

Adolescents' diets and aspirations in Nalanda, India

*Food consumption, task
allocation, and future
aspirations*

Data Note 10

December 2023

ABOUT THIS DATA NOTE | 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 with gender as a cross-cutting issue in rural areas of Bangladesh, India, and Nepal. It is designed to be a multi-year assessment. The survey was conducted only in households with adolescents (10-19 years of age). Adolescents and their behaviors are important when studying food systems because current practices and experiences can have long-term, intergenerational consequences. Using data collected in March-April 2023, this data note describes adolescents' diets and future aspirations. This is one of a set of data notes that, together, provide a holistic picture of the agrifood system in the district.

Figure 1. District location in India

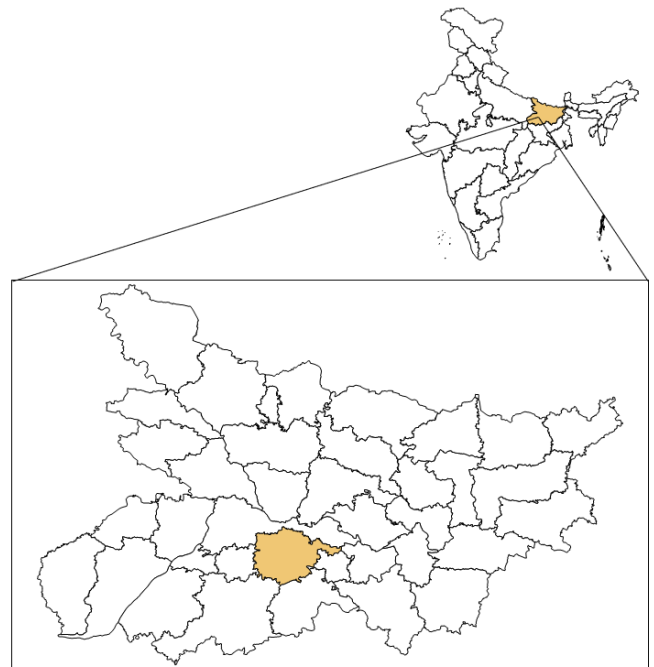


Figure 2. Highlights from this data note



83%

Girls & boys
attending
school or
college



<16%

Adolescents
consumed
fruits the
previous day



50% & 54%

Girls & boys
exposed to
packaged
foods/drinks
advertisements



29% & 40%

Girls & boys
involved in
working in the
field



8% & 10%

Girls & boys
who wanted to
primarily do
farming in the
future

OVERVIEW OF CONTENTS

TAFSSA's district agrifood systems assessment aimed to interview three respondents per household: a female adult (aged 20+ years), a male adult (aged 20+ years), and an adolescent (aged 10-19 years). Information on the household and respondent sampling strategy is provided at the end of this data note.

In this data note, you will first find information on background characteristics of the households and adolescents (by sex). This is followed by information on *what* adolescents eat, which was captured using the Global Diet Quality Score (GDQS) and a food frequency questionnaire. You will also learn about adolescents' *perceptions* on food choice.

In addition, you will find information on adolescents' exposure to food advertisements as well as nutrition messages, and the sources of such information. The data note then delves into adolescents' involvement in various tasks, and their perceptions of those tasks.

Finally, you will get an insight into adolescents' aspirations, beginning with their preferences regarding working in agriculture in the future, followed by their preferences for future occupations and their parents' expectations. More details about the measurement methods are found in the following pages.

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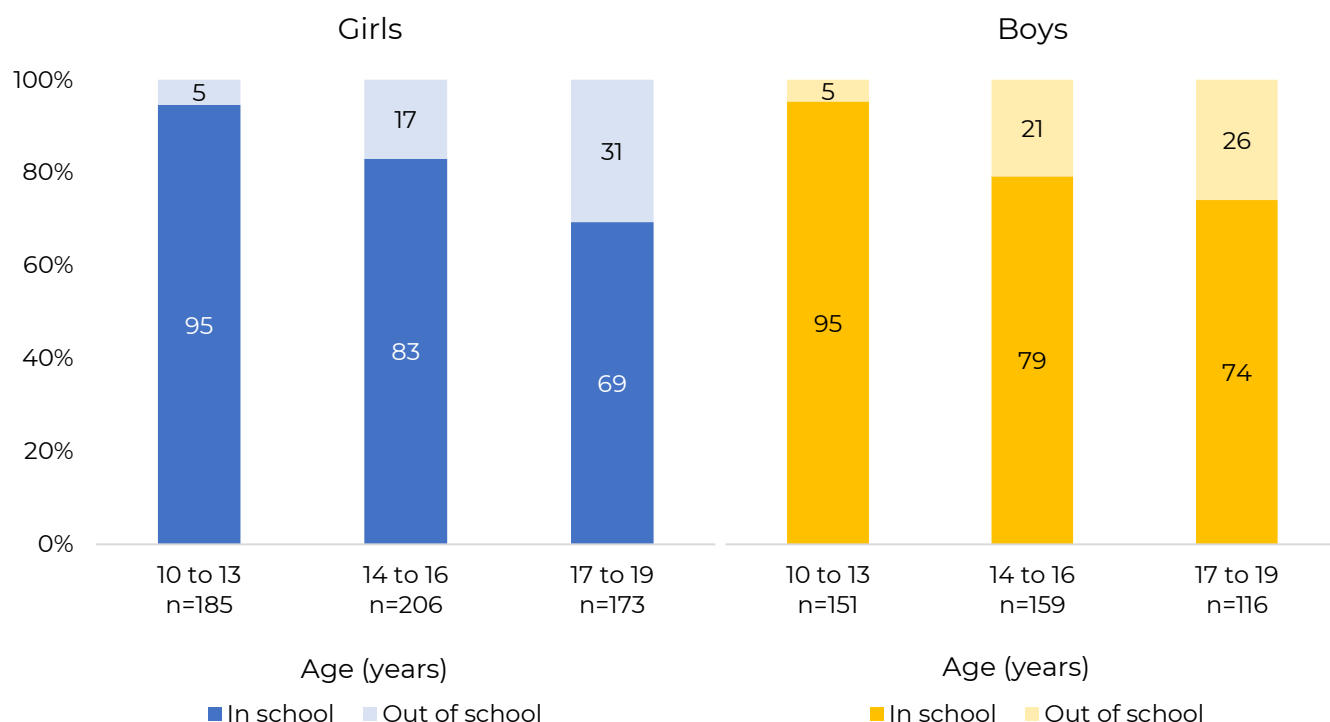
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Table 1. Household and individual characteristics

Household characteristics		Individual characteristics		
			Adolescent girls	Adolescent boys
Number of surveyed HHs (n)	1000			
Female-headed, %	27	Number	566	431
Education of head, yrs, mean	5	Age, yrs, mean (range)	15 (10-19)	14 (10-19)
Average household size, members	6	Currently in school, %	83	83
Involved in agriculture, %	82	Public, %	86	78
Has improved toilet, %	41	Private, %	14	22
Drinking water source		Received school lunch, %	32	28
Piped into dwelling, %	39	Married, %	6	1
Tube well or borehole, %	36	Age of first marriage, yrs, mean	13	12
Main source of income		Parents who expect at least one of their children to be in farming in the future, %		34
Crop cultivation, %	39			
Wages, %	31			
Remittance, %	12			
Type of fuel used for cooking				
Dung cake, %	87			
LPG/natural gas, %	77			
Wood, %	60			

Figure 3. Percentage of surveyed adolescents attending school or college and out of school, by age

GLOBAL DIET QUALITY SCORE | The Global Diet Quality Score (GDQS) application was used to conduct a 24-hour dietary recall, which also captured when (at what eating occasion – pre-breakfast, breakfast, a snack between breakfast and lunch, dinner, etc.) people ate each food item. The survey participants were asked about everything they ate or drank on the previous day, from the time they woke up until the time they went to bed and did not eat or drink anymore. This includes all snacks and foods or drinks consumed at home and outside the home. The foods consumed were classified into 25 food groups – 16 healthy food groups, 2 food groups that are unhealthy when consumed in excess (red meat and high-fat dairy), and 7 unhealthy food groups.

