

# Agricultural production and use in Rangpur, Bangladesh

*Crop, homestead, livestock, fish  
cultivation and use*

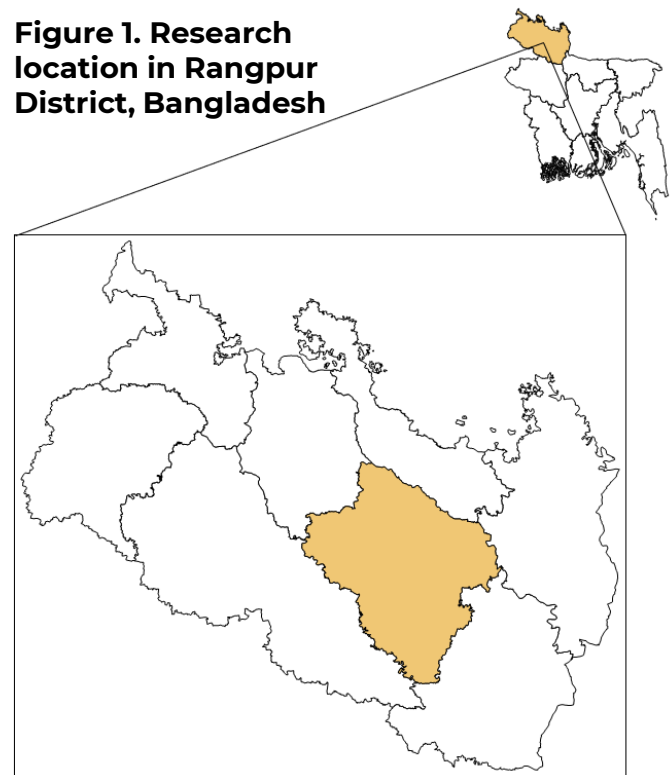
Data Note 46

December 2023

## ABOUT THIS TAFSSA DATA NOTE

The TAFSSA district food systems assessment aims to provide a reliable, accessible integrated evidence base that links farm production, market access, dietary patterns, climate risk responses, natural resource management in Bangladesh, India, Nepal. It is intended to be a multi-year assessment. This data note summarizes data collected in February-March 2023 to describe what smallholder farmers are cultivating what they do with the farm products produced. It is part of a pack of data notes that, together, provide a holistic picture of the food system in the district. The survey methodology is briefly summarized in the penultimate page of this data note.

**Figure 1. Research  
location in Rangpur  
District, Bangladesh**



**Figure 2. Highlights from this data note**



**0 ha**

44% of surveyed  
households  
report they own  
no agricultural  
land



**96%**

Households  
involved in  
agriculture



**89%**

Maximum  
contribution to  
household  
income from  
cropping



**5.2 t/ha**

Median wet  
season (kharif II)  
rice yield  
reported by  
households



**Rice, potato,  
maize**

Most produced  
crops

## AGRICULTURAL PRODUCTION DATA NOTE OVERVIEW

This data note summarizes information provided by households in Rangpur District in Bangladesh. It starts with a general overview of agricultural productivity, followed by more detailed information on crop production, the use and sale of crops, livestock and livestock-derived food production, and the use and sale of animals and animal products. Finally, information is provided on households' production of "sentinel foods." These are 25 commonly consumed foods or food groups whose production and consumption are being tracked across the TAFSSA Initiative's learning landscapes throughout South Asia.

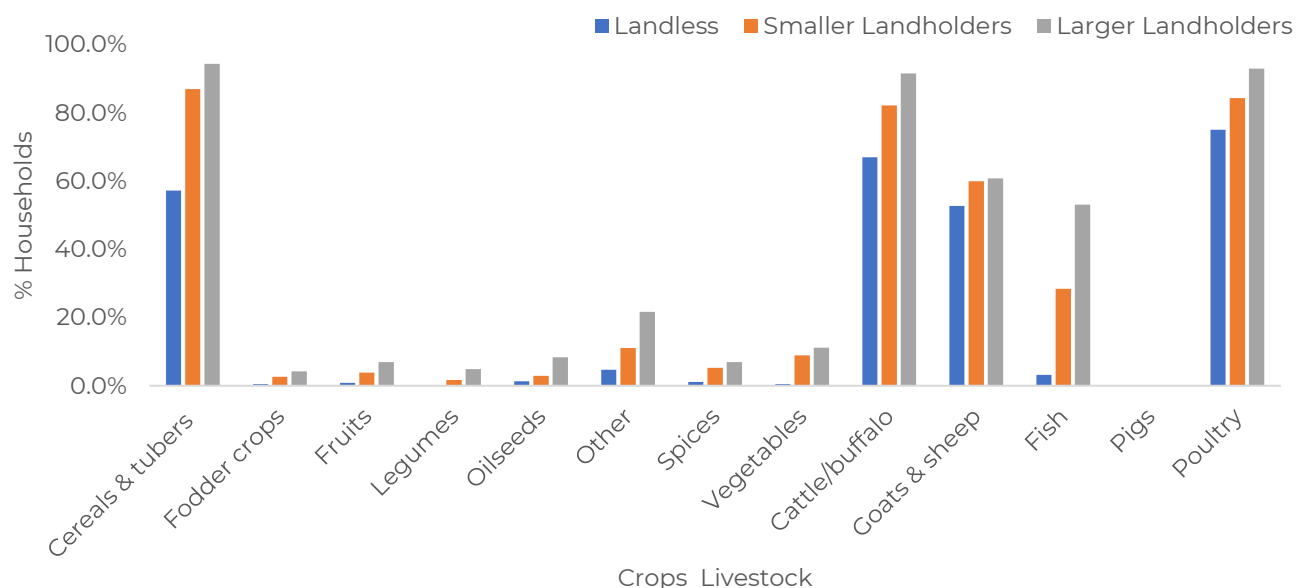
Households have been categorized into three groups based on landholding size. Of the surveyed households, 44.2% of households own no land are referred to here as "Landless," and 41.5% of surveyed households own between 0 and 0.5 hectares and are considered "Smaller Landholders." The remaining 14.3% of surveyed households own more than 0.5 hectares, and are termed "Larger Landholders."

