors drive change over time

### The solutions

- Who is reached by current solutions
- What is the impact of new solutions

# Supporting India's policy community with data and evidence over a decade



## 2011-12: FORMATIVE RESEARCH

- Policy reviews
- Stakeholder influence mapping
- Evidence reviews
- Knowledge network reviews
- Strategy development, drawing on evidence on evidence-to-policy

## 2013-15: FIRST PHASE

- Thematic research
- Stakeholder engagement

## 2016-21: SECOND PHASE

- Thematic, opportunistic & responsive research
- Expanded research partnerships
- Expanded engagement
- Capacity building

## 2021-22: POSHAN 2 extension/supplement

- Thematic research
- Expanded research partners

## 2022-24: A new phase

- Thematic research
- Partnerships

# The portfolio of data & evidence to support the policy community



## Work with large data sets

- Descriptive knowledge products
- Research papers



## Implementation research studies

- Convergence and service delivery, technology integration, maternal nutrition, growth monitoring quality, bottleneck flows, food supplements in ICDS, maternity benefit transfers



## Nutrition financing

- Costing studies
- Engagement with a nutrition financing network on continuum of financing

# What forms of evidence did we generate in the last decade?

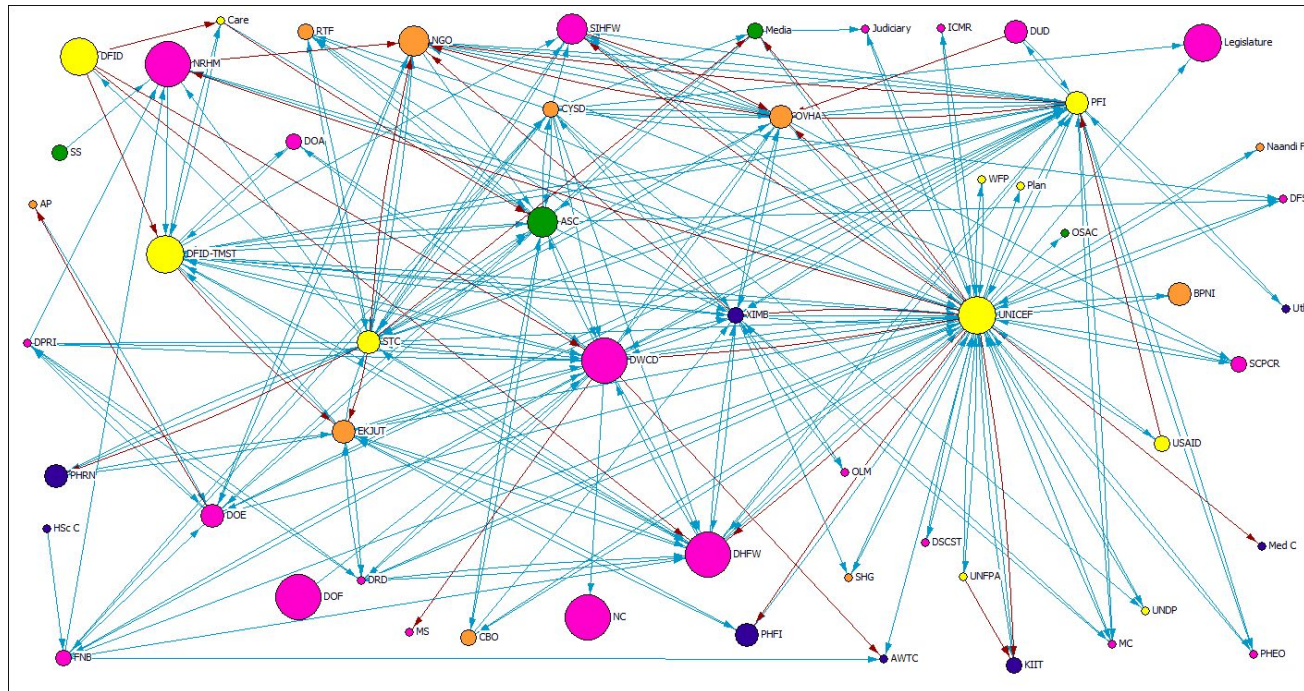
Type	Number
Abstract Digests and COVID-19 Digest	39
Data, Policy, and Research Notes*	106
Reports	16
District Nutrition Profiles (counting updated versions across POSHAN-2)	NFHS-4: 640 NFHS-4 & -5: 707
State Nutrition Profiles (counting updated versions across POSHAN-2)	33
Journal articles	55







# Our approach to engaging and supporting stakeholders explicitly recognizes the diversity of the nutrition policy community in India and the diversity of the available evidence



A policy community is a large group – our approach to engagement is, therefore, tailored to embrace this diversity and be wide-ranging (policy makers, informal and formal working groups, academics, media, civil society and development partners)

# Our communications and engagement focused connecting stakeholders to data and evidence and creating demand for data and evidence



Virtual knowledge platforms  
– IFPRI-POSHAN's new  
website went live –  
September 2019



Knowledge products



Physical knowledge  
networks

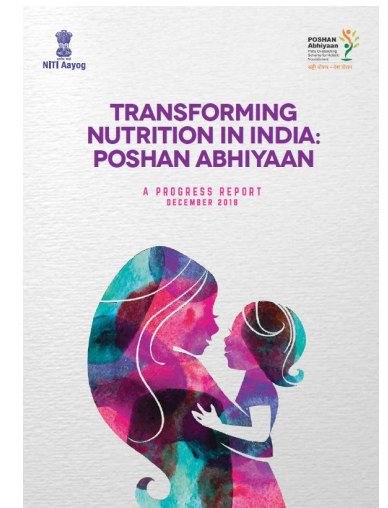


Direct engagement &  
capacity strengthening



# Examples of how we supported the policy community over the years

- **Engaging with development partners and other networks**
  - Coalition for Food and Nutrition Security
  - Development partner networks
  - Take-home rations network
  - Nutrition financing
  - Maternal nutrition network
  - Quality of care network
  - COVID data partners group
- **Supporting Government of India and state governments**
  - [Monitoring framework](#) for POSHAN Abhiyaan
  - POSHAN Abhiyaan monitoring reports ([2018](#), [2019](#), [2020](#), [2021](#))
  - Responsive analyses and co-authored journal articles and policy products
  - Numerous studies for state governments
- **Supporting national policy capacity strengthening**
  - In-person nutrition training for district administrators and others
  - Developing nutrition online course for administrators





# Knowledge mobilization, capacity strengthening, and technical support is all about working with people & requires resources

## Knowledge mobilization & technical support

- Co-develop knowledge products, with a focus on peer-reviewed research
- Co-organize dissemination events, learning labs, flagship conferences (e.g., Delivering for Nutrition)

## Capacity strengthening

- Support efforts to strengthen nutrition capacity for diverse actors
  - Online course with national training academy
  - State-specific trainings for officials
  - Nutrition short courses
- Support evidence-to-policy activities with research partners on diverse thematic areas





# Bringing people together: Delivering for Nutrition, a flagship conference on implementation research to bring evidence to stakeholders



**2020**

VIRTUAL EVENT **D4N 2021** December 1-2, 2021

**Delivering for Nutrition in South Asia 2021**  
Implementation Research in the Context of COVID-19

**D4N 2022**

**Keynote Plenary**

**Making Food Choices for Healthy Diets: The Push and Pull Factors**

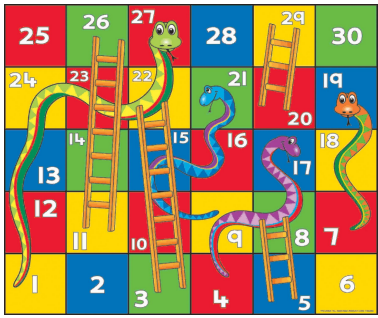
**Simon Barquera**  
Director, Center for Research in Nutrition and Health, National Institute of Public Health