On the following pages, the figures show how many times per day adolescent girls and boys eat (**Figure 4**), the percentage of adolescents eating at various eating occasions (**Figure 5**), the percentage of adolescents who consume various food groups (**Figure 6**), and the quantity consumed by food group (**Figure 7**).

Figure 4. Mean number of eating occasions per day for adolescents

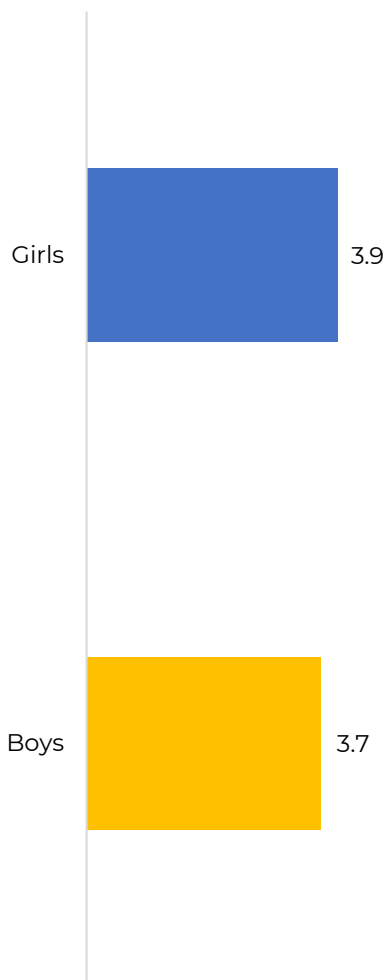
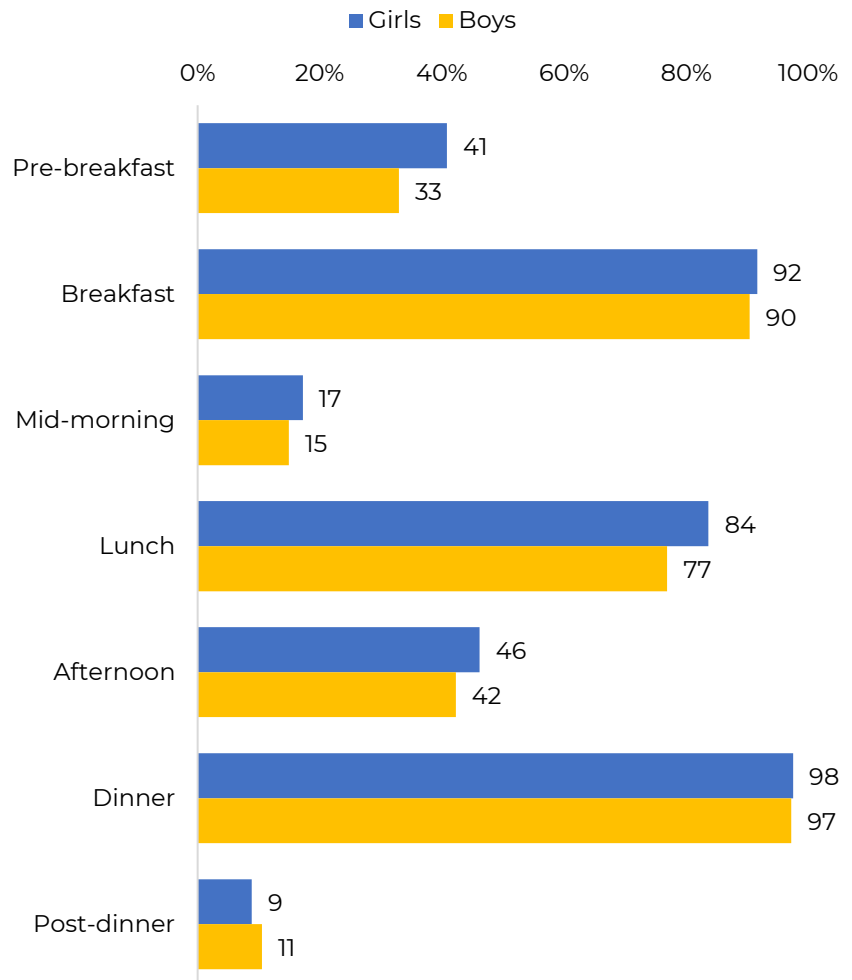
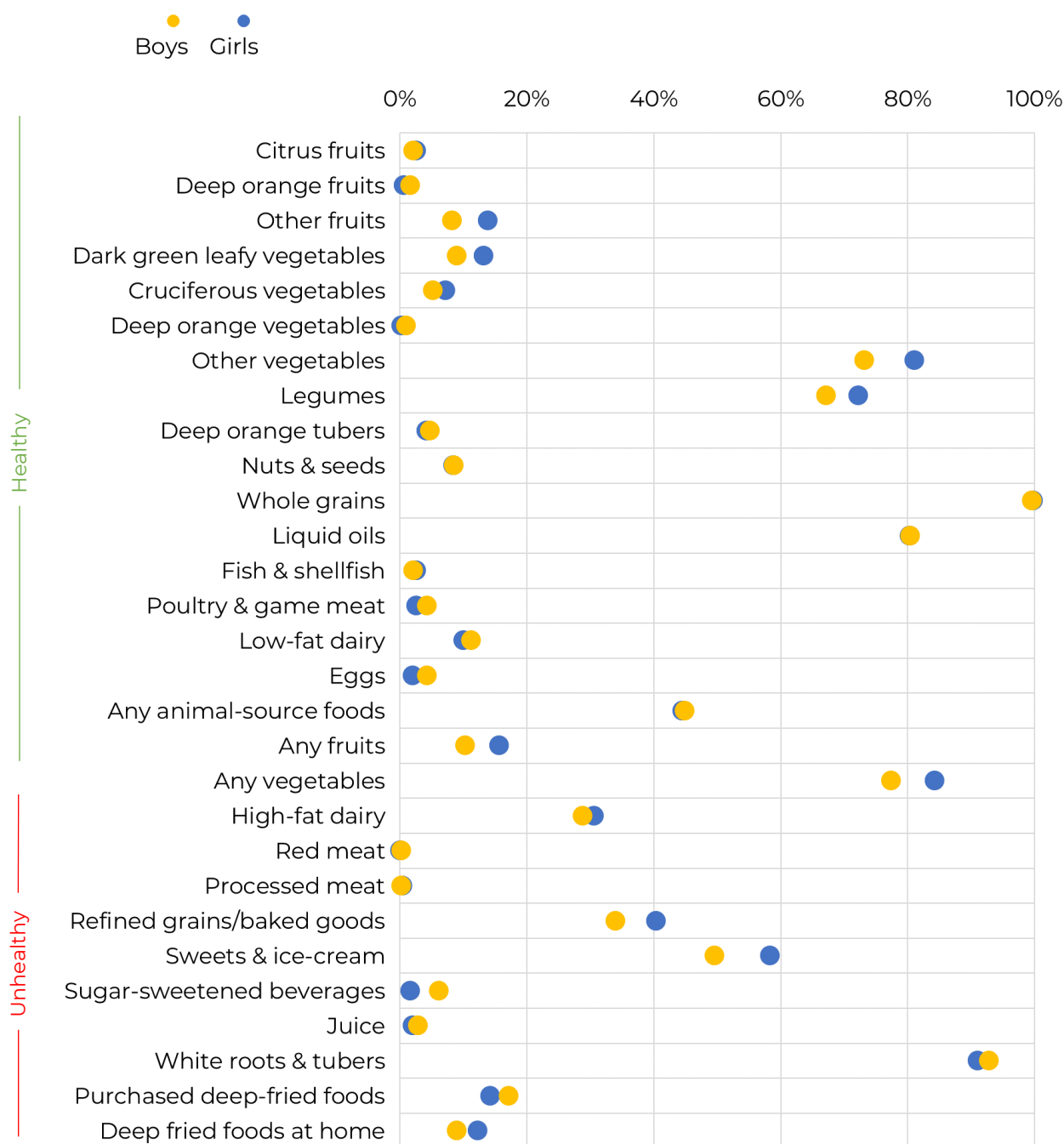


