

Diet Quality and Sustainability **Effects of Agricultural Value** **Chain Growth** A Simulation Analysis for Rural Bangladesh

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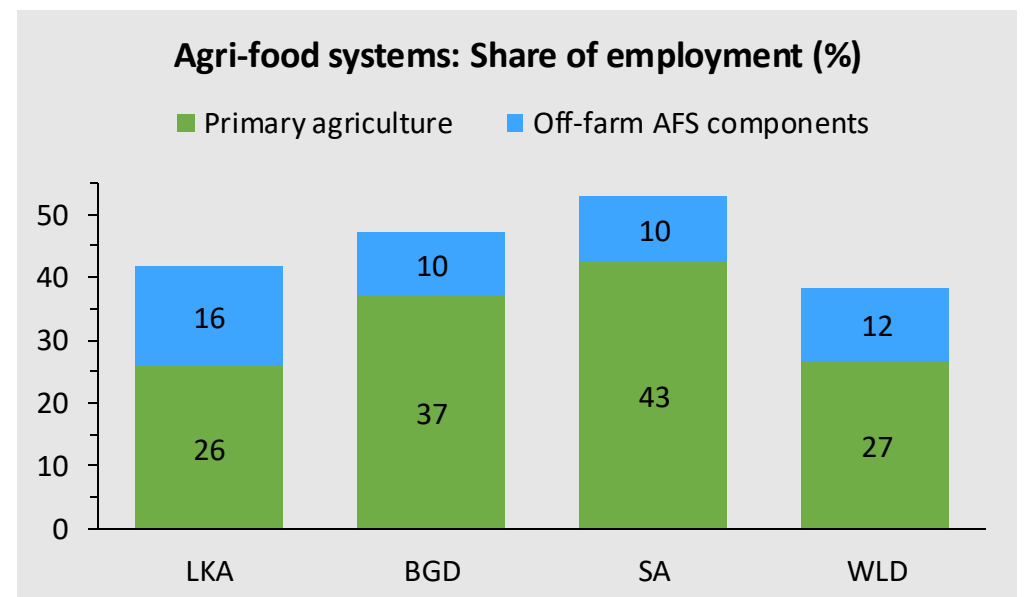
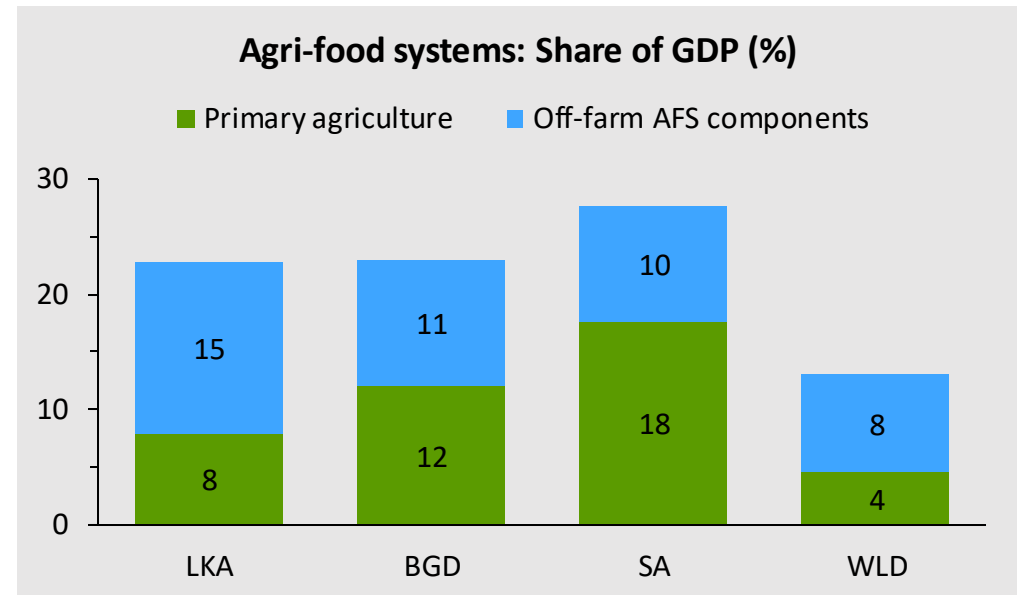
INITIATIVE ON
Sustainable
Healthy Diets