**Table 1. Key characteristics of each household group**

Household group	Landholding size	Proportion of total households	Proportion engaged in agriculture	Proportion owning land	Proportion where women own land
Landless	0 ha	44.2%	40.5%	0.0%	4.1%
Smaller Landholders	0-0.5 ha	41.5%	41%	100.0%	9.1%
Larger Landholders	> 0.5 ha	14.3%	14.1%	100.0%	5.8%
Total	n/a	100%	96.0%	55.8%	19.0%

- ✓ Around 90% of households with land produce cereals and tubers. The majority of these households (at least 60%) also produce ruminants and poultry.
- ✓ Larger Landholder households produce more of each type of crop than Landless or Smaller Landholder households. Over half of Larger Landholder households (53.1%) also produce fish.
- ✓ More Landless households (67.0%) rear cattle/buffalo and poultry (75.1%) than produce crops (57.2%).

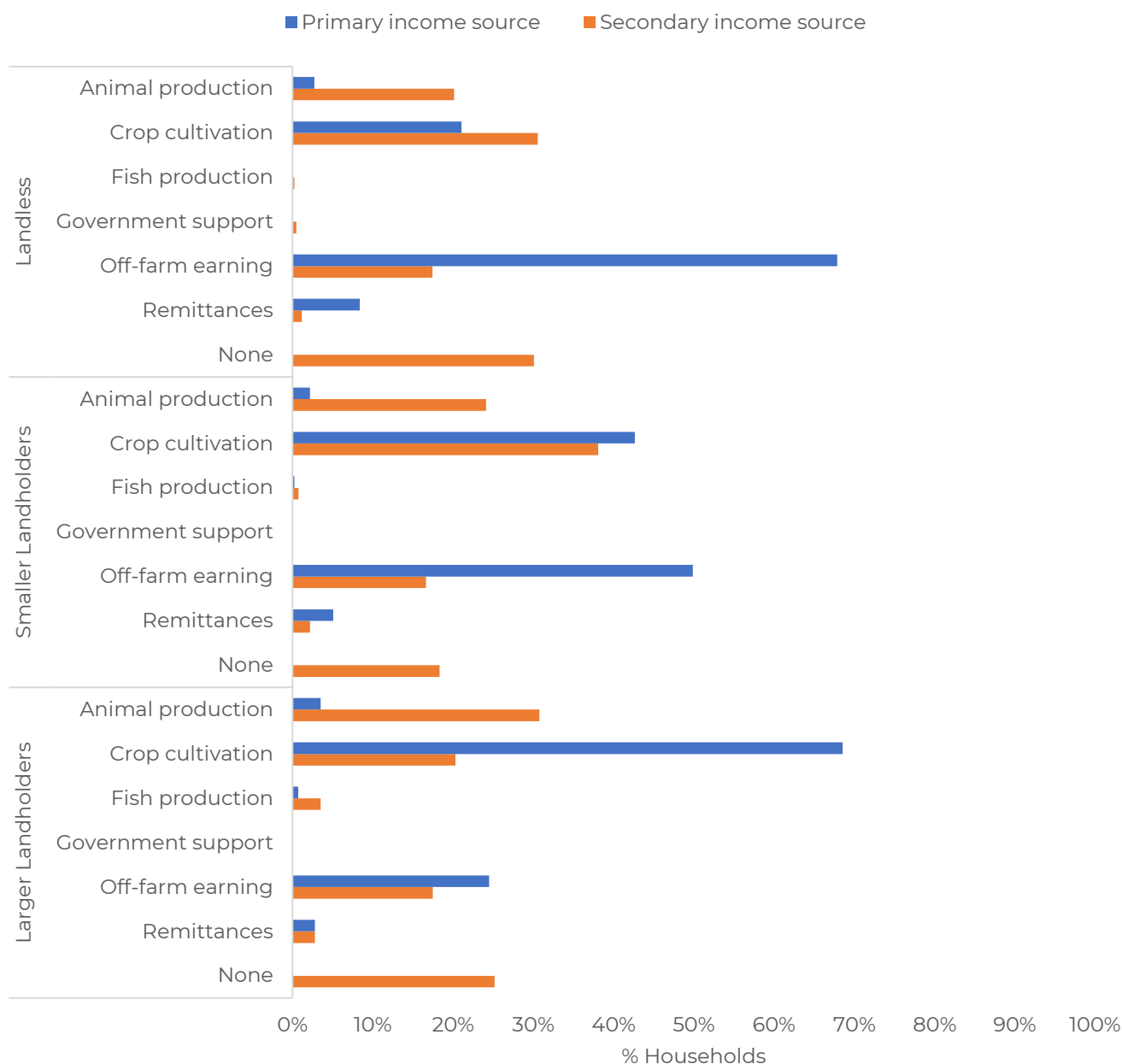
**Figure 3. Crop production and livestock ownership in each household group**