**2022**

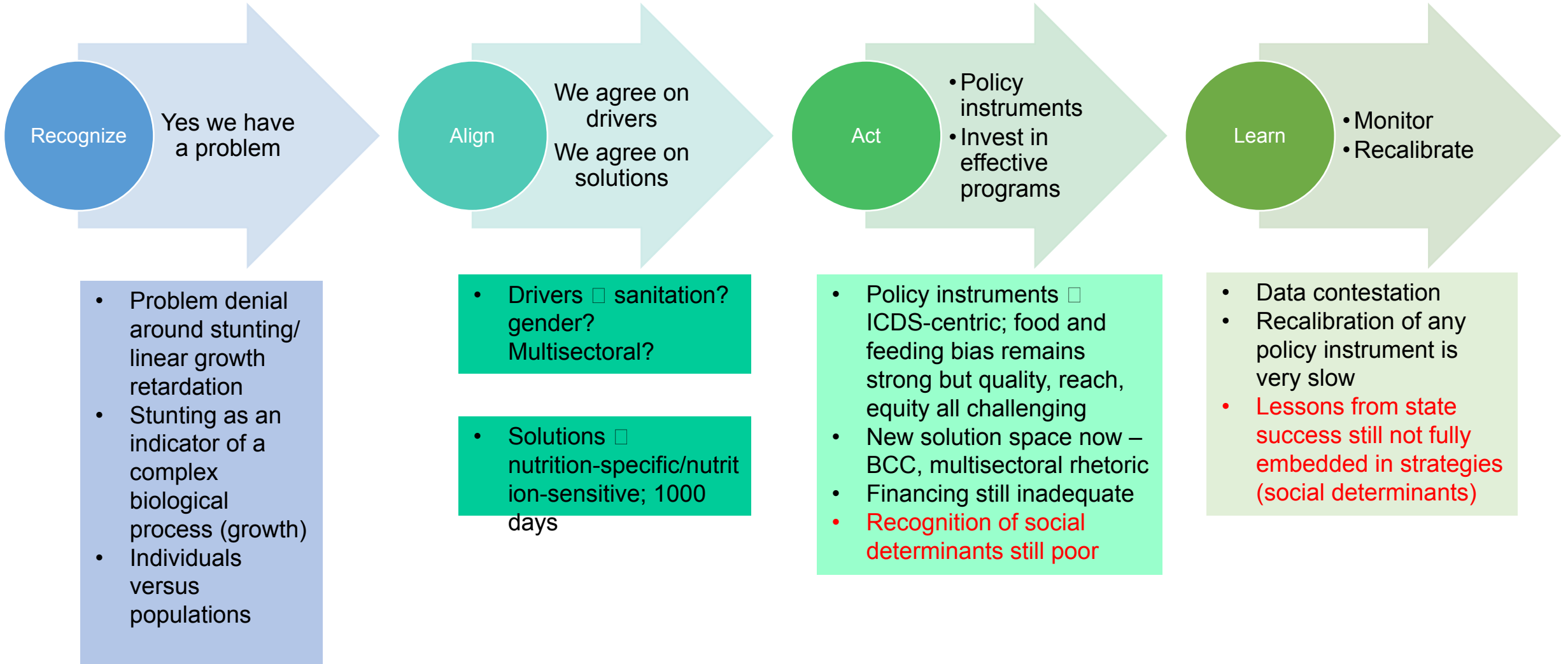
# Use cases

- Stunting reductions in India
- Program coverage data in India
- Dietary data in South Asia and India
- A local food systems assessment in South Asia





*What have we learnt:* On childhood stunting in India, it has been a long road, but the issue is still standing





# Problem recognition for childhood stunting: why are Indian children short?

- **Problem**
  - 2008: Acceptance and “shame” and “curse”
  - 2009 -2014: Denial around growth standards
  - 2013: EPW collection debunking this
  - 2015-2018: Re-acceptance and integration into national goals and POSHAN Abhiyaan strategy
- **Determinants**
  - Sanitation (Spears et al)
  - Gender/patriarchy (Jayachandran and Pande)
  - Multifactorial, complex (Menon et al., Subramanyam et al)
  - Underlying social discrimination (Deshpande et al, 2021)

## Discussion

- Methodologically Deficient, Ignorant of Prior Research  
*Gargi Wable*
- Myths and Realities of Child Nutrition  
*Stuart Gillespie*
- Stunting among Children - Facts and Implications  
*Alessandro Tarozzi, Angus Deaton, Dean Spears, Diane Coffey, Jean Dreze*
- Reality of Higher Malnutrition among Indian Children  
*C Sathyamala, Rakesh Lodha, Yogesh Jain*
- Are Child Malnutrition Figures for India Exaggerated?  
*Arun Gupta, Biraj Patnaik, Devika Singh, Dipa Sinha, R Srivatsan, Radha Holla, Sachin Jain, Samir Garg, Sejal Dand, Sulakshana Nandi, Vandana Prasad, Veena Shatrugna*
- Choice Not Genes - Probable Cause for the India-Africa Child Height Gap  
*Rohini Pande, Seema Jayachandran*

### DISCUSSION

#### Stunting among Children Facts and Implications

DIANE COFFEY, ANGUS DEATON, JEAN DRÈZE, DEAN SPEARS, ALESSANDRO TAROZZI

Indian children are very short, on average, compared with children living in other countries. Because height reflects early life health and net nutrition, and because good early life health also helps brains to grow and capabilities to develop, widespread growth faltering is a human development disaster. Panagariya acknowledges these facts, but argues that Indian children are particularly short because they are genetically programmed to be so. In consequence, the higher prevalence of stunting among Indian children than among children in much poorer countries in Sub-Saharan Africa comes from using inappropriate common stan-

obvious, and, in the rest of the literature, well-understood omission – is the importance of the disease environment. There are passing mentions of health and medical care, but healthcare is *much* less important for health status than the toll on children’s growth that comes from constant struggling with disease. In the past, economists were taken to task for assuming that food, primarily driven by real income, is the key to human nutritional status. Food is obviously important, but so is disease, and food and disease interact in key ways. All of this has been well understood for a long time, especially in the interpretation of the historical mortality

#### Are Child Malnutrition Figures for India Exaggerated?

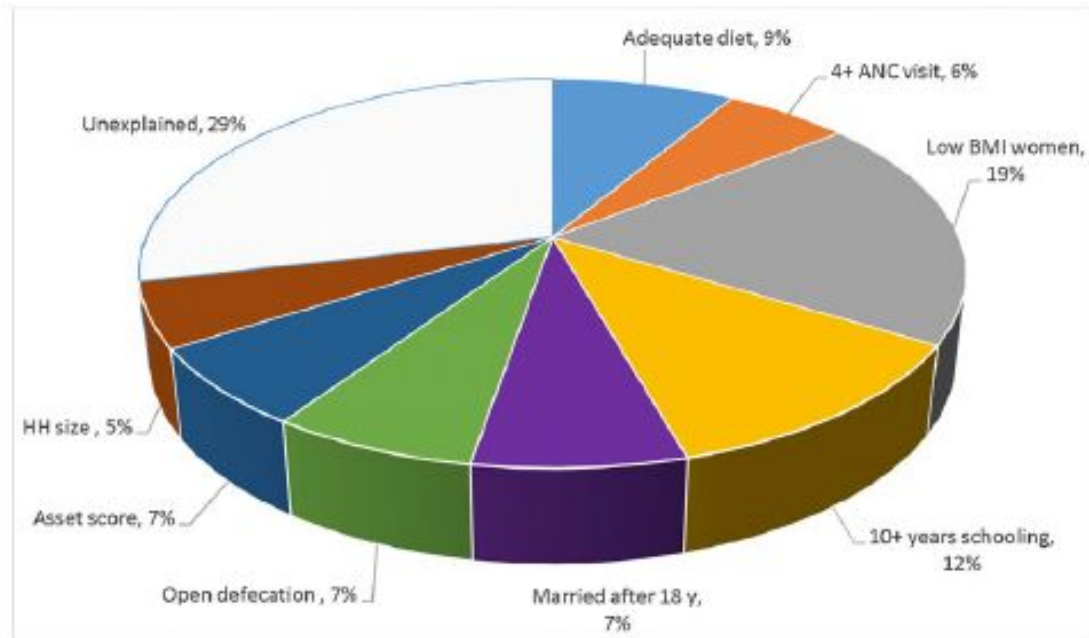
ARUN GUPTA, BIRAJ PATNAIK, DEVIKA SINGH, DIP SINHA, RADHA HOLLA, R SRIVATSAN, SACHIN JAIN, SAMIR GARG, SEJAL DAND, SULAKSHANA NANDI, VANDANA PRASAD, VEENA SHATRUGNA

In his paper Arvind Panagariya argues that the current World Health Organization (WHO)-recommended international growth standards exaggerate the extent of stunting in India. He points out that while the prevalence of stunting by current norms is higher in India than many poorer Sub-Saharan African countries, it has much lower mortality rates

selectively to drive home the point that the Indian story of malnutrition needs to be recast and retold.

Our response attempts to go beyond numbers, and get to the root of the problem of hunger and malnutrition, and highlights the complexity of relationships that produce “stunted bodies” in India. As we understand it, low weights

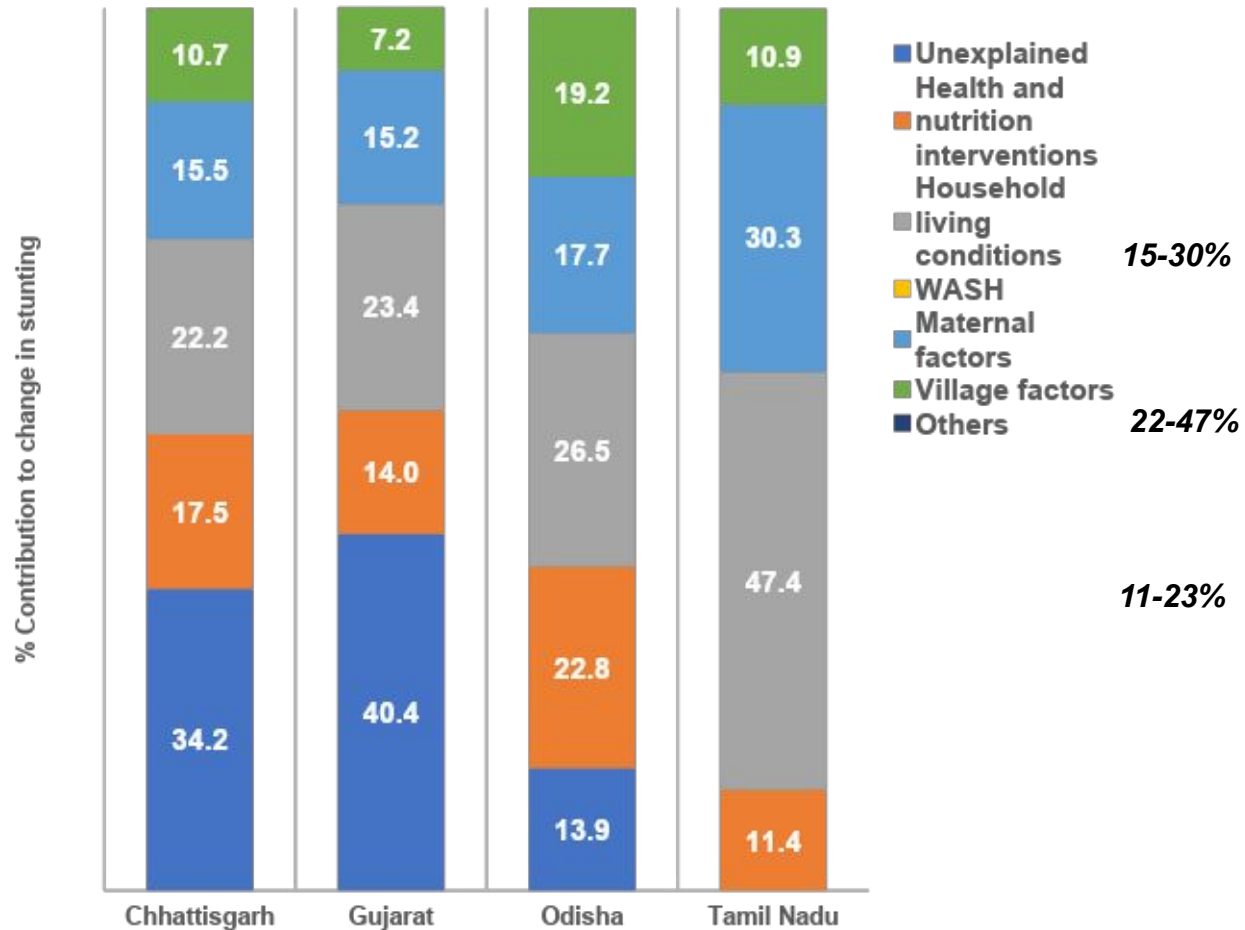
# Determinants: What factors explain differences between high- and low-stunting districts across India?