Figure 5. Percentage of adolescents eating at various eating occasions



FINDINGS

- ✓ Boys and girls shared similar patterns related to eating occasions, with nearly all consuming at breakfast and dinner.

Figure 6. Consumption of GDQS food groups by adolescents on previous day**FINDINGS**

- ✓ Less than 16% of boys and girls consumed fruits.
- ✓ High-fat dairy was the most commonly consumed animal source food, and around 45% of adolescents consumed any animal-source food on the previous day.
- ✓ Most of the adolescents consumed whole grains, and white roots & tubers.

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

Figure 7. Percent of adolescents consuming low, medium, and high amounts by GDQS food group**FINDINGS**

- ✓ Few adolescents consumed “high” quantities of healthy foods except whole grains and legumes.
- ✓ Most adolescents consumed “high” quantities of white roots & tubers.

Note: “Low”, “medium”, and “high” describe consumption levels based on quantity consumed that predict noncommunicable disease risk in studies from Africa, Asia, and the Americas (Bromage S, Batis C, Bhupathiraju SN, et al. 2021). Disease risk is minimized when healthy foods are consumed in “high” quantities and unhealthy foods are consumed in “low” quantities.

SENTINEL FOODS | For the food frequency questionnaire, a set of 25 “sentinel foods” were selected to better understand both how frequently these foods are consumed and adolescents' perceptions about these foods.

Sentinel food items were derived from the food groups outlined in the Diet Quality Questionnaire (Uyar BTM, Talsma EF, Herforth AW, et al. 2023). The most commonly consumed food items within each food group were identified by consulting with local people in the district locations during scoping visits.

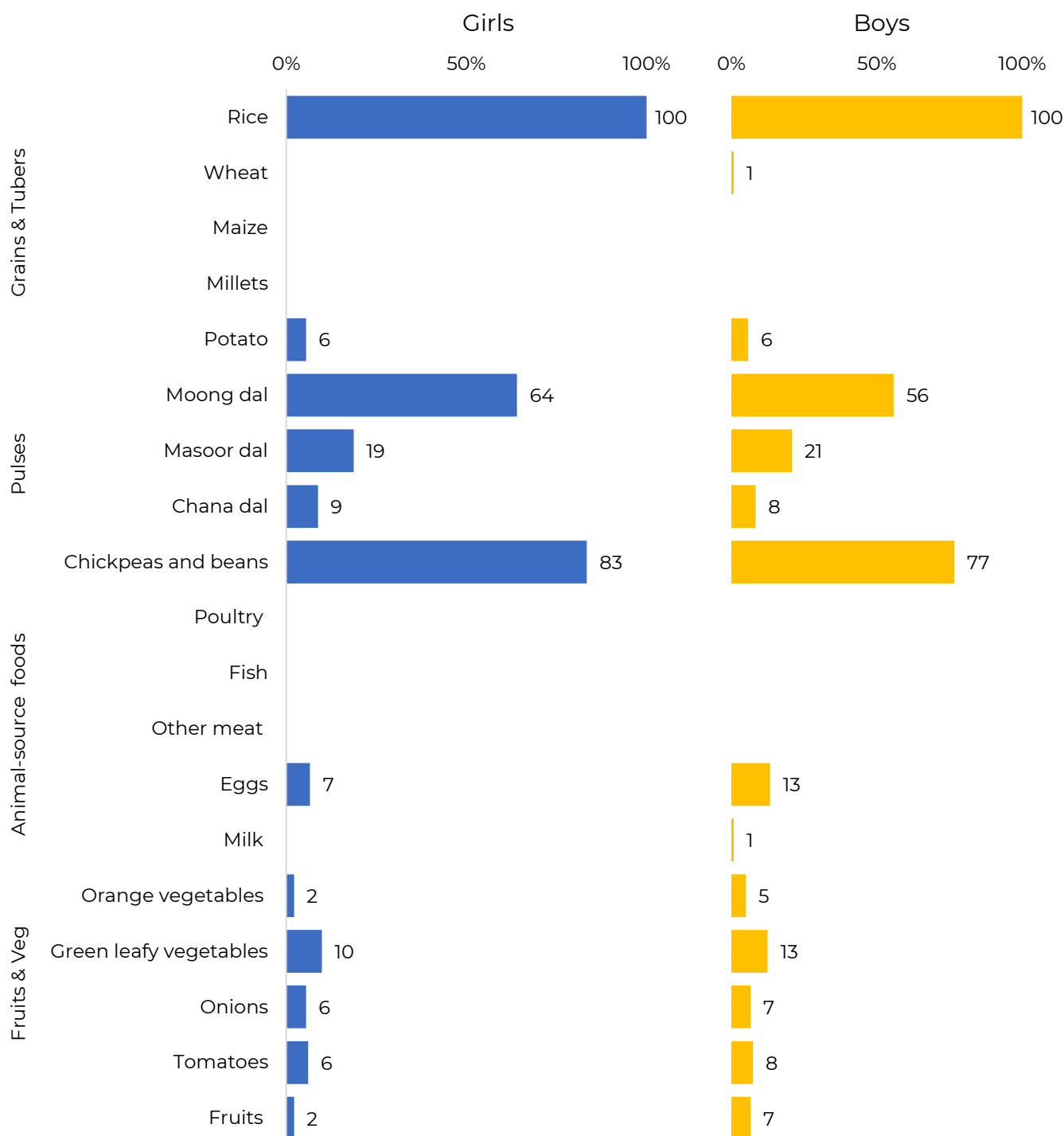
Survey respondents were asked how frequently they consumed these foods in the past 7 days (**Figure 8**). Understanding these patterns provides insights into adolescents' consumption of healthy and unhealthy foods.