## HOUSEHOLD INCOME SOURCES

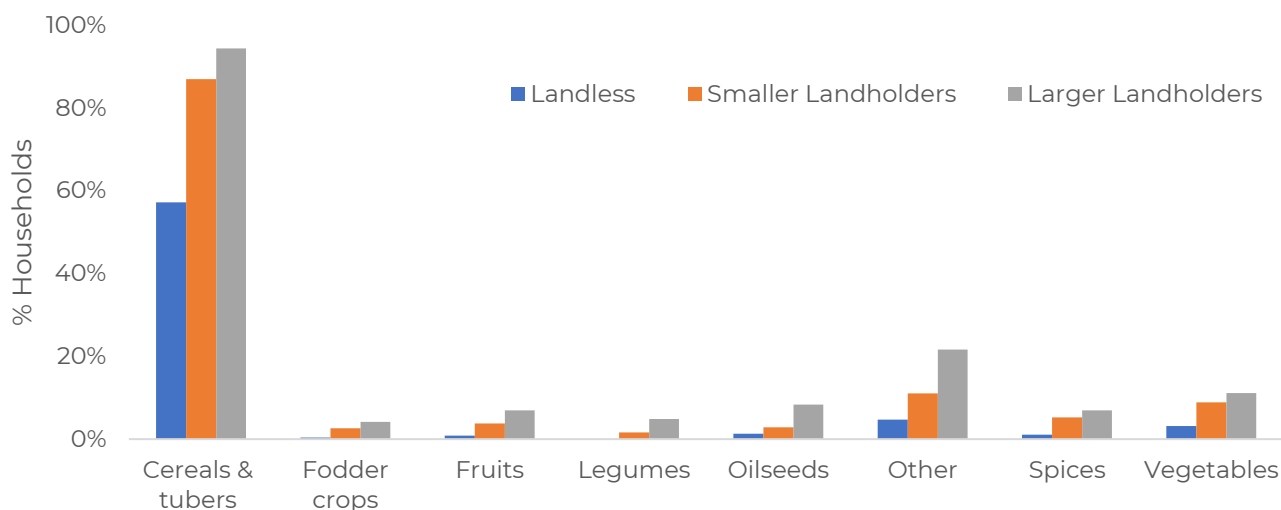
- ✓ Crop cultivation is the primary income source for two-thirds of Larger Landholder households (68.5%).
- ✓ Smaller Landholder households rely on crop cultivation (42.7%) and off farm income (49.9%) for primary income.
- ✓ Most Landless households (67.9%) rely on off farm earnings for primary income, with crop cultivation (30.5%) the largest secondary income source.
- ✓ Animal production is a secondary source of income for 20.1% of Landless households, 24.1% of Smaller Landholder households, and 30.8% of Larger Landholder households.

**Figure 4. Primary and secondary sources of income in each household group**



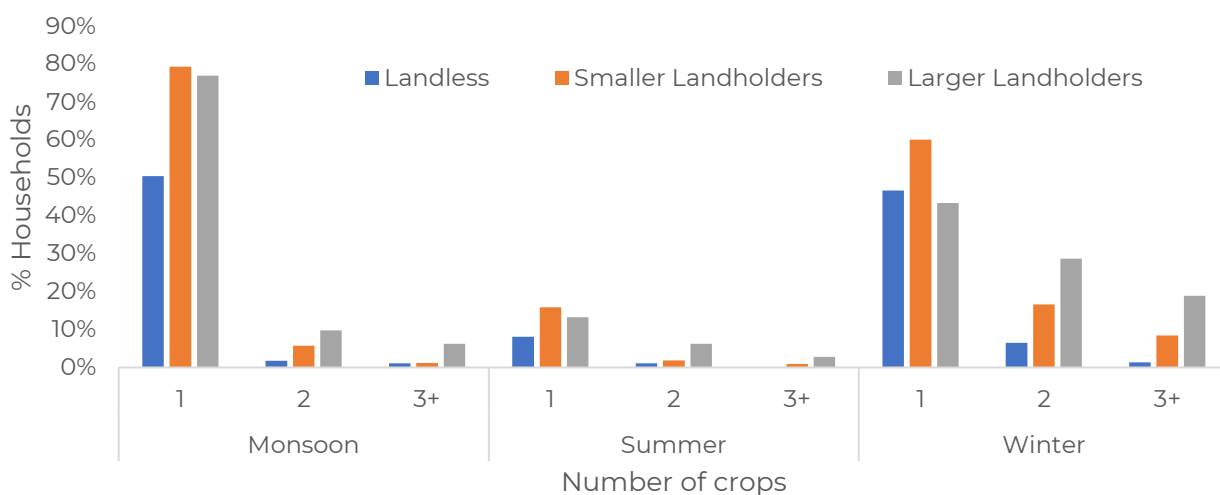
## CROP PRODUCTION

**Figure 5. Production of major crops by each household group**



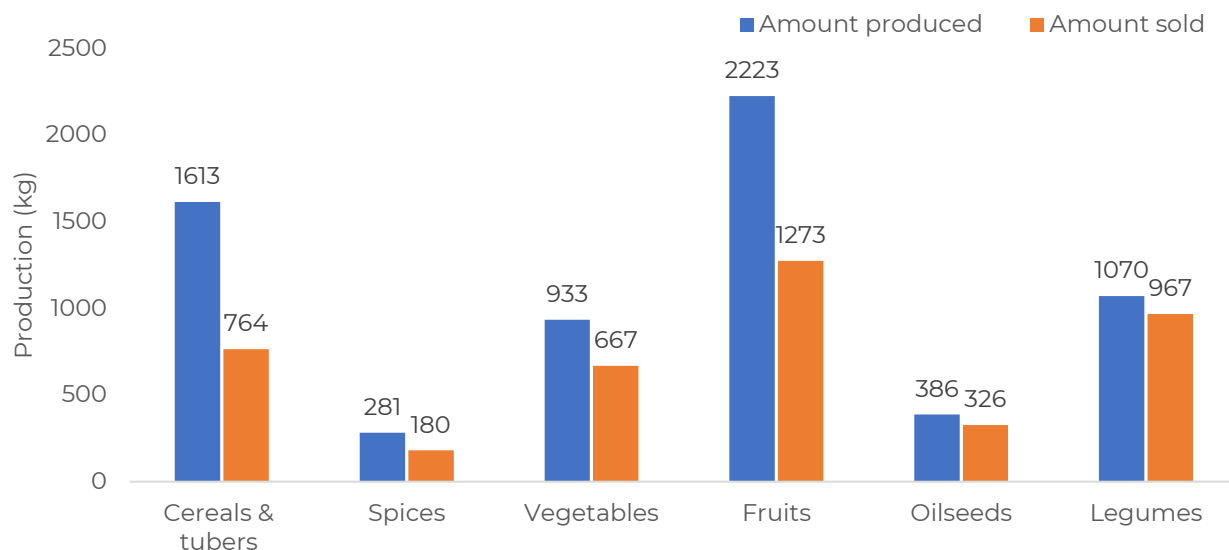
- ✓ Cereals (primarily rice and maize) and tubers (potatoes) are the most widely produced crops in all household groups. Up to 20.7% of households with land produce “Other” crops, which are predominantly cash crops such as jute, sugarcane, and betel leaf.
- ✓ More Larger Landholder households produce crop products in each category than Smaller Landholder or Landless households.
- ✓ Crop production is lowest in the hot and dry summer (kharif I) season and higher in the monsoon (kharif II) and winter (rabi) seasons.
- ✓ In the monsoon season crops are likely to be rainfed, with rice being a key crop primarily grown for home consumption by half or more of households in each group.
- ✓ Larger Landholder households are most likely to grow a greater number of crops in the dry winter season, which suggests access to water resources (irrigation) to facilitate crop growth.