## Key insights:

- Used district-level data from national survey to highlight spatial differences in stunting across 640 districts in India.
- Findings highlight the range of factors that explain differences between high and lower stunting burden districts.
- Results emphasize the importance of focused strategic planning and action to address multiple, and different, district-specific determinants of stunting across India.

# Lessons from Indian states that reduced stunting (2006-16) offered insights for strategy that are not yet fully included in policy



Multisectoral drivers of change

## How did policies evolve?

- Major national efforts – ICDS scale-up; NRHM introduction and scale up
- Successful states added to national efforts with varying nature and timing of state additions
- Food security, poverty policies/programs too + economic growth

## What supported change?

- Vision to address an outcome was key
- Capable, stable bureaucrats who were given space and time
- Financing adequacy, flexibility, stability;
- Efforts to strengthen implementation systems
- Catalysts, champions of various types played a role (media, civil society, human rights commissions, politicians, bureaucrats)

Source: Avula et al. 2021. Reducing childhood stunting in India: Insights from four subnational success cases. Food Security.

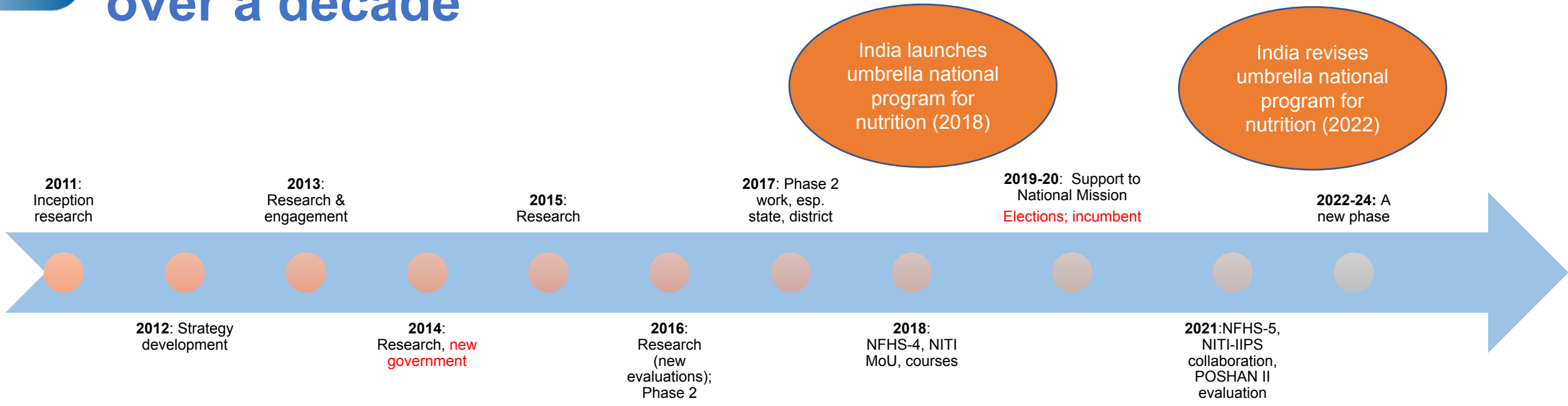
# Use cases

- Stunting reductions in India
- **Program coverage data in India**
- Dietary data in South Asia and India
- A local food systems assessment in South Asia



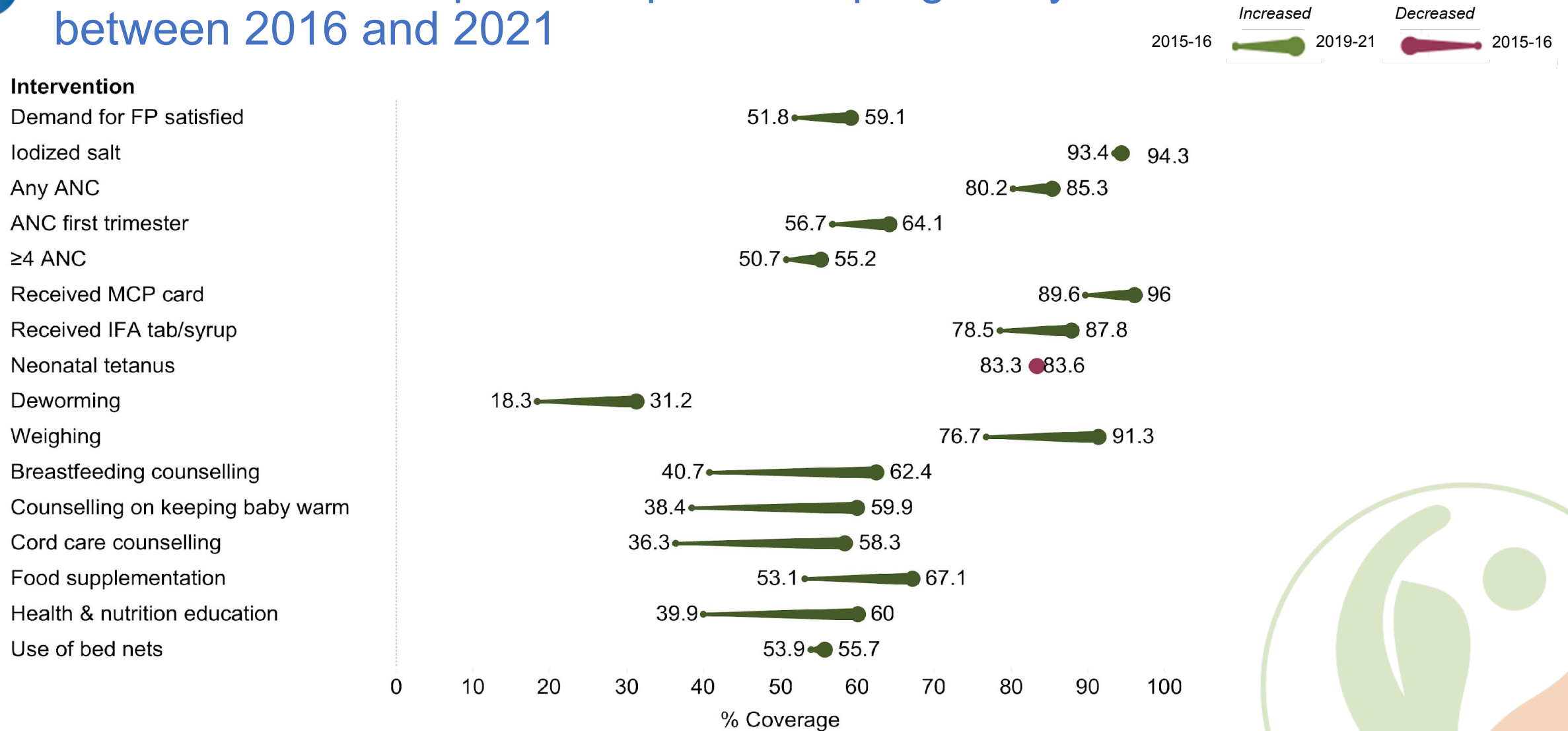


# Supporting India's policy community with evidence over a decade



- 2022-24: A new phase**
- Thematic research
  - Partnerships

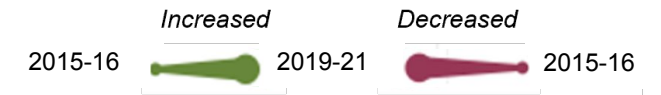
# Progress since launch of POSHAN Abhiyaan in 2018: Coverage increased for most preconception and pregnancy interventions between 2016 and 2021



ANC: Antenatal care, IFA: Iron & Folic Acid, MCP: Mother & Child Protection  
 Source: NFHS-4 (2015-16) and NFHS-5 (2019-21) unit-level data; Note: Sample is mother-last child pairs at the household level.