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Motivation

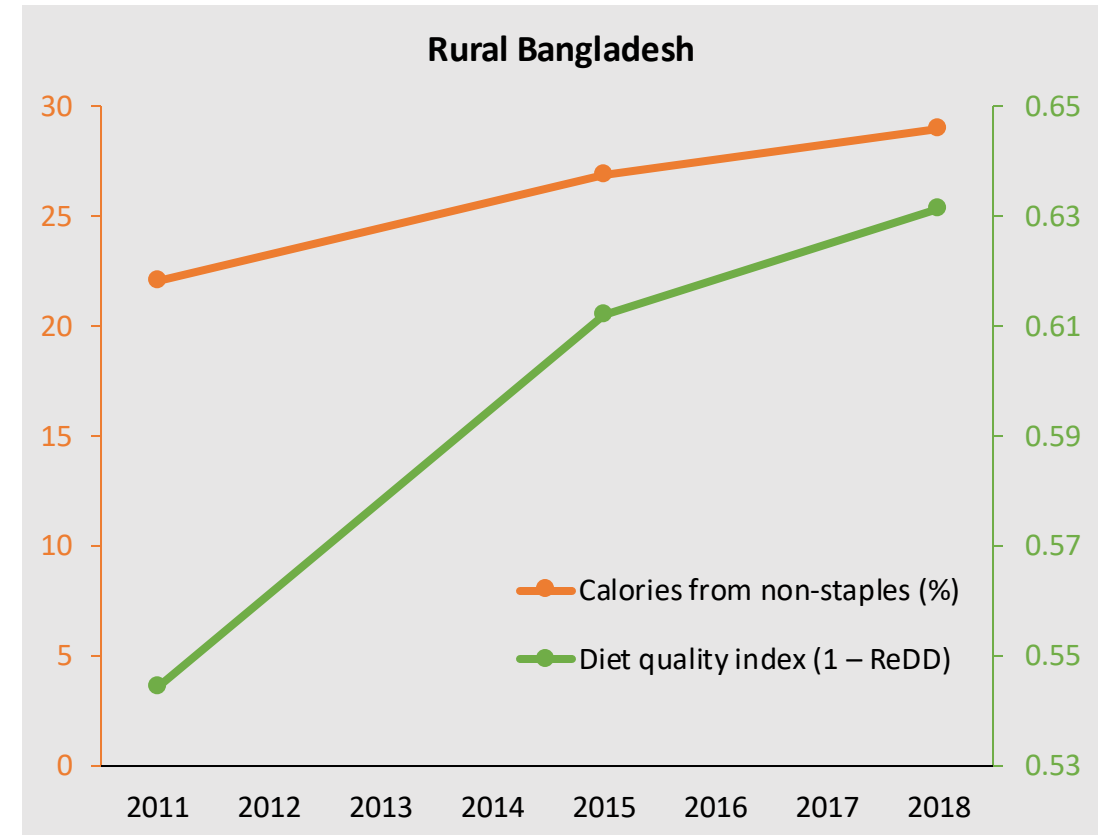
- Agriculture and national agricultural policy can play an important role for transforming food systems and delivering for nutrition in South Asian countries.
- Ag. policies influence food systems processes mostly from the supply side and intend to improve household consumption by increasing food availability and affordability.
- Consumer behavior is insufficiently considered in ag. policymaking, but is key for policies' impact on household diets and their environmental footprints.
- Knowledge gap:
 - How effective are alternative ag. policy options in improving the quality of household diets?
 - Do healthier diets mean greater environmental sustainability, or how large are the tradeoffs?



Source: Thurlow et al. (2024).

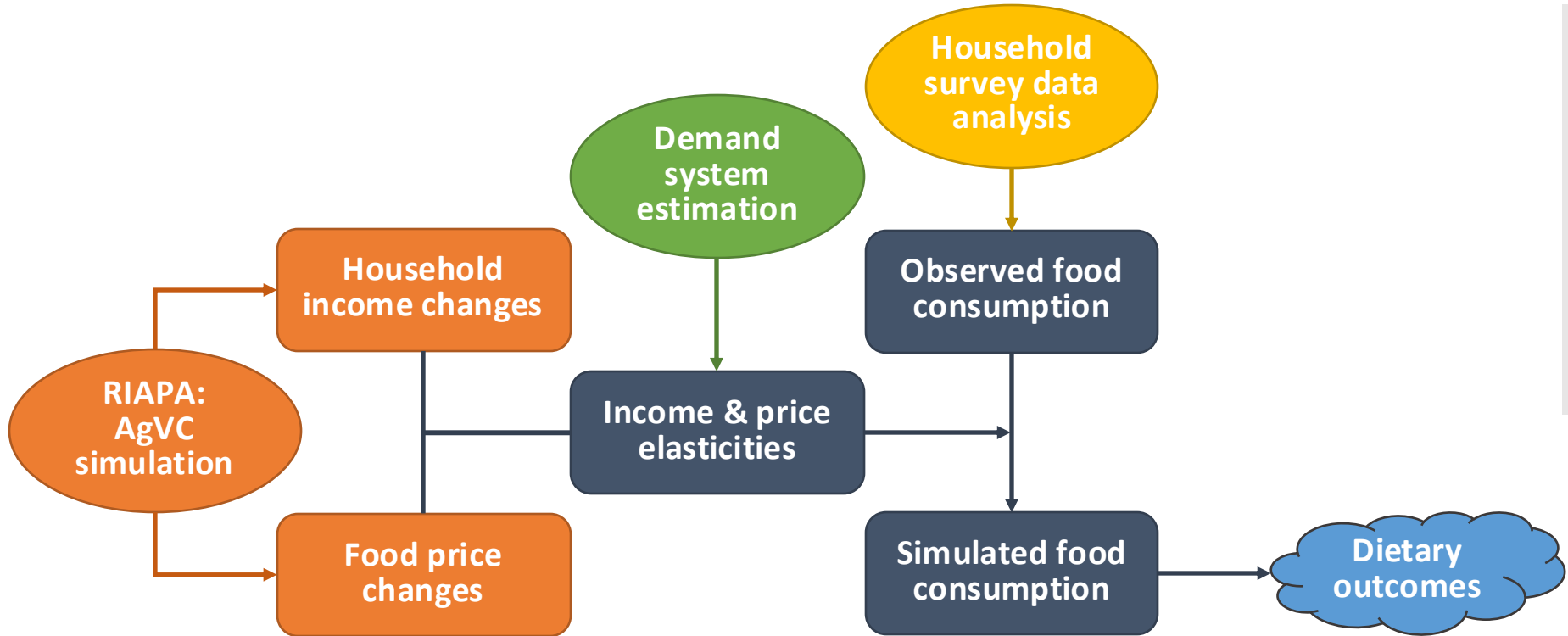
Objective

- Introduce a simulation modeling framework for ex-ante assessment of the impact of government sector policies on dietary outcomes to support evidence-based policy decision-making.
- Apply the modeling framework to simulate the effects of economic growth driven by different agricultural value chains (AgVCs) on the quality and environmental sustainability of household diets.
- Focus on Bangladesh and the effects among rural consumers, using household panel survey data from IFPRI's BIHS.



ReDD = Reference Diet Deprivation (ReDD) index (Pauw et al. 2023)

Simulation modeling framework



Selected AgVCs:

1. Paddy rice
2. Non-rice cereals
3. Horticulture (vegetables, fruits, roots/tubers)
4. Pulses & groundnuts
5. Poultry & eggs
6. Meat & milk
7. Fish & seafood
8. Sugar, coffee, tea