**Figure 6. Number of crops grown each season by each household group**



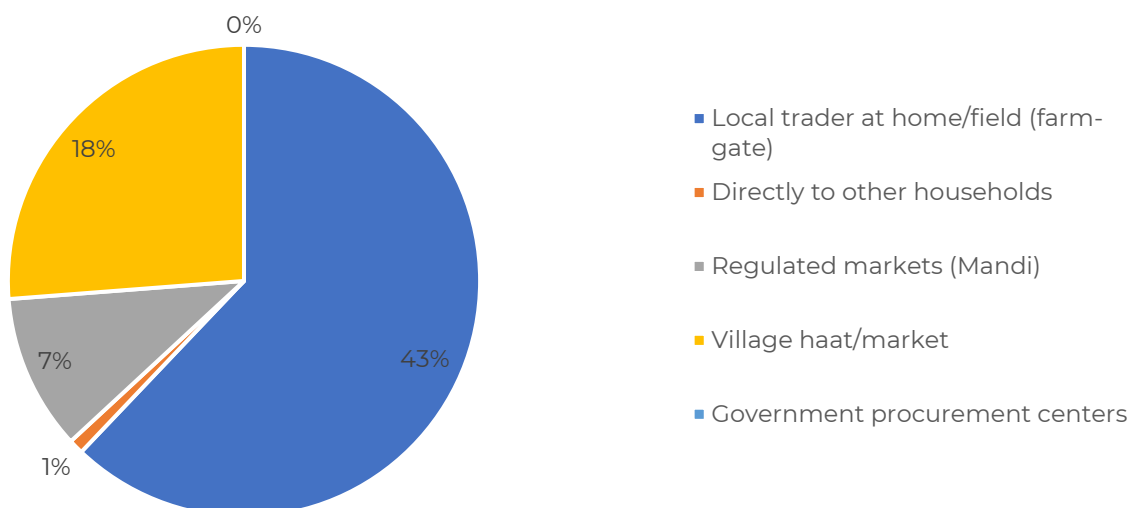
## PRODUCTION AND SALE OF CROP PRODUCTS

**Figure 7. Average annual per-household production and sale of major crop products, for households which sell crop products**



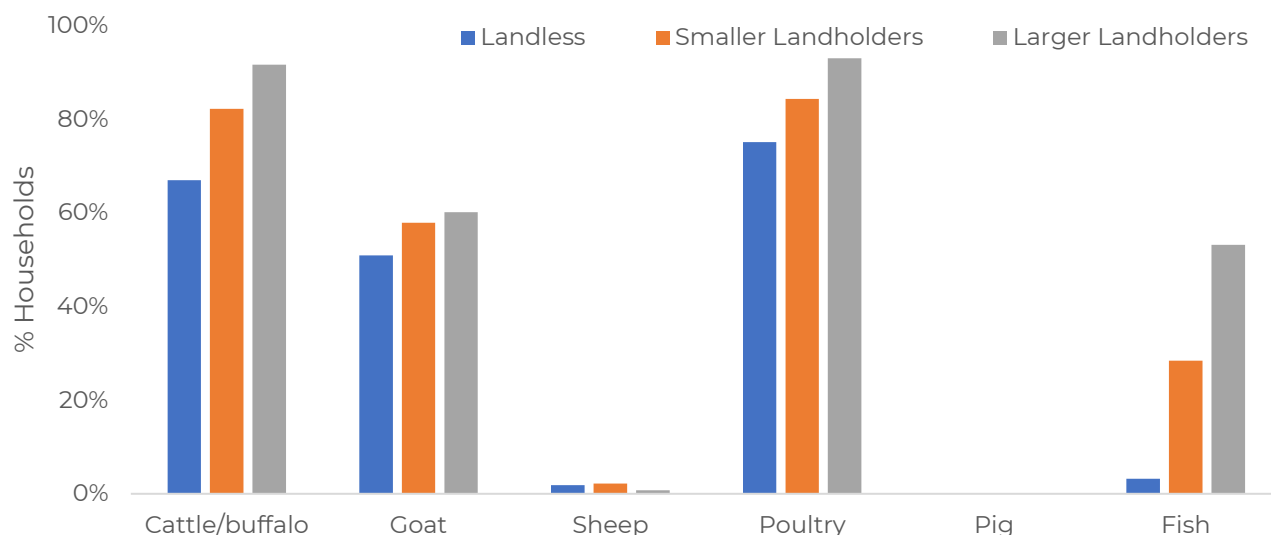
- ✓ Households sell proportionally more legumes (90.4% of amount produced), oilseeds (84.5%), and vegetables (71.5%) than other crop types.
- ✓ Proportionally higher amounts of cereals & tubers (53.0%) and fruits (42.7%) are retained for home consumption.
- ✓ Most households (67%) sell some of their farm products, regardless of farm size (data not shown).
- ✓ When farm products are sold, 43% of households sell to local traders at the farmgate, and 18% sell products in village markets (haats).