# Progress since launch of POSHAN Abhiyaan in 2018:

## Coverage increased for *all* interventions during pregnancy and post-natal periods between 2016-2021



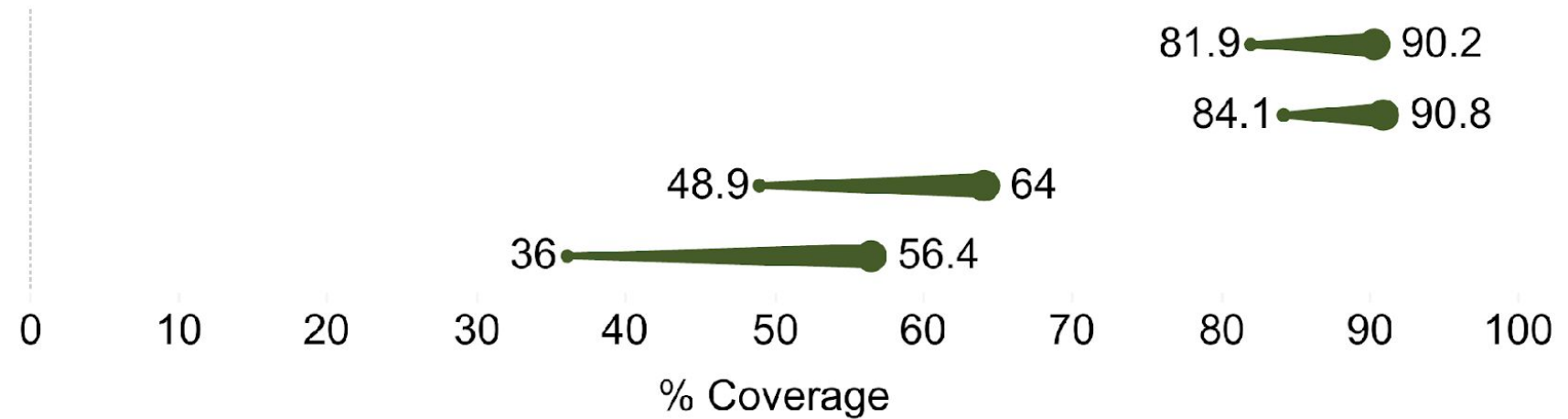
### Intervention

Institutional birth

Skilled birth attendant

Food supplementation

Health & nutrition education



# Progress since POSHAN Abhiyaan in 2018: Coverage of most early childhood interventions improved in India between 2016 and 2021



## Intervention

Full immunization

Vitamin A

Pediatric IFA

Deworming

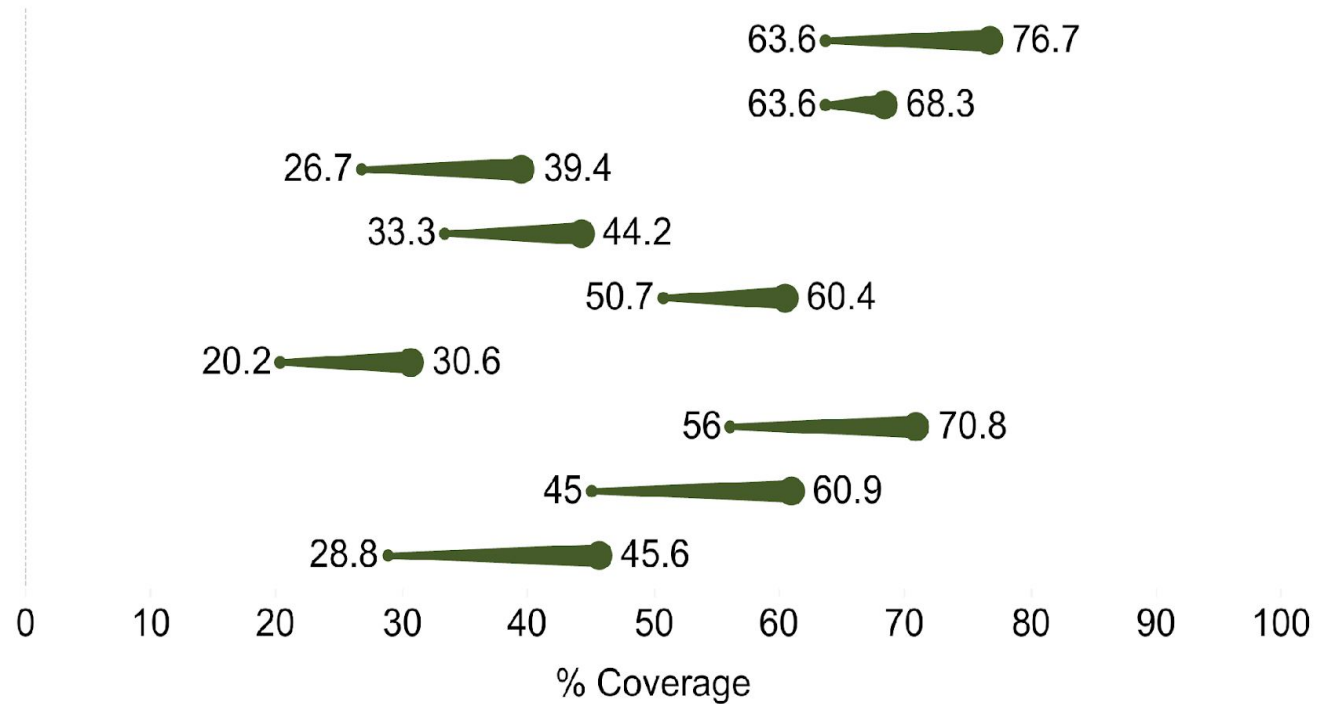
ORS during diarrhea

Zinc during diarrhea

Food supplementation

Weighing

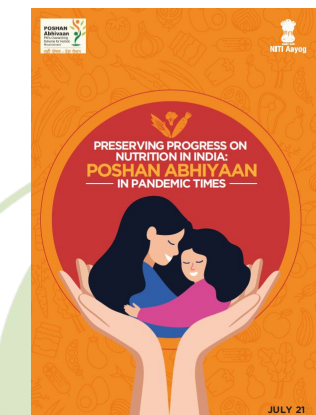
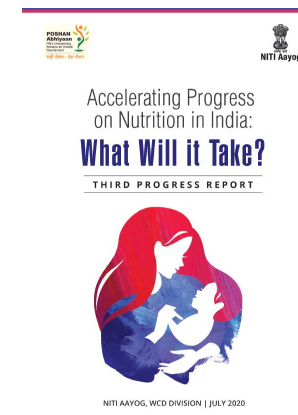
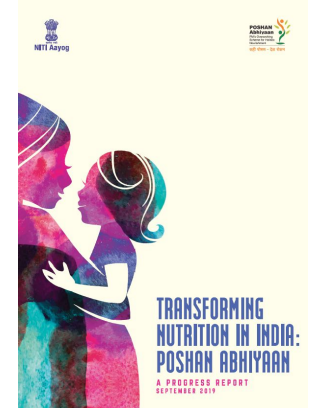
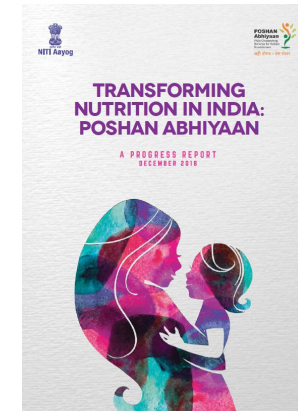
Counselling on child growth



# *What we learnt about connecting the dots:* An learning architecture to support India's nutrition journey during POSHAN Abhiyaan (2018-2022) offered numerous opportunities for data and evidence communities

## Examples of evidence to program linkages in POSHAN Abhiyaan (2018-2022)

- Monitoring framework
- Periodic progress reports and links to political and administrative reviews
- SBCC surveys and links with national SBCC Alliance
- Aspirational district program (ADP) surveys and links with ADP program
- M-Health (ICDS-CAS) monitoring and evaluation and links with technology roll-out program
- Anemia Free India dashboard and other learning opportunities
- COVID-19 monitoring and learning networks



# Use cases

- Stunting reductions in India
- Program coverage data in India
- Dietary data in South Asia and India
- A local food systems assessment in South Asia





# Dietary data gaps in South Asia

- The availability of dietary data across Bangladesh, India, Nepal, and Pakistan is currently poor.
- Data are mostly available on food group consumption and for infants and young children.
- Few surveys capture quantity of foods consumed; estimating nutrient intake from population-based surveys is therefore not possible
- Only Bangladesh currently has large-scale publicly available and repeated rounds of data on dietary intakes for multiple age groups.

**ABOUT THIS NOTE**

This research note presents findings on the availability of diet-related data in publicly-available population-based surveys conducted in Bangladesh, India, Nepal, and Pakistan in the last decade. It is intended to be used by researchers and policymakers to understand the data landscape and identify measurement priorities for future surveys.

**KEY FINDINGS**

- Data on diets for older children and adolescents are captured less frequently than for younger children and women of reproductive age.
- Data are mostly available on food group consumption and for infants and young children; data on consumption of unhealthy foods is poor.
- Few surveys capture quantity of foods consumed; estimating nutrient intake from population-based surveys is therefore not possible.
- Only Bangladesh currently has large-scale publicly available and repeated rounds of data on dietary intakes for multiple age groups.
- Dietary data are essential to shape public policy on nutrition; financial and technical investments are needed to scale up data availability in South Asia.

Logos: CIMMYT, IRRI, WMI, CIP, WorldFish, ILRI

## BACKGROUND

- Nutritional status outcomes are poor in South Asia (1) with multiple forms of malnutrition present across the region.
- Diets, and especially diet quality, are immediate determinants of nutritional status (2).
- Progress on improving diets requires adequate information on current dietary challenges.
- It is important to measure consumption of all types of foods for all age groups given changing diets and nutritional challenges over time and variation during lifetimes.
- Programs and policies to improve diets should be based on recent data and evidence and should be updated routinely to reflect shifting dietary patterns.