SCHOOL LUNCH | Adolescents were asked whether they received a free lunch in school and, if yes, which sentinel foods were received, during their last school day.

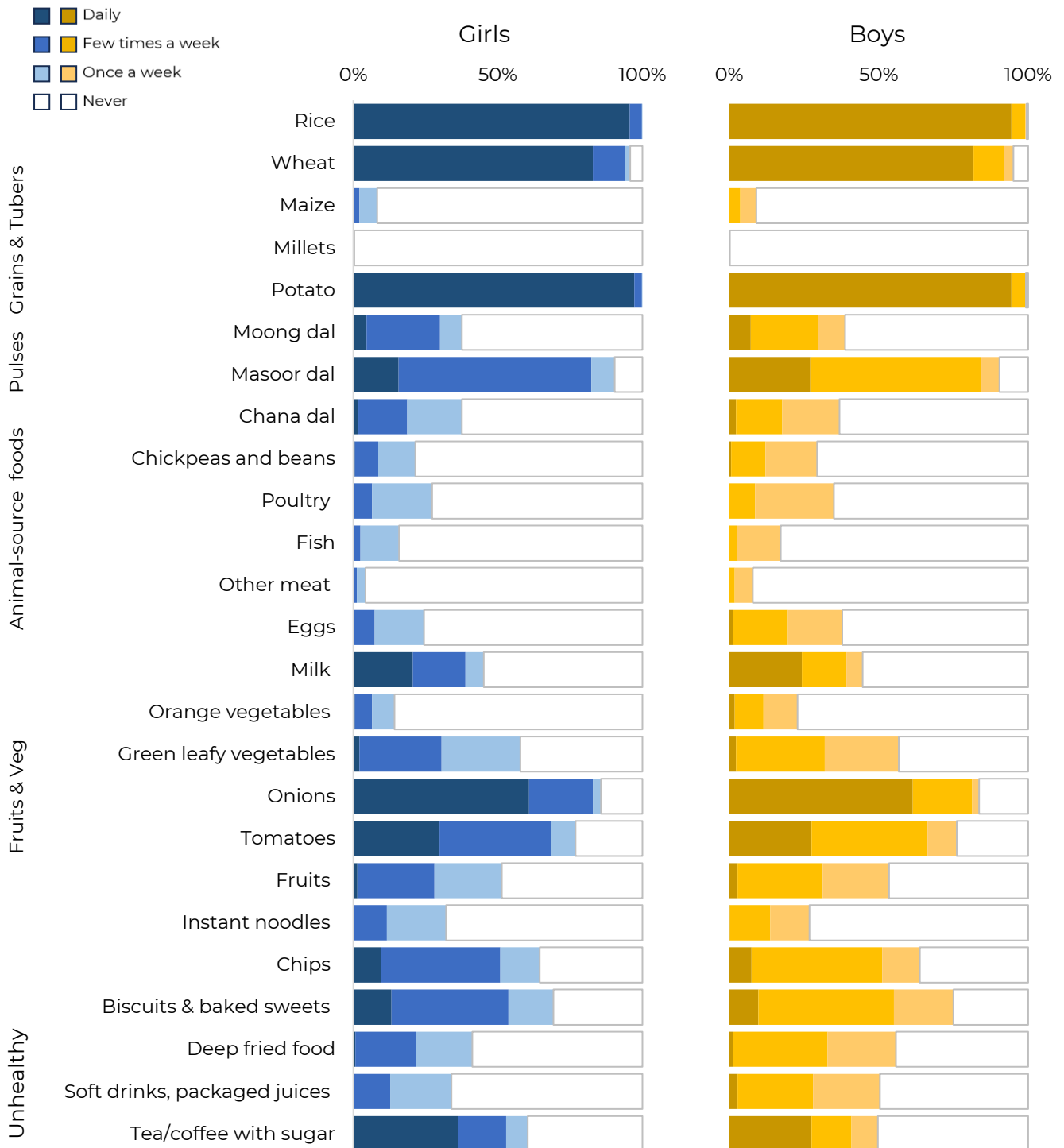


Sentinel food list

1. Rice
2. Wheat
3. Maize
4. Millets
5. Moong dal
6. Masoor dal
7. Chana dal
8. Chickpeas and beans
9. Potatoes
10. Poultry (e.g., chicken, ducks, pigeons)
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

Figure 8. Consumption of sentinel foods by adolescents in last day's school lunch**FINDINGS**

- ✓ Adolescents most commonly received rice, potatoes, and masoor dal in last day's school lunch.

Figure 9. Frequency of consumption of sentinel foods by adolescents in previous 7 days**FINDINGS**

- ✓ Most adolescents consumed rice, wheat, potatoes, and onions daily.
- ✓ Most adolescents consumed masoor dal a few times a week.
- ✓ Many adolescents consumed chips and baked sweets multiple times in a week.

EXPOSURE TO ADVERTISEMENTS AND NUTRITION MESSAGES |

Adolescents' exposure to food advertisements and nutrition messages was measured by asking adolescents whether, in the past 30 days, they had heard or seen:

1. Advertisements for any food or packaged drinks (**Figure 9**)
2. Information about avoiding certain foods such as soft drinks, energy drinks or sweets, biscuits, chips, namkeen, or bhujia (**Figure 11**)
3. Information about eating five different food groups or eating a diverse diet (**Figure 13**)

Additionally, adolescents were asked where they had heard or seen such food advertisements or nutrition messages (**Figures 10, 12, 14**). Understanding the sources of such information can provide insights into the mediums for influencing adolescents' food choices.

Figure 10. Percentage of adolescents who saw or heard advertisements for any food or packaged drinks in the past 30 days