**Figure 8. Places where households sell farm products**



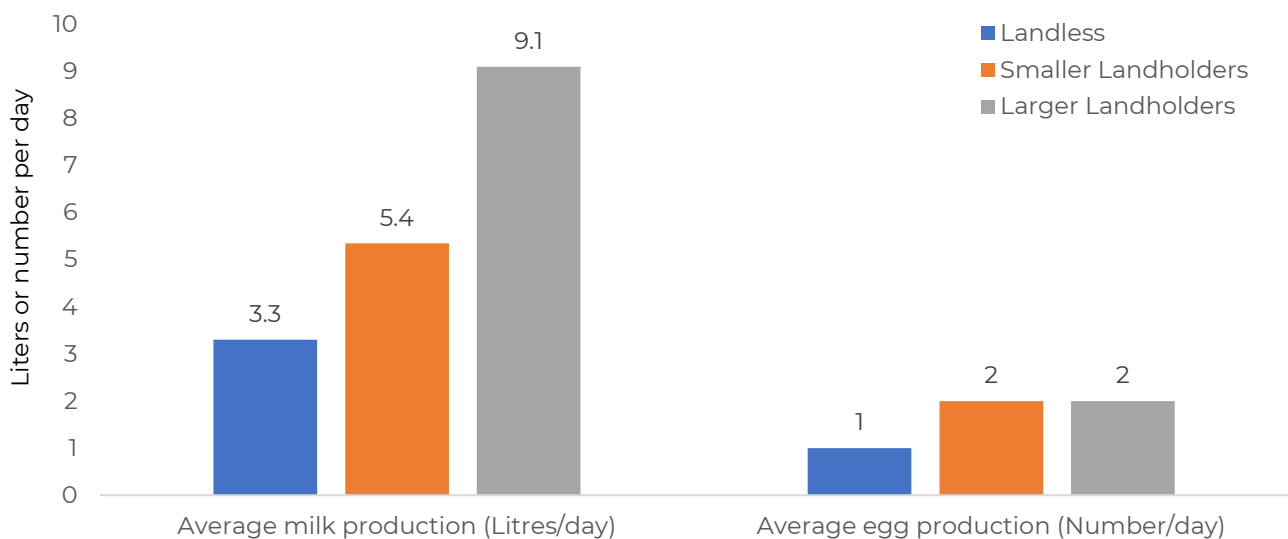
## PRODUCTION OF LIVESTOCK AND LIVESTOCK-DERIVED FOODS

**Figure 9. Livestock rearing in each household group**



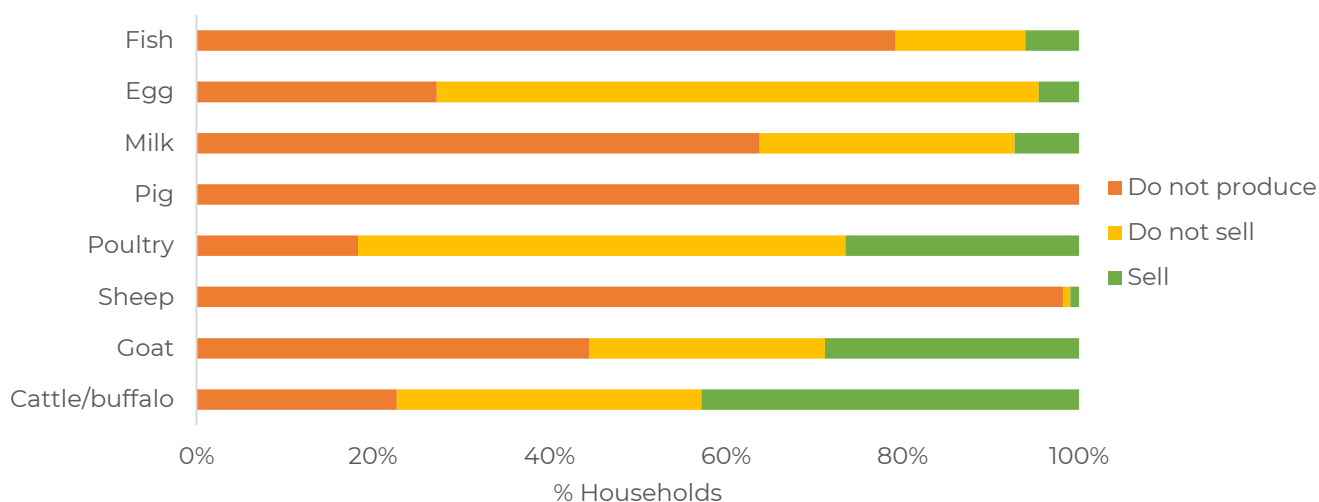
- ✓ Livestock cultivation is widespread: at least 75% of households rear poultry, at least 67% rear cattle/buffalo, and at least 50% of households rear goats.
- ✓ Each livestock type is cultivated by more households with land than by Landless households, with greater numbers of Larger Landholder households owning each of livestock type than Smaller Landholder households.
- ✓ Households with land also cultivate fish, with almost double the number of Larger Landholder households (53.2%) producing fish than Smaller Landholder households (28.4%).
- ✓ Daily average milk production is highest in Larger Landholder households, possibly reflecting the higher quality of feed these households are able to provide to their livestock.
- ✓ Households with land produce double the eggs per day than Landless households, again likely reflecting flock numbers quality of available feed.