- However, little is known about the availability of dietary data across countries in South Asia.
  - This work responds to this research gap by providing a landscape analysis of publicly available data on diets in four countries in South Asia.
- OBJECTIVES**
- We aimed to assess the availability of data on the quality of diets and nutrient intakes for multiple age groups across four countries in South Asia: Bangladesh, India, Nepal, and Pakistan.



## DATA AVAILABILITY: HEALTHY/UNHEALTHY FOOD CONSUMPTION

- Data on consumption of healthy or unhealthy foods is available mainly from 24-hour recalls of food types/groups, except in Bangladesh where data are also available from weighed food recalls.
- More data are available for consumption of healthy foods than on unhealthy foods.
- Data on consumption of healthy and unhealthy foods among adolescents were not available in India and Pakistan. In India, the CNNS does provide some insights in aggregated reports/papers, but the data are not available in public domain.
- Data on consumption of processed meat was only available in Bangladesh (BIHS 2018-19).

**Table 5. Availability of data on consumption of healthy and unhealthy foods by children (CH), adolescents (AD), women of reproductive age (WRA), and households (HH)**

Country	Survey	Healthy foods				Unhealthy foods		
		Whole Grains	Fruits and vegetables	Animal source foods	Processed meat	Sugar sweetened beverages	Sweets	Salty snacks or fried foods
Bangladesh	BIHS 2018-19	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH	✓ CH, AD, WRA, HH
	HIES 2016	✗	✗	✗	✗	✗	✗	✗
	BDHS 2017-18	✓ CH	✓ CH	✓ CH	✗	✗	✗	✗
	MICS-BG 2019	✓ CH	✓ CH	✓ CH	✗	✗	✗	✗
India	NSS 2012	✗	✗	✗	✗	✗	✗	✗
	NFHS 2019-21	✓ CH	✓ CH, WRA	✓ CH, WRA	✗	✓ WRA	✗	✓ WRA
Nepal	NDHS 2016	✓ CH	✓ CH	✓ CH	✗	✓ CH	✓ CH	✗
	MICS-NP 2019	✓ CH	✓ CH	✓ CH	✗	✗	✗	✗
Pakistan	PCS 2016	✓ CH, WRA	✓ CH, WRA	✓ CH, WRA	✗	✗	✓ CH, WRA	✓ CH, WRA
	AHS 2015-16	✓ HH	✓ HH	✓ HH	✗	✓ HH	✓ HH	✓ HH
Pakistan	PDHS 2017-18	✓ CH	✓ CH	✓ CH	✗	✓ CH	✓ CH	✗



## CONCLUSIONS

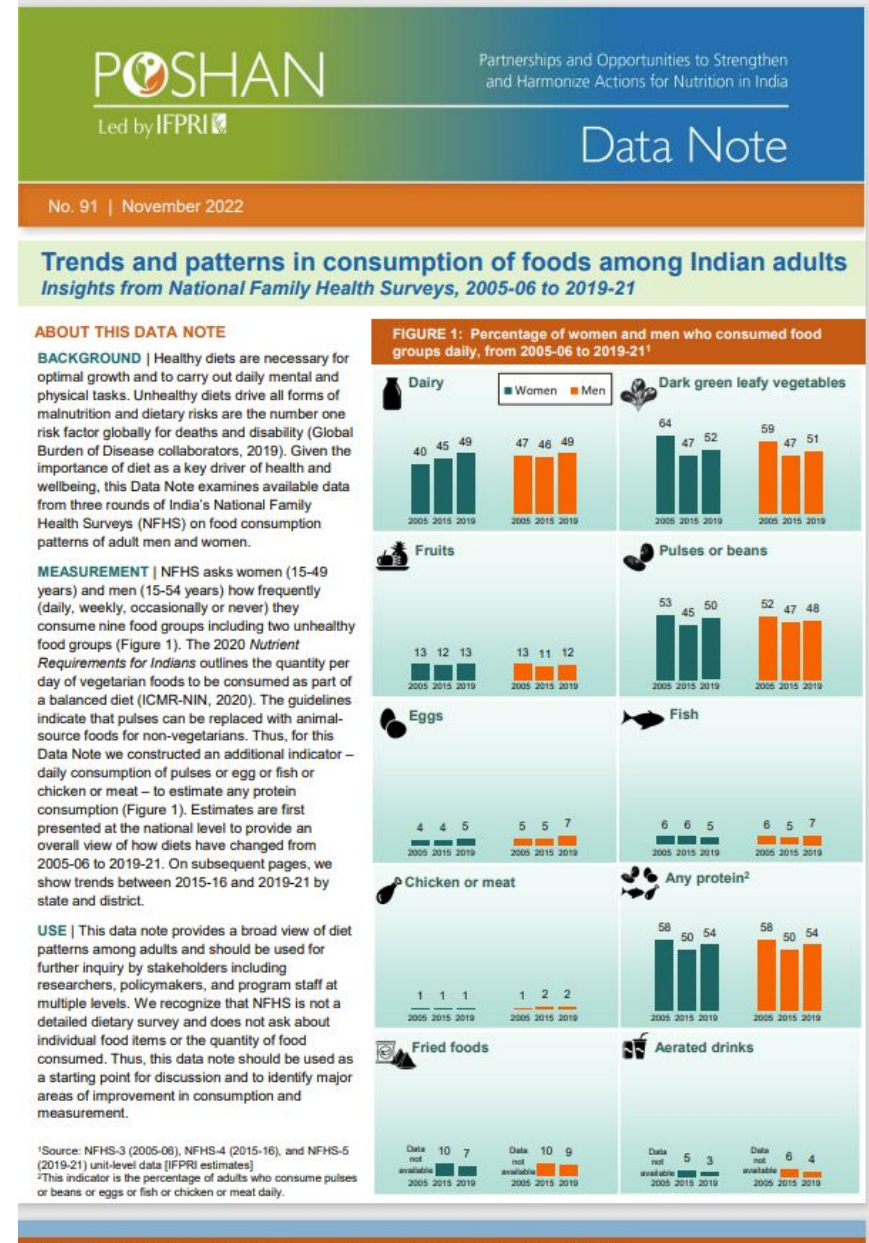
- The availability of dietary data across Bangladesh, India, Nepal, and Pakistan is currently poor.
- Data are mostly available on food group consumption and for infants and young children.
- Only Bangladesh currently has large-scale publicly available and repeated rounds of data on dietary intakes for multiple age groups.
- Some datasets, such as India's Comprehensive National Nutrition Survey, could not be included in our review because they are not in public domain.

## RECOMMENDATIONS

- All age groups including older children and adolescents should be included in surveys that capture dietary data.
- Future surveys should consider inclusion of data to compute recently developed validated indicators of healthy diets.
- Data on quantity of foods consumed should be gathered periodically to better understand nutrient intake.
- Available data should be posted in public domain to enable widespread use for research and for policy.
- Dietary data are essential to shape public policy on nutrition; financial and technical investments are needed to scale up data availability in South Asia.

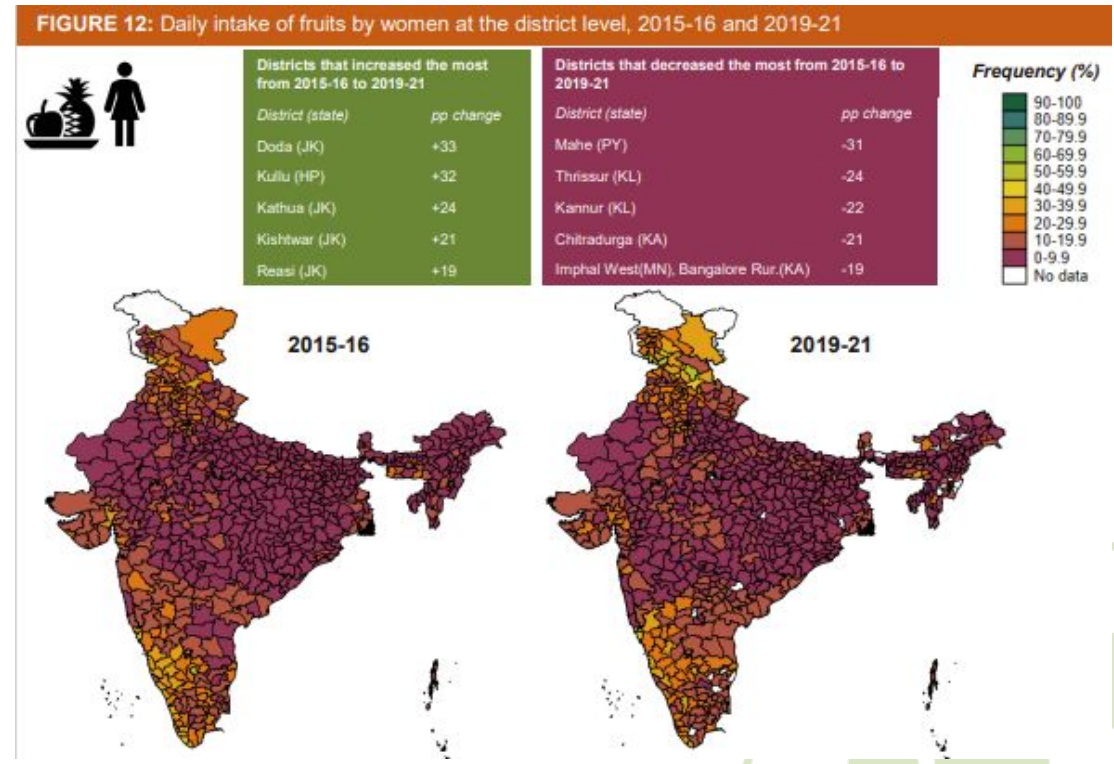
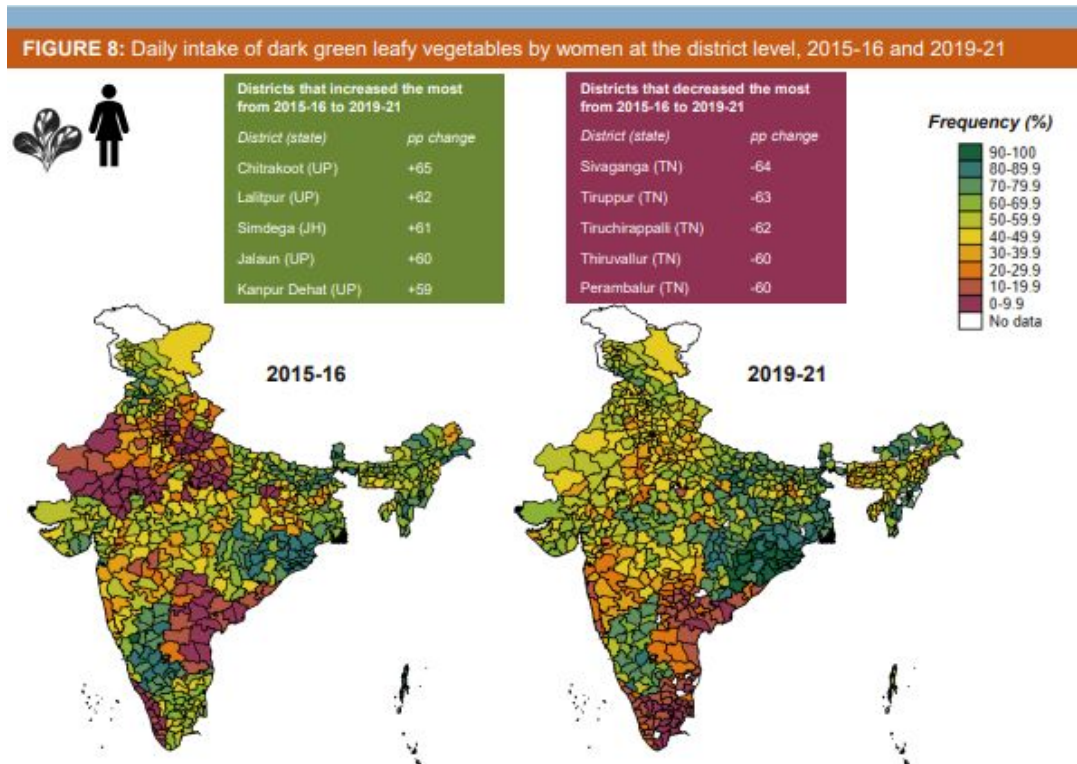
# Insights on food patterns among adults in India: NFHS