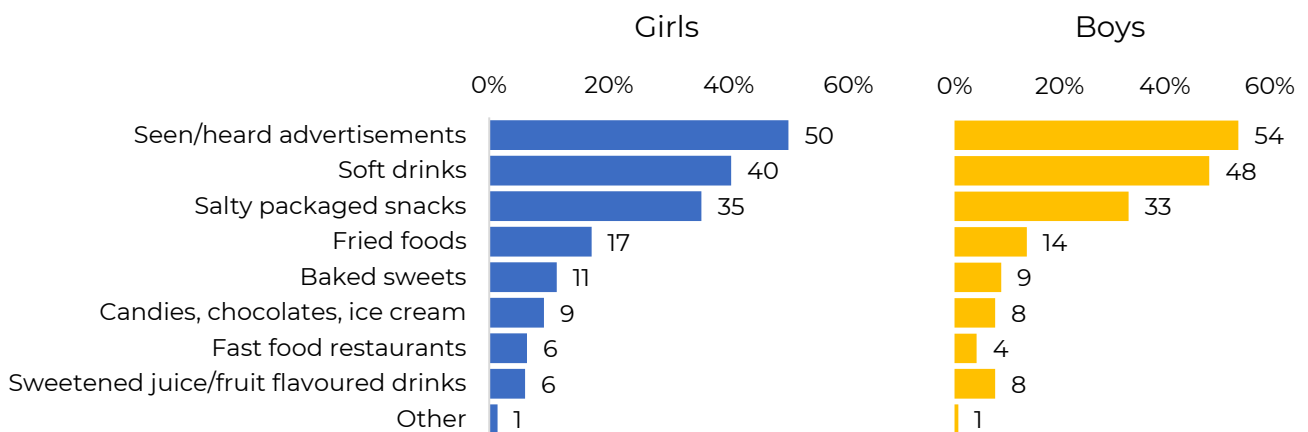
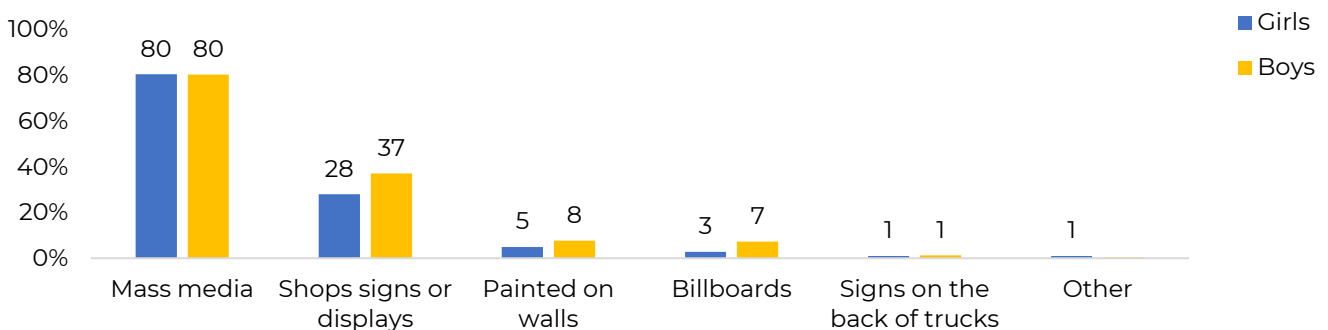


Figure 11. Sources of advertisements



Note: This is calculated among the subsample of adolescents who saw or heard advertisements for any food or packaged drinks in the past 30 days. Mass media includes television, radio, newspapers, posters, and social media.

FINDINGS

- ✓ 50% of girls and 54% of boys had seen or heard advertisements for food/packaged drinks in the last 30 days.
- ✓ Most adolescents reported seeing or hearing advertisements via mass media such as television, radio, newspapers, posters, and social media.

Figure 12. Percentage of adolescents who saw or heard information about avoiding unhealthy foods

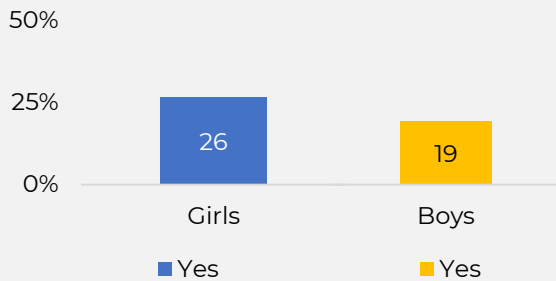
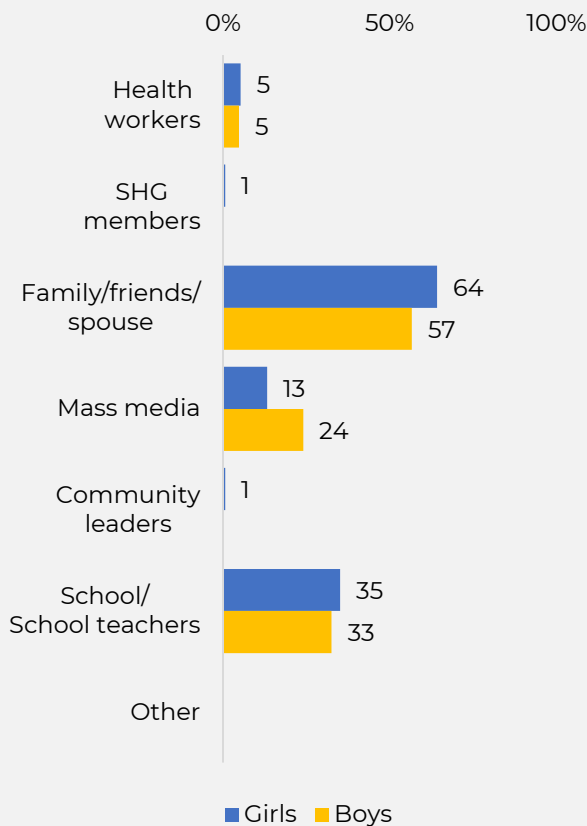


Figure 13. Sources of messages on avoiding unhealthy foods



Note: This is calculated among the subsample of adolescents who saw or heard information about avoiding unhealthy foods. Unhealthy foods include soft drinks, energy drinks, sweets, biscuits, chips, namkeen, and bhujia. Mass media includes television, radio, newspapers, posters, and social media

Figure 14. Percentage of adolescents who saw or heard information about consuming a diverse diet

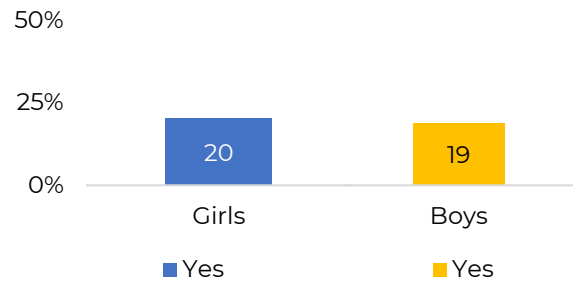
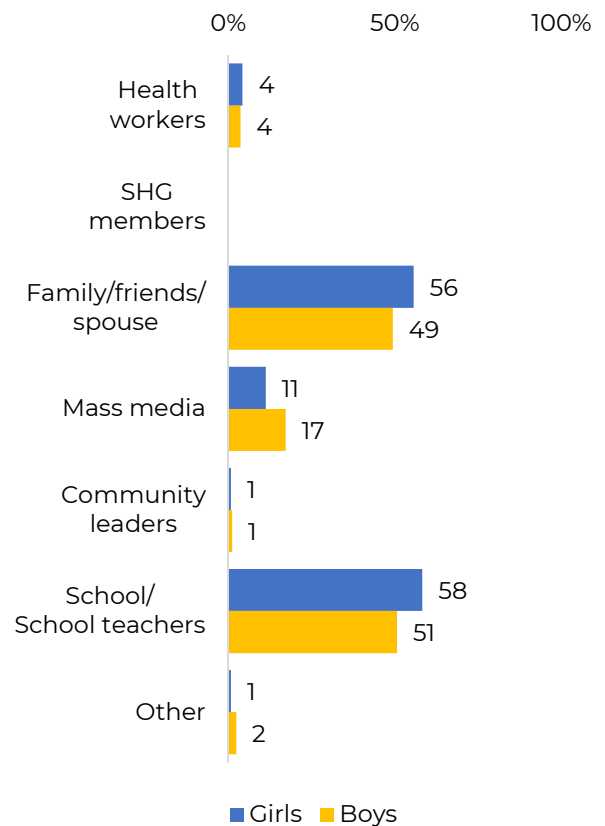


Figure 15. Sources of messages about consuming a diverse diet



Note: This is calculated among the subsample of adolescents who saw or heard information about consuming a diverse diet. Mass media includes television, radio, newspapers, posters, and social media

FINDINGS

- ✓ Less than 27% of adolescents had seen or heard information about avoiding certain foods or consuming a diverse diet in the last 30 days.