**Figure 10. Milk and egg production in each household group**



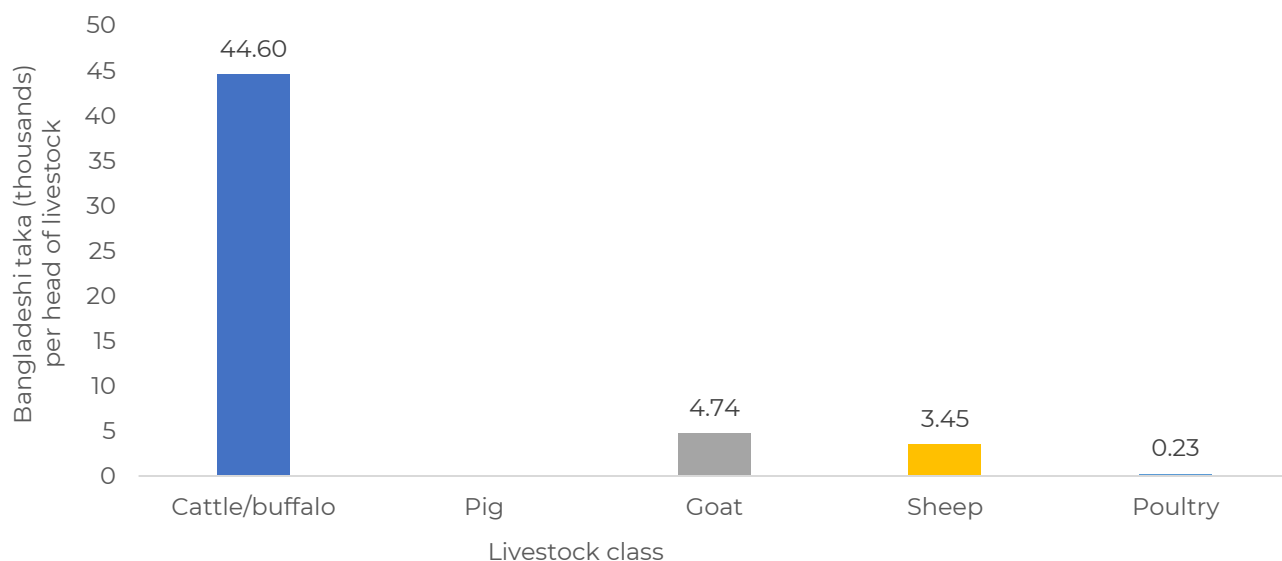
## USE AND SALE OF LIVESTOCK PRODUCTS

**Figure 11. Households producing, selling or retaining livestock products**



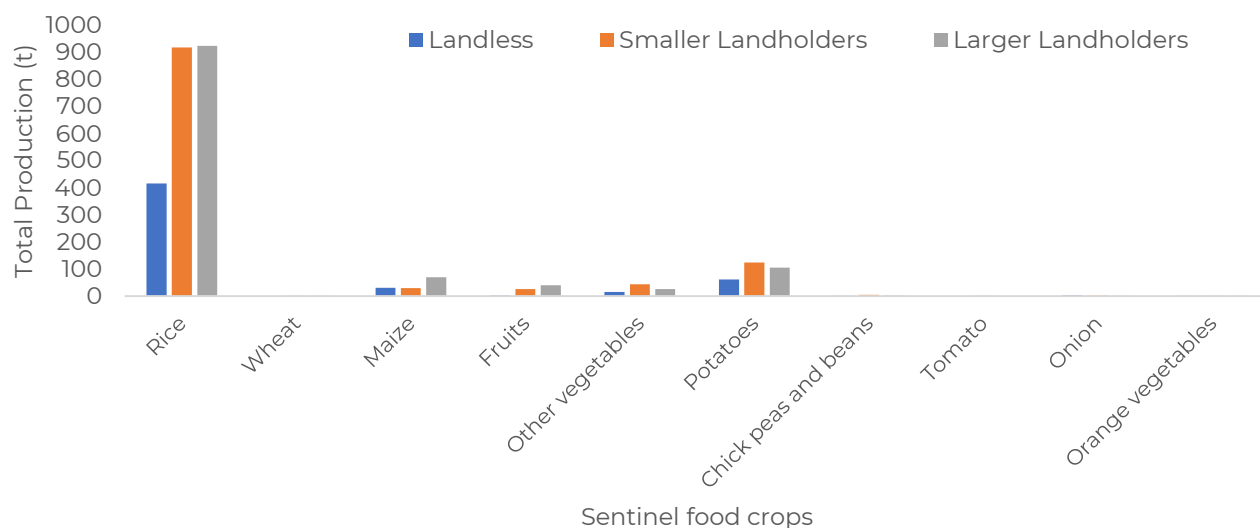
- ✓ Poultry, cattle/buffalo, eggs, and goats are the most commonly produced animal products, produced by 81.7%, 77.3%, 72.8%, and 55.5% of households, respectively.
- ✓ Most households that produce eggs, poultry, and milk consume more than they sell of these products.
- ✓ More households that produce cattle/buffalo sell them than consume them domestically.
- ✓ Goats are consumed at home and sold by approximately the same number of households.
- ✓ Farm gate prices are an order of magnitude higher per head for cattle/buffalo than for goats. Very few sheep and no pigs are traded.
- ✓ Poultry prices are low, and many flocks may be self-replicating.

**Figure 12. Average farm gate livestock prices**



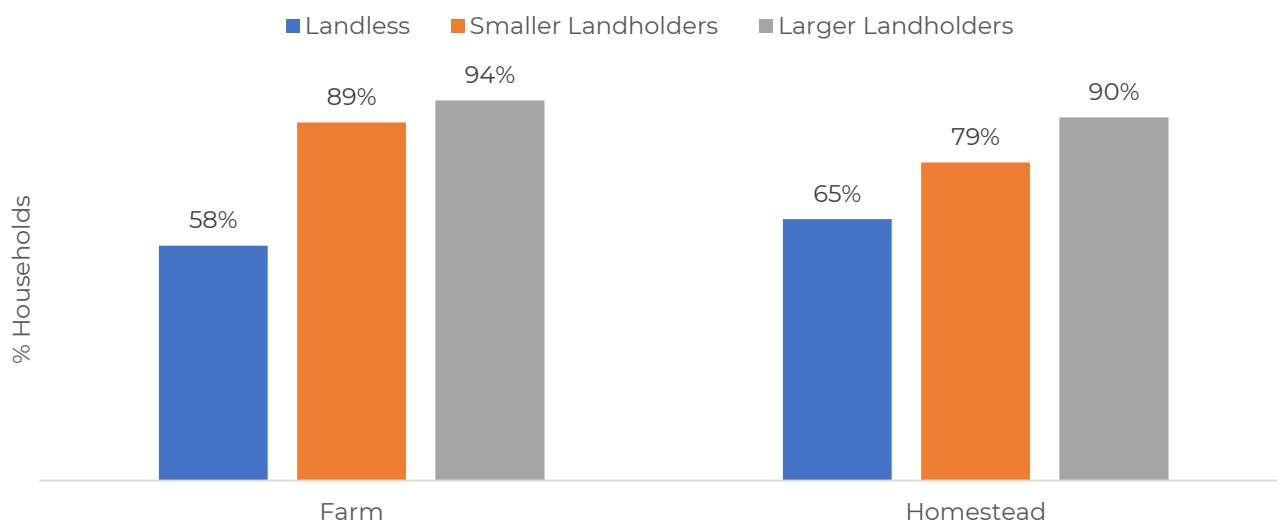
## PRODUCTION AND SOURCES OF SENTINEL<sup>1</sup> FOODS