- Very limited data on food groups in the NFHS
  - Not all food groups
  - Not asked using standardized dietary indicator methods for food groups
- Still useful to assess patterns and trends
- At the national level from 2005-06 to 2019-21, only the daily consumption of dairy has increased.
- The consumption of dark green leafy vegetables and any protein has declined and consumption of fruits has remained low.
- Few Indians consume animal source foods daily, and only around half consume any protein (either animal source foods or pulses).
- On a positive note, the consumption of fried foods and aerated drinks has not increased in the last 4-5 years



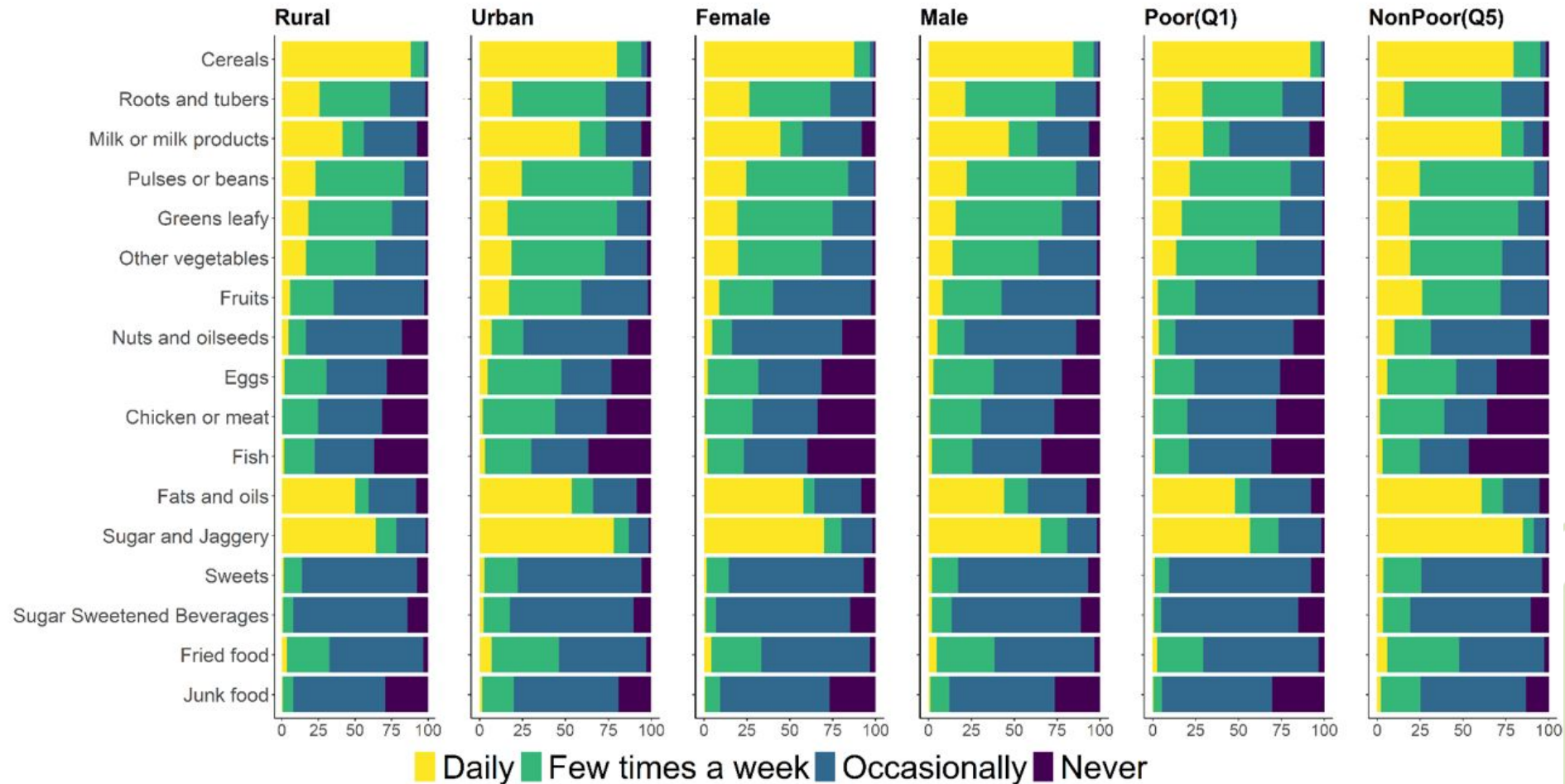


# Vast differences in trends and levels of daily consumption of green leafy vegetables vs. fruits (NFHS)



# India: Insights on intake of 17 food groups from the CNNS

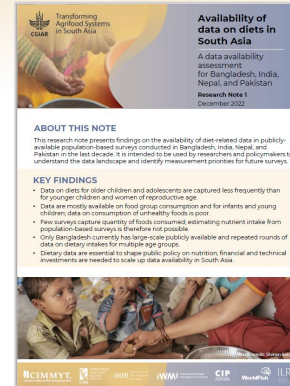
Figure 1. Frequency of intake of various food groups among adolescents 10-19 years in India



# Designing a local food systems assessment

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

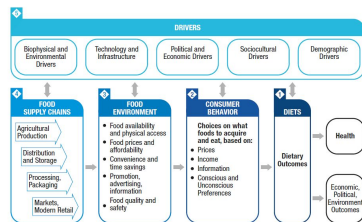


Identifying gaps in secondary data on diets in South Asia

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)

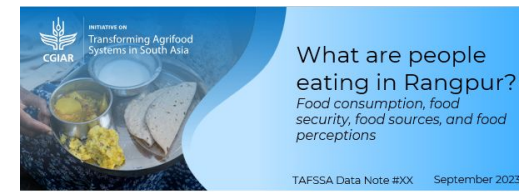




# District diet snapshot

- Data collected in Feb-Mar 2023
  - 4000 households, ~12,000 individuals (adult men, adult women, adolescents)
- Highlights gender and age differences in diets
  - E.g. sweets/ice-cream consumed by 40% of adult women vs. 75% of adult men
- Reports on drivers of food choice for select food items
  - Perceived nutrition quality, safety, accessibility, affordability, ease of preparation, taste, etc.
- Identifies food sources
  - Most food consumed is purchased (not produced, received from others, or foraged)

Scott et al, 2023. Forthcoming...



**ABOUT THIS BRIEF** | The Transforming Agrifood Systems in South Asia (TAFSSA) district agrifood systems assessment aims to provide a reliable, accessible, and integrated evidence base that links farm production, market access, dietary patterns, climate risk responses, and natural resource management in rural areas of Bangladesh, India, Nepal and Pakistan. It is designed to be a district-level multi-year assessment. Using data collected in February-March 2023, this brief describes what people are eating, where they get their food, household food insecurity, and perceptions about food. This is one of a set of briefs that, together, provide a holistic picture of the food system in the district.