Adolescents' exposure to advertisements

40% of girls and 48% of boys had heard or seen advertisements about soft drinks

TASK ALLOCATION | To understand the role of adolescents in various agricultural and non-agricultural tasks, they were asked questions about their involvement in specific tasks. They were asked *which* agriculture-related activities they are involved in (**Figure 15**) and *how often* they carry out these activities (**Figure 16**).

A parent of each adolescent was asked which household members do different types of tasks. The proportion of households where an adolescent was involved in each task was identified. Further, the involvement of adolescent girls and boys in tasks related to agriculture, food, and other domestic work (**Figure 17**) was examined.

Figure 16. Percentage of adolescents involved in agriculture-related tasks (reported by adolescents)

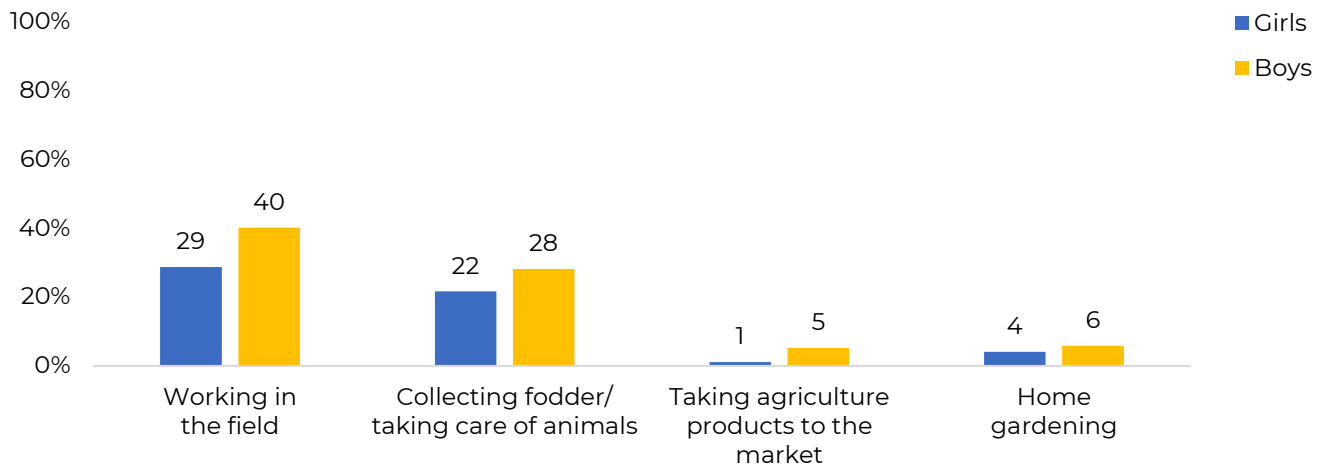
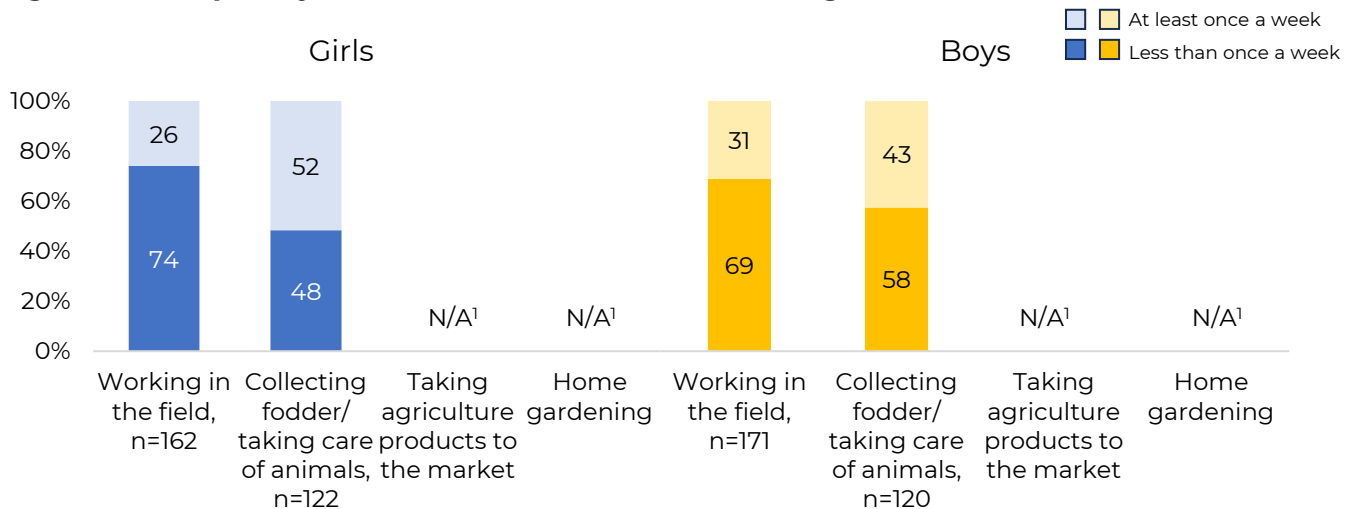