**Figure 13. Annual production of sentinel food crops by each household group**



- ✓ Rice is the most-produced sentinel food across all household groups. Other sentinel foods are not produced in large amounts.
- ✓ Households with land produce more than twice as much rice, in absolute terms, as Landless households.
- ✓ In Smaller and Larger Landholder groups most households (at least 79%) use both the farm and the homestead to produce sentinel foods.
- ✓ For the Landless group approximately two-thirds of households produce sentinel foods in both the homestead (65%) and in farm fields (58%).

**Figure 14. Where household groups produce sentinel foods**

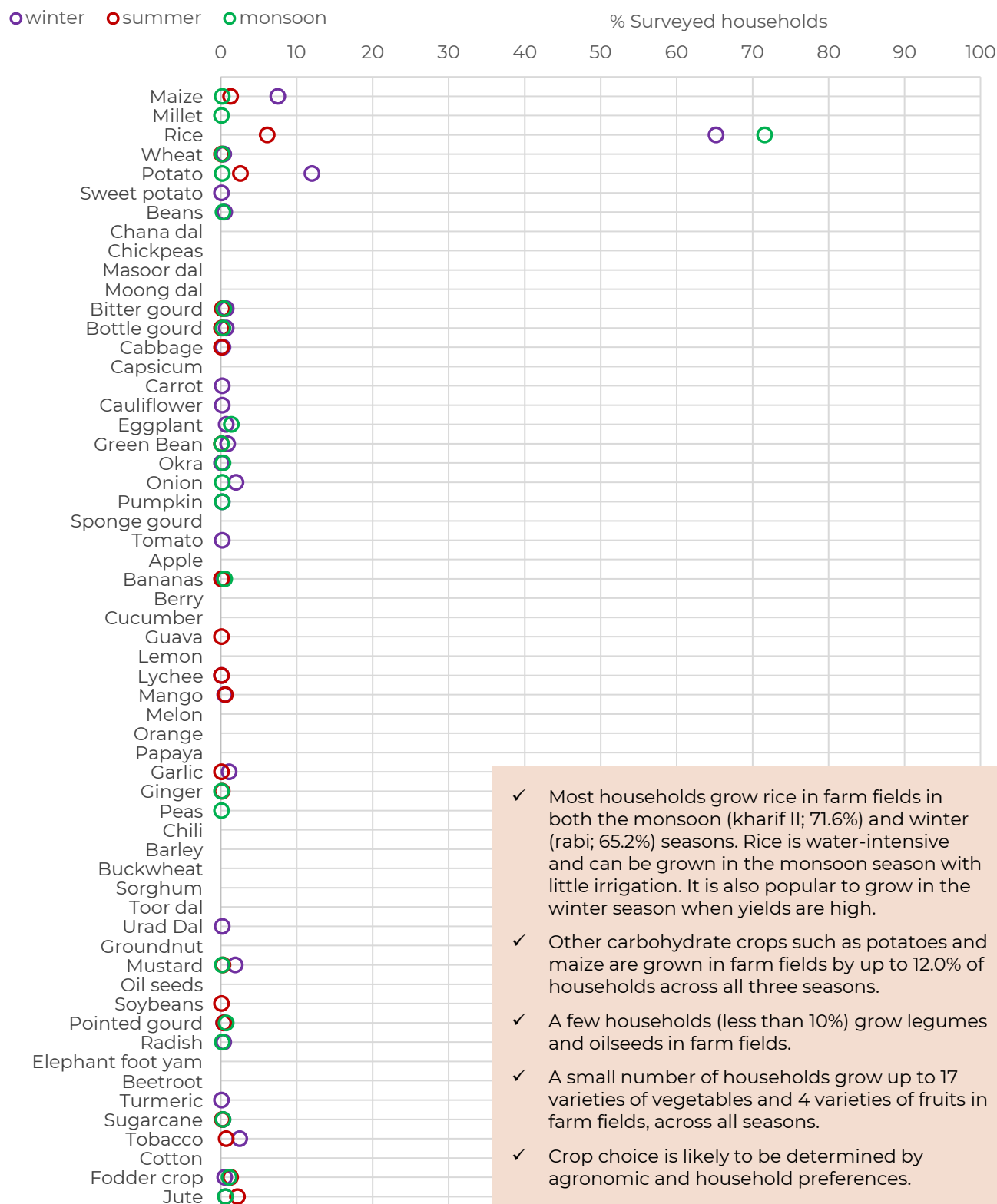


<sup>1</sup> The 25 sentinel foods/food groups monitored in TAFSSA's learning landscapes are: rice; wheat; maize; millets; moong dal; masoor dal; chana dal; chickpeas and beans; potato; poultry; fish; other meat; eggs; milk; orange vegetables; green leafy vegetables; onions; tomatoes; fruits; instant noodles; chips, biscuits and baked sweets; deep fried food; soda, soft drinks and packaged juices; and tea or coffee with sugar.