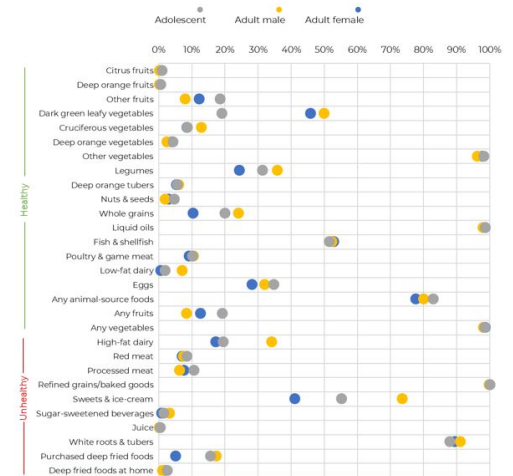


Figure 1. District location in Bangladesh

Figure 2. Highlights from this brief



Figure 5. Consumption of food groups on previous day



**FINDINGS**

- ✓ Consumption of fruits was <20% for all respondent types, and adolescents are less likely to consume dark green leafy vegetables than adults.
- ✓ Fish is the most commonly consumed animal-source food (ASF), and around 80% of individuals consumed some ASF on the previous day.
- ✓ Adult males were the most likely to consume sweets & ice-cream.

Note: High-fat dairy and red meat are considered unhealthy when consumed in high quantities.

TAFSSA District Agrifood Systems Assessment – What Are People Eating?

**MEASURING WHAT PEOPLE EAT** | Diets were measured by asking people about everything they ate or drank on the previous day, from the time they woke up until the time they went to bed and didn't eat or drink anything more. This includes all snacks and foods and drinks consumed at home and outside the home.

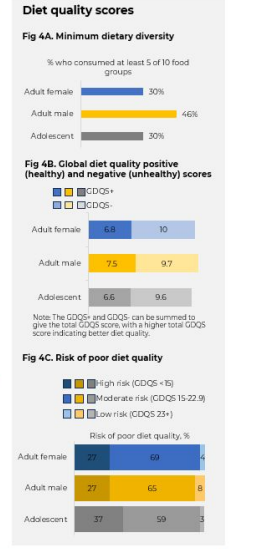
To capture this information, we used the Global Diet Quality Score (GDQS) application (Bromage et al. 2021). The GDQS allows us to understand diet quality, which is associated with the risk of disease. We report the percentage of individuals with at least minimum dietary diversity (FAO and EHL 2016) (Figure 4A), that is those who consume at least 5 of the following 10 food groups daily: 1) grains, white roots and tubers, and plantains; 2) pulses (beans, peas, and lentils); 3) nuts and seeds; 4) dairy; 5) meat, poultry, and fish; 6) eggs; 7) dark green leafy vegetables; 8) other vitamin A-rich fruits and vegetables; 9) other vegetables; and 10) other fruits.

We also computed metrics that indicate how healthy or unhealthy diets are (Figure 4B). Higher GDQS- and GDQS+ scores indicate better diet quality. We then grouped GDQS scores into 3 categories to indicate risk of poor diet quality (Figure 4C).

On the following pages, we show the percentage of individuals who consume various food groups (Figure 5), the consumption quantity by food group (Figure 6), how many times per day people eat (Figure 7), who eats at various eating occasions (Figure 8), and the most commonly consumed foods by eating occasion (Figure 9) and food group (Figure 10).

**FINDINGS**

- ✓ Dietary diversity was higher among adult men than adult women or adolescents.
- ✓ Adolescents were at higher risk of poor diet quality compared to adults.



**KEY TAKEAWAYS**

1. There is room for improvement in diet quality.
  - Consumption of healthy food groups such as whole grains, nuts & seeds, animal-source foods, fruits, and deep orange vegetables is low.
  - Consumption of unhealthy food groups such as refined grains/baked goods, biscuits, sweets, and sugary tea/coffee is high.
  - Consumption of starchy foods with low nutrient density (rice, potatoes) is high.
  - Compared to adults, adolescents are more likely to be at "high" risk of poor diet quality.
2. Most food is purchased from markets rather than being produced by households.
3. Food purchases are typically from haats, followed by retail shops.

**KEY QUESTIONS FOR ACTION**

1. What are the key barriers to improving diet quality in the district?
2. What are a few potential solutions to overcome these barriers? What is needed from decision-makers and from program teams to implement these solutions?
3. How can understanding eating patterns throughout the day and perceptions about healthy and unhealthy foods help inform strategies to influence consumption of these foods?
4. What additional information is needed to facilitate actions to improve diets in the district?



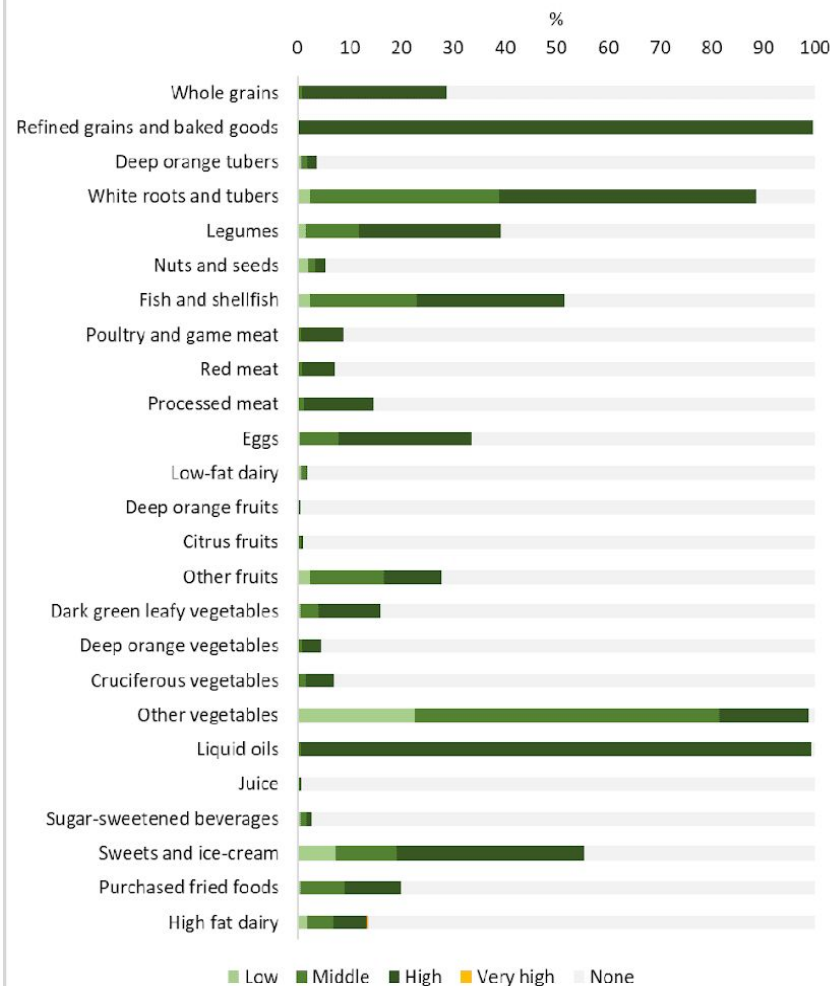
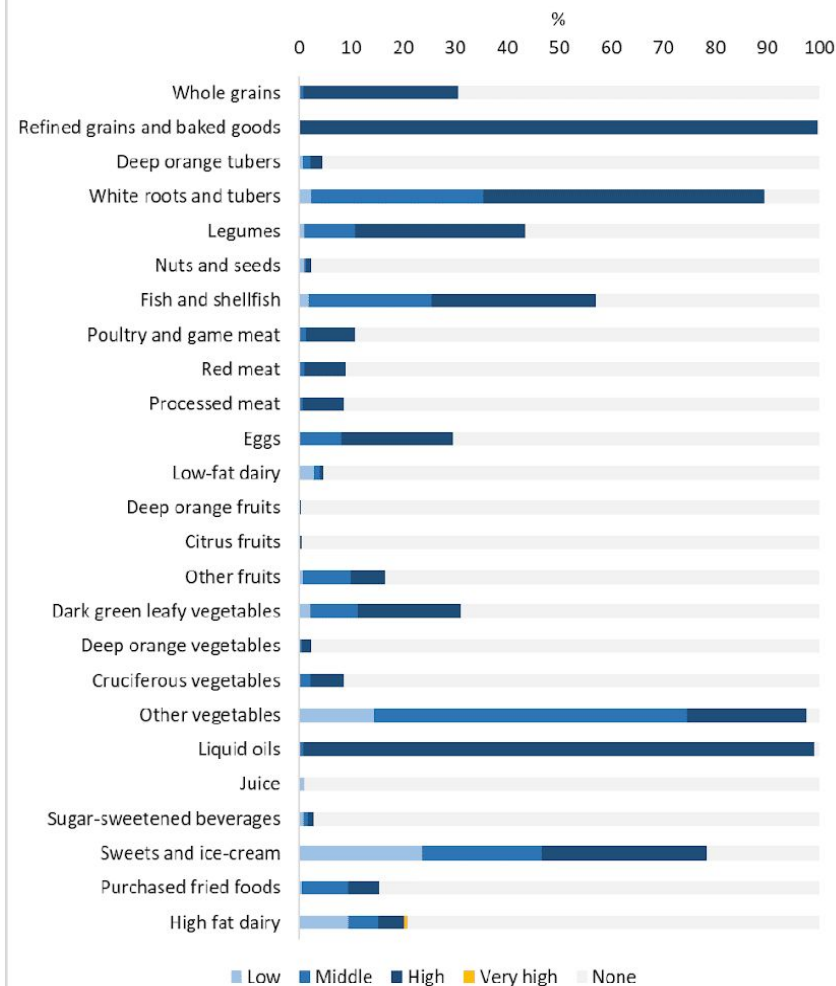
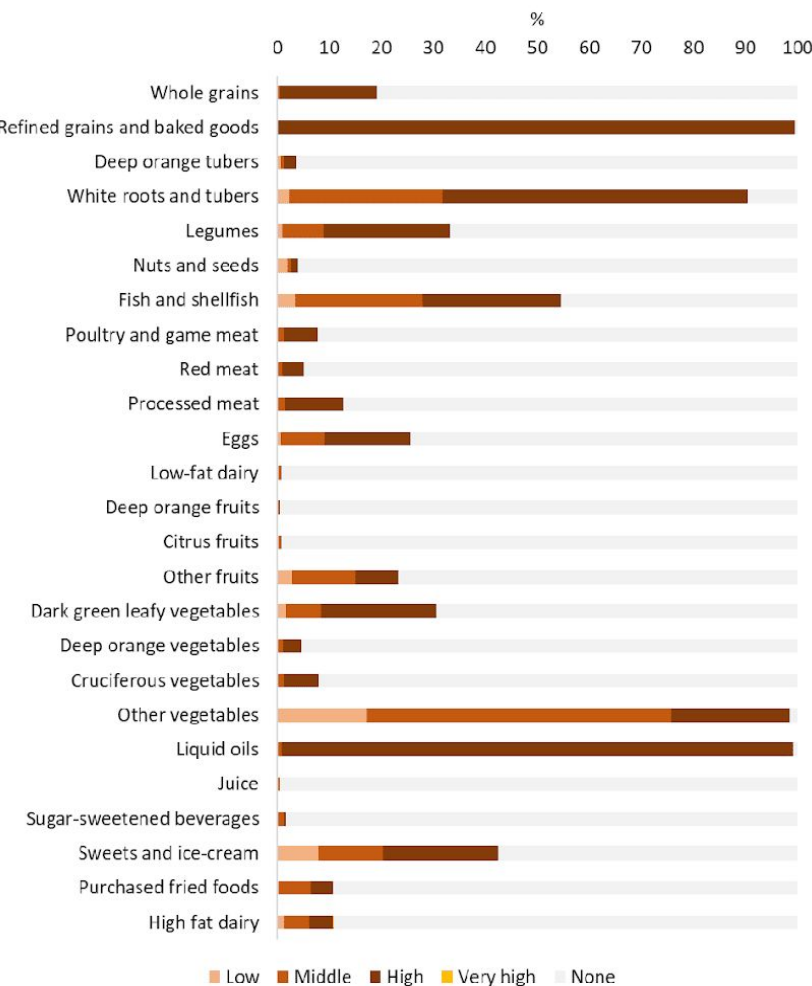
Photo credit: Shawn Sebastian