Figure 17. Frequency of adolescents' involvement in agriculture-related tasks

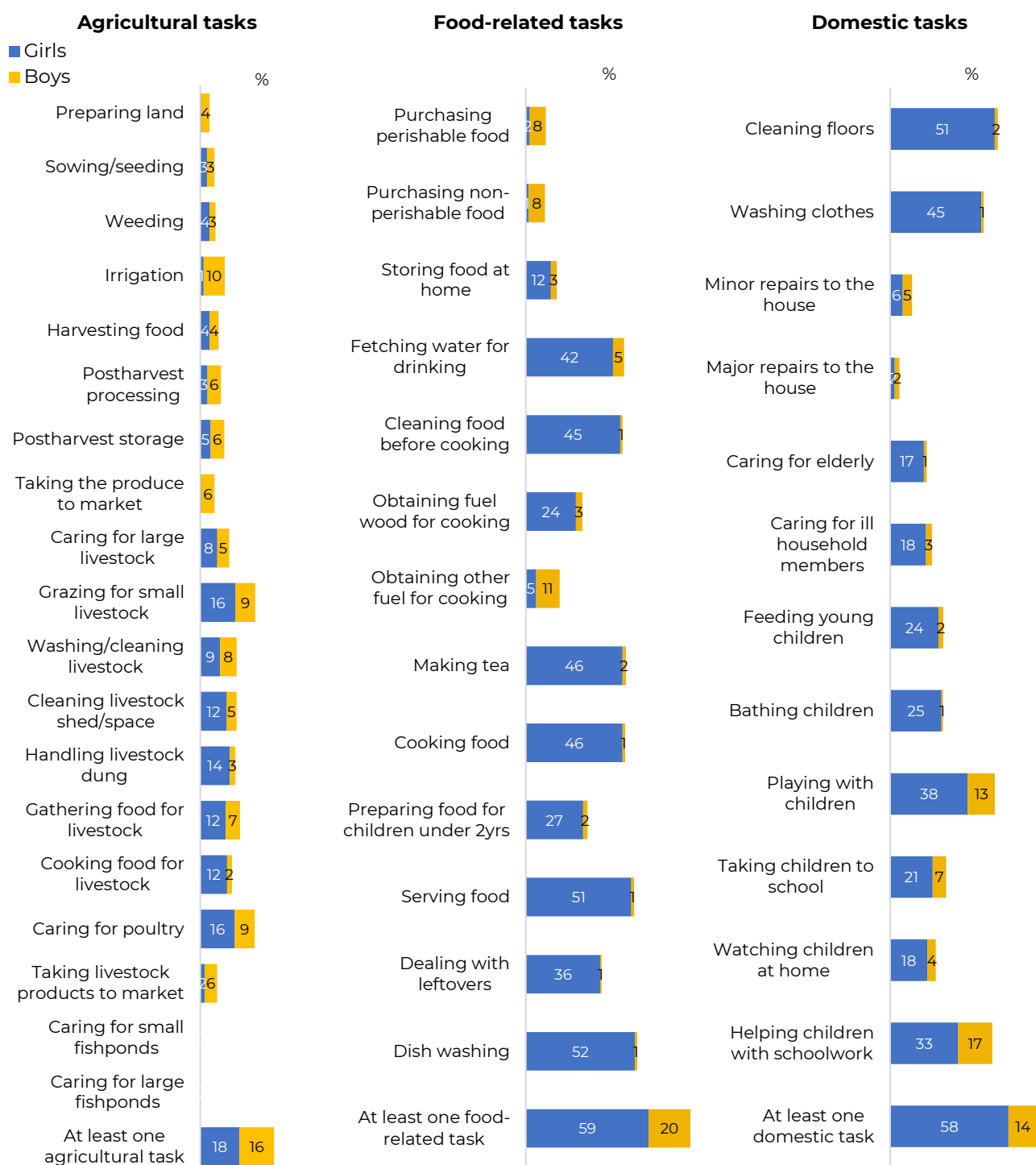


Note: This is calculated among the subsample of adolescents who are involved in each agriculture-related task.

FINDINGS

- ✓ A higher percentage of adolescent boys than girls were involved in working in the field and collecting fodder/taking care of animals.
- ✓ Girls are less frequently involved in taking agriculture products to the market than boys.

¹Not applicable (N/A): Data not shown as sample size was too small.

Figure 18. Percentage of adolescents involved in various tasks (reported by adult females)**FINDINGS**

- ✓ Few adolescents were involved in agricultural tasks (less than 19% girls and boys).
- ✓ A higher percentage of girls were involved in all food-related and domestic tasks than boys.



Adolescents' involvement in household tasks

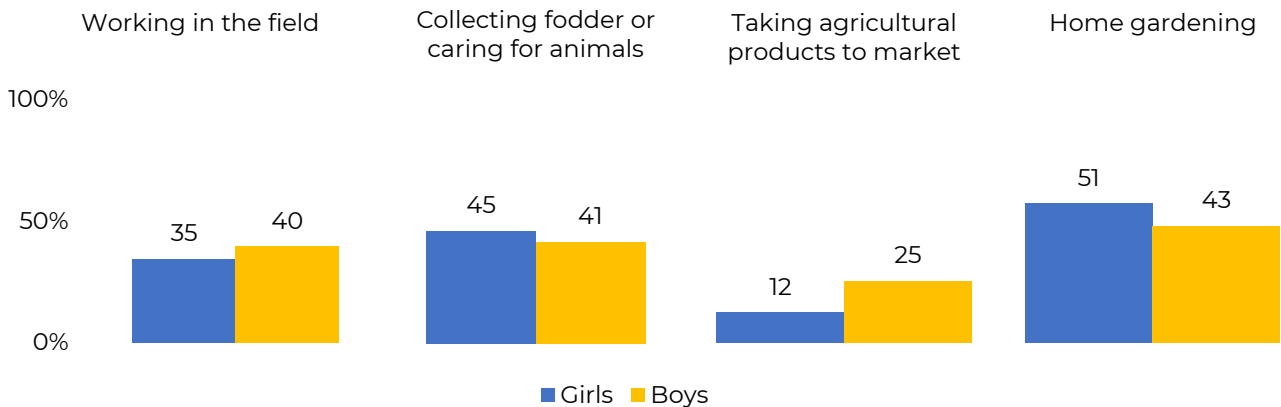
18% of girls and 16% of boys were involved in agriculture tasks, 59% and 20% in food related tasks, 58% and 14% in domestic tasks

TASK PERCEPTIONS & FUTURE ASPIRATIONS | Adolescents' perceptions about different agricultural tasks were measured by asking whether they liked, disliked, or felt neutral about these tasks (**Figure 18**).

Adolescents' aspirations were measured by asking them about what kind of work they would *prefer* to engage in for earning money in the future. This provides an insight into whether adolescents want to be involved in agriculture in the future (**Figure 19**). This is important to understand as adolescents constitute the next generation of producers.

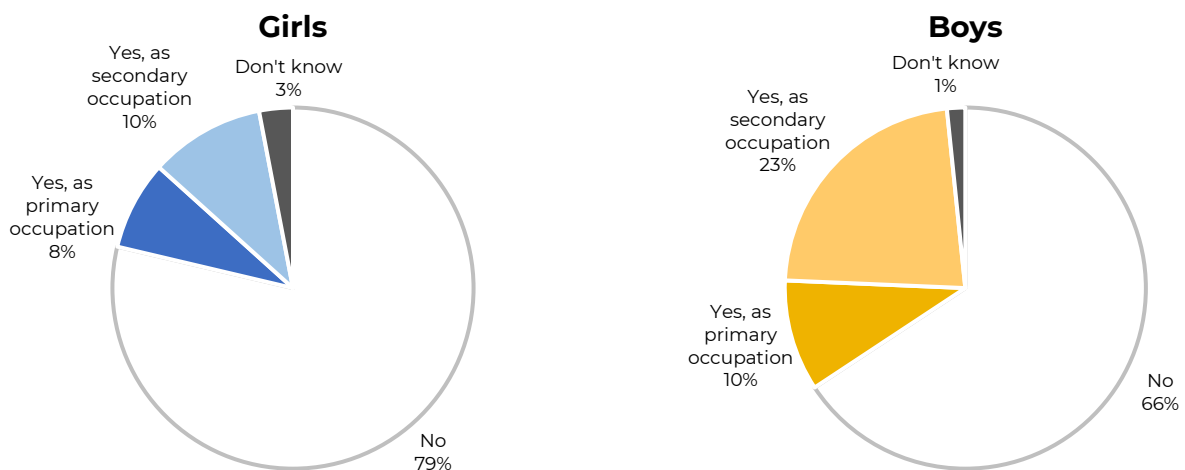
Finally, adolescents were asked about what occupation they aspire to and would prefer to engage in, in the future. Adolescents' aspirations were compared with parents' expectations for their children (**Figure 20**).