## SEASONALITY OF FOOD OTHER CROPS

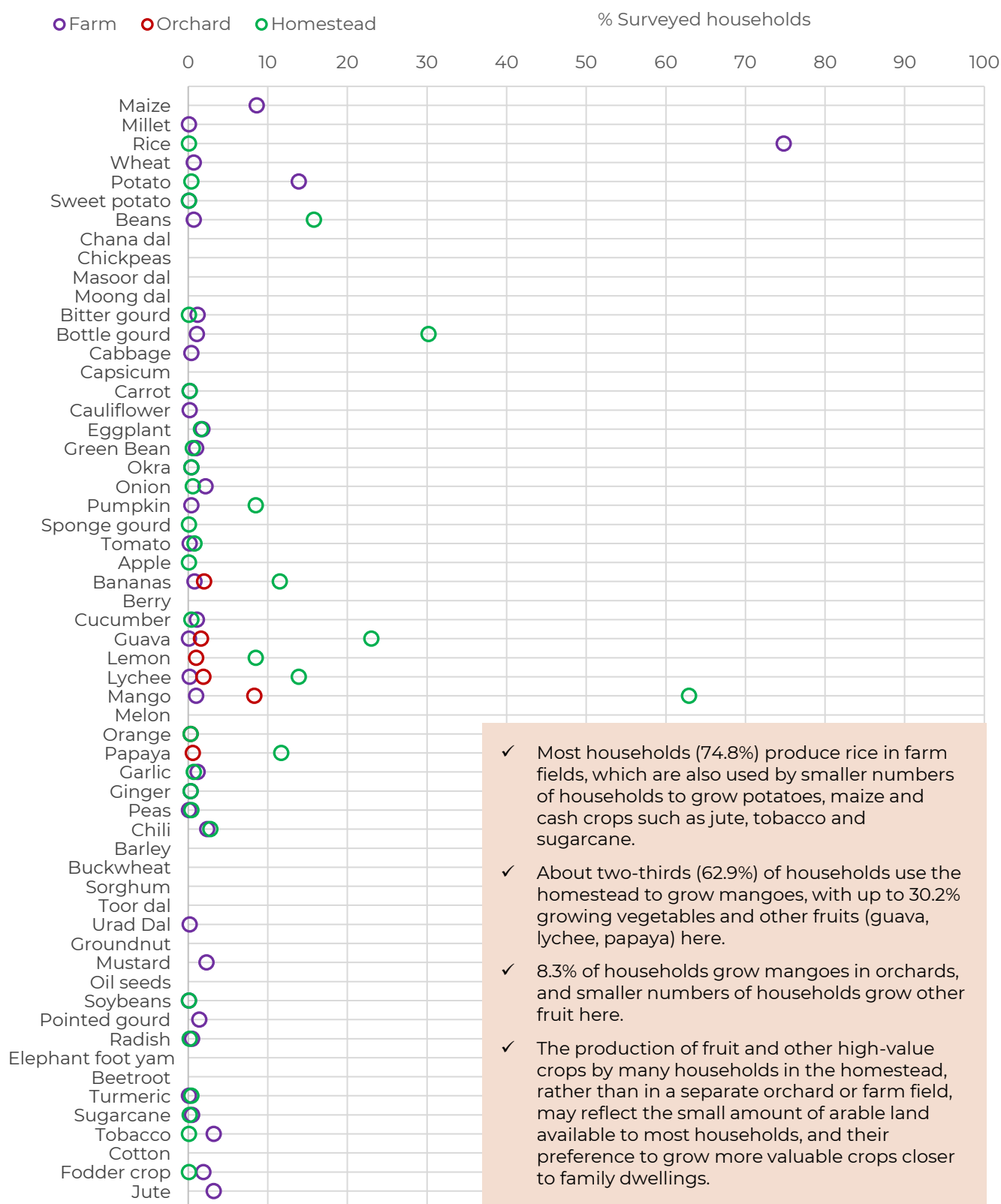
**Figure 15. Food other crops produced each season in farm fields**



- ✓ Most households grow rice in farm fields in both the monsoon (kharif II; 71.6%) and winter (rabi; 65.2%) seasons. Rice is water-intensive and can be grown in the monsoon season with little irrigation. It is also popular to grow in the winter season when yields are high.
- ✓ Other carbohydrate crops such as potatoes and maize are grown in farm fields by up to 12.0% of households across all three seasons.
- ✓ A few households (less than 10%) grow legumes and oilseeds in farm fields.
- ✓ A small number of households grow up to 17 varieties of vegetables and 4 varieties of fruits in farm fields, across all seasons.
- ✓ Crop choice is likely to be determined by agronomic and household preferences.

## WHERE FOOD OTHER CROPS ARE GROWN

**Figure 16. Where food other crops are produced**



## KEY TAKEAWAYS

1. Most households (96%) identify as engaging in agriculture, with 44.2% owning no land and 41.5% owning between 0–0.5 ha land.
2. Many crop and livestock products are produced for both domestic consumption and sale; both are important sources of household income.
3. Of the sentinel food crops, households produce most rice, potatoes, and maize. Few other sentinel foods are produced.
4. Diversity in the number of crops grown is relatively low, with most households growing one crop in the monsoon (kharif II) season and primarily only Larger Landholder households growing two or more crops in the winter (rabi) season.
5. Two-thirds of households sell farm products: legumes, oilseeds and vegetables are key crop products sold, and cattle/buffalo and goats are key livestock sold.
6. Middlemen at the farm gate and village markets (haats) are common means for households to sell farm products.

## KEY QUESTIONS FOR ACTION

1. What are the key barriers to improving farming system productivity in the district?
2. What are potential solutions to overcoming these barriers? What is needed from decision-makers from program teams to implement these solutions?
3. How can women and men farmers be supported and enabled by decision-makers and program teams?
4. How can more marginal farmers be supported to increase their productivity?

## SURVEY METHODOLOGY

### Village and household sampling

We selected 25 wards in the district with a probability proportional to the number of households living in each village. Within each village we conducted a household listing to identify eligible households, i.e. 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 1,000 households in the district. Thus the findings reported in this data note are representative of rural households from this district which 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. 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 that supports actions improving equitable access to sustainable healthy diets, that boosts farmers' livelihoods and resilience, and that conserves land, air, and water resources in a climate crisis.

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