# Global Diet Quality Score: Level of consumption of food groups using GDQS consumption categories (Bangladesh)

Females

Males

Adolescents





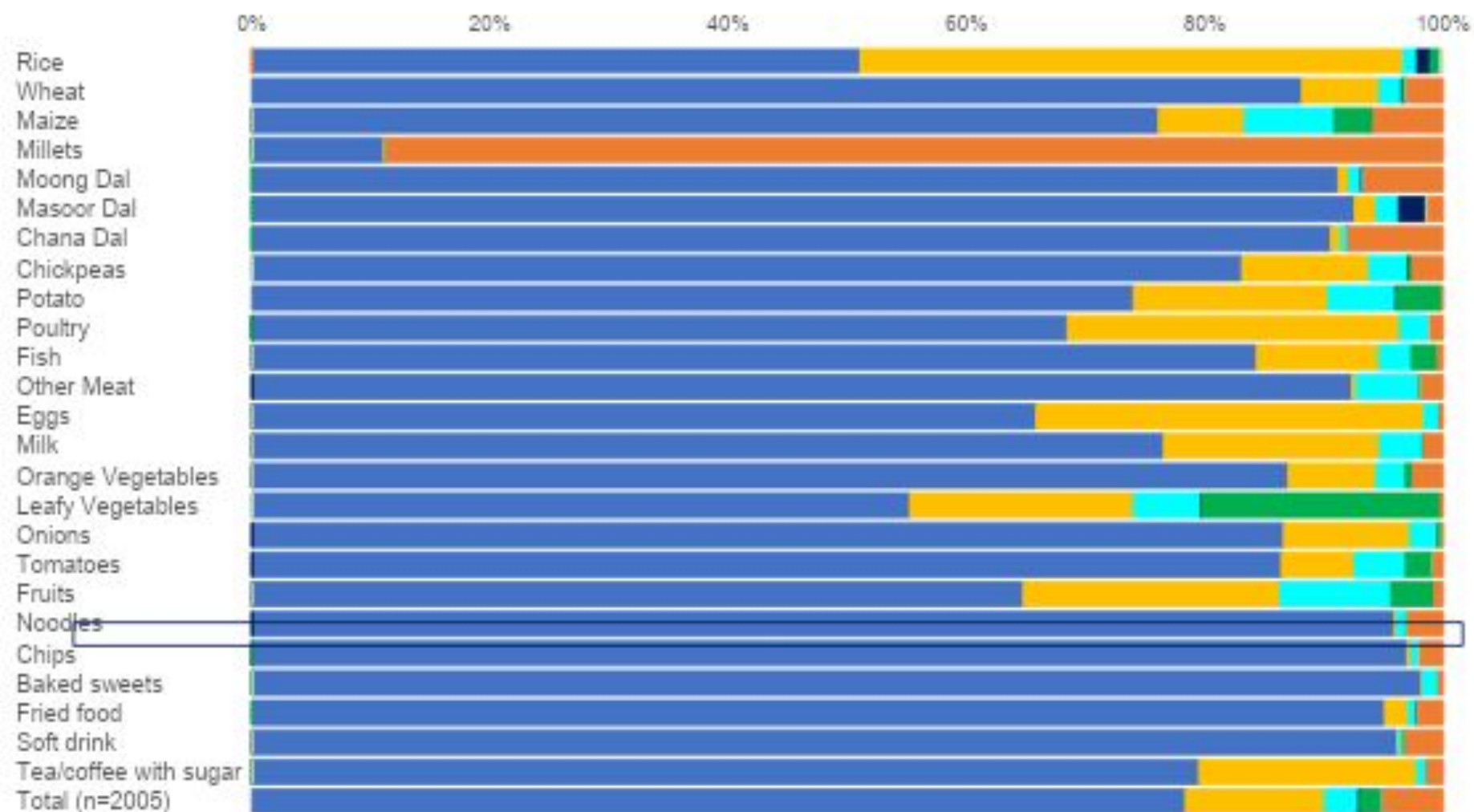
## Sources of sentinel food items

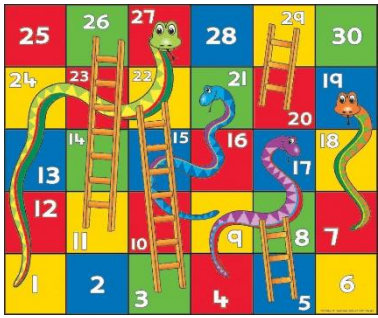
(Q.B3\_2 Where does your household get \_\_\_\_ from)



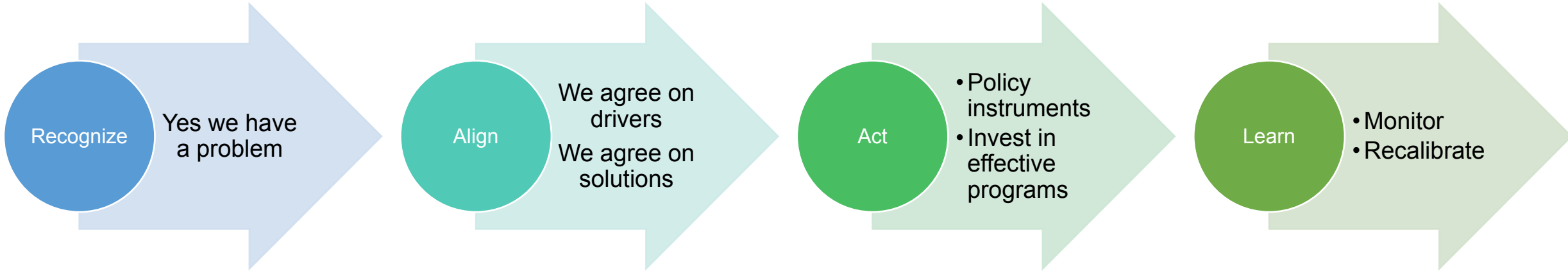
Transforming  
Agrifood Systems  
in South Asia

■ Purchased from outside ■ Own produce ■ Received from others ■ Received from govt ■ Gather/forage ■ Other ■ Never





# Food systems: We are just at the beginning



# Summary

- Malnutrition – in all forms – is a challenge across India and South Asia but there are success stories as well
  - Rising burdens of overweight, hypertension and stagnating anemia are all substantial challenges for the 2020s
- Healthy [and sustainable] diets are an important driver of all forms of malnutrition but challenges abound in achieving healthy diets for all
- Data – on a full range of issues related to food and food systems – is crucial to moving forward on the food and nutrition agenda but is limited both in availability, accessibility and content
- Available data can help but ensuring that discourse is data-grounded is essential



# Researchers can play a critical role in connecting the dots between data, evidence and policy



## What can researchers who care about supporting policy communities do?

- ❖ Stay grounded in data and evidence
- ❖ Embrace complexity
- ❖ Align - not just my science
- ❖ Be available, be pro-active
- ❖ Connect, bring others in
- ❖ Recognize our limited power but never give up
- ❖ Invest in teaching and learning from policy actors

## What can the policy community do?

- ❖ Stay informed
- ❖ Engage and listen to researchers and invest in data
- ❖ Institutionalize processes to absorb the fullness of evidence and data