Figure 19. Percentage of adolescents who like various agriculture-related tasks



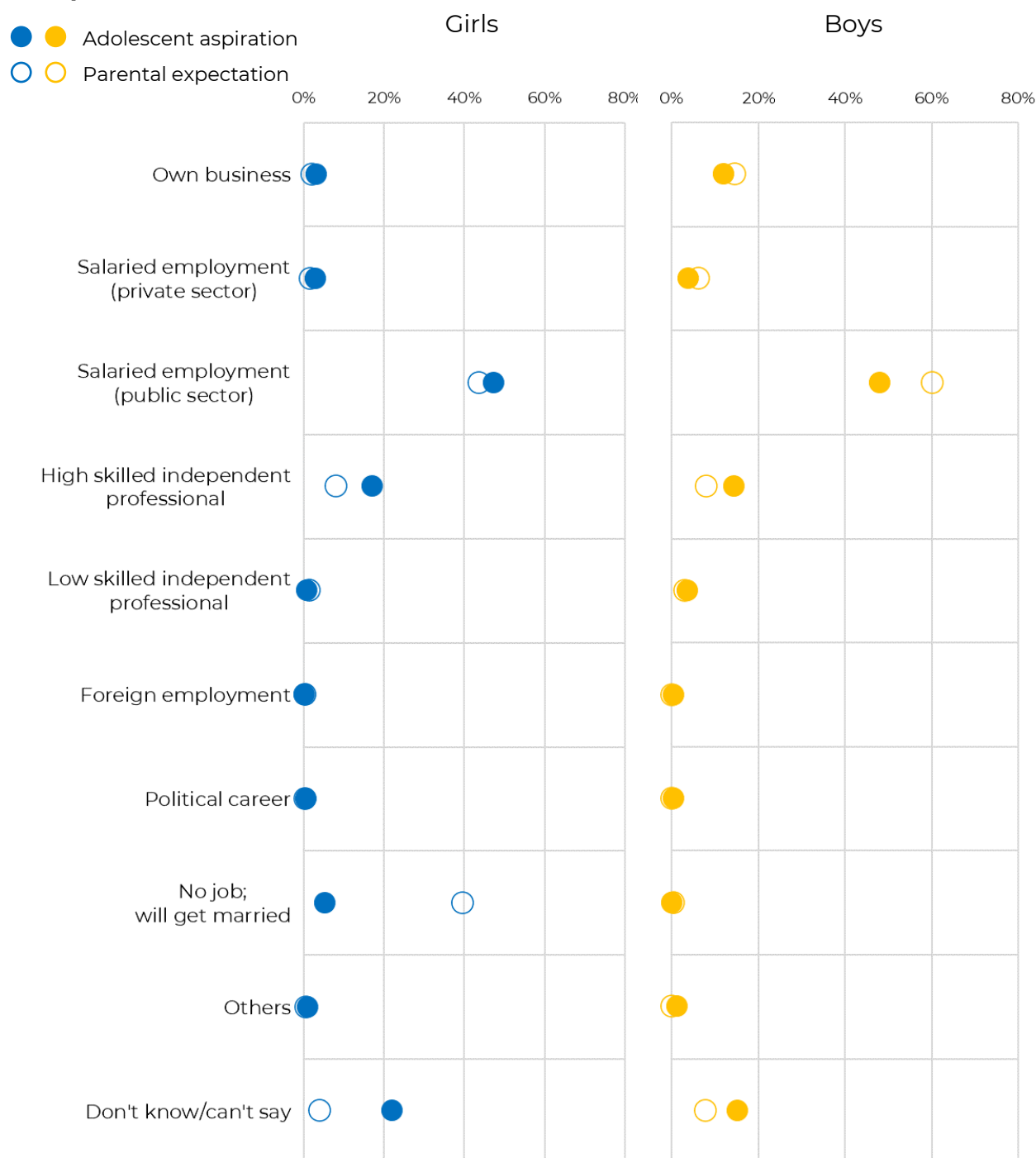
Note: This is calculated among the subsample of adolescents who are involved in each agriculture related task.

Figure 20. Adolescents' preferences regarding taking up farming as their future occupation, %



FINDINGS

- ✓ Most adolescents liked home gardening.
- ✓ Less than 11% of adolescents wanted to take up agriculture as their future primary occupation.

Figure 21. Adolescents' preferences vs. parents' expectations for their future occupation

Note: Parents' expectations are calculated among the subsample of 66% parents who do not expect at least one of their children to be in farming in the future.

FINDINGS

- ✓ Most girls and boys preferred salaried employment in the public sector as their future occupation.
- ✓ Around 39% of parents expected their female children to get married without remunerative employment.
- ✓ Similar patterns of future aspirations were expressed by girls and boys.



Parent's expectations for adolescents

39% of parents expected their adolescent daughters to be married and unemployed in the future, while most parents expected their sons to be salary employed

KEY TAKEAWAYS

1. Around 83% of adolescent girls and boys are in school or college.
2. A very low percentage of adolescents consumed fruits, while a high percentage consumed white roots and tubers.
3. Adolescents see or hear advertisements for food or packaged drinks mainly from mass media (e.g., television, radio, social media) and shop signs or displays.
4. Few adolescents are involved in agricultural tasks, and girls are more involved in food-related and other household tasks than boys.
5. A very low percentage of girls and boys want to be farmers in the future.

KEY QUESTIONS FOR ACTION

1. How can understanding the sources of food or packaged drinks advertisements compared with the sources of nutrition messages help influence adolescents' food choices?
2. What are a few pathways to ensuring a more equitable task allocation among adolescent girls and boys?
3. What are the barriers to uptake of farming as a future occupation?

SURVEY METHODOLOGY

Village and household sampling

We selected 25 villages in the district with a probability proportional to the number of households that reside in each village. Within each village, we conducted a household listing to identify eligible households, that is, those with adolescents (10-19 years old). From the households with adolescents, we randomly invited 20 households to participate in the survey. If a household refused, we replaced that household with another randomly selected eligible household, to retain a total of 1000 households in the district. Thus, the findings reported in this data note are representative of rural households from this district that include an adolescent.

Respondent selection

Within households, one adult female aged 20+ years, one adult male aged 20+ years, and one adolescent aged 10-19 years were selected as the respondents for the survey. When multiple adolescents were living in a household, the oldest adolescent was selected. In some households, an adult male was not available (often due to migration for work). In such households, the female was the only adult respondent (see Table 1 for respondent sample sizes). At the beginning of the interview, the adult in the household primarily involved in agriculture (either male or female) and the adult primarily responsible for food purchasing (either male or female) were identified as the primary respondents.

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ABOUT TAFSSA

TAFSSA (*Transforming Agrifood Systems in South Asia*) is 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.

ABOUT CGIAR

CGIAR is a global research partnership for a food secure future. Visit <https://www.cgiar.org/research/cgiar-portfolio> to learn more about the initiatives in the CGIAR research portfolio

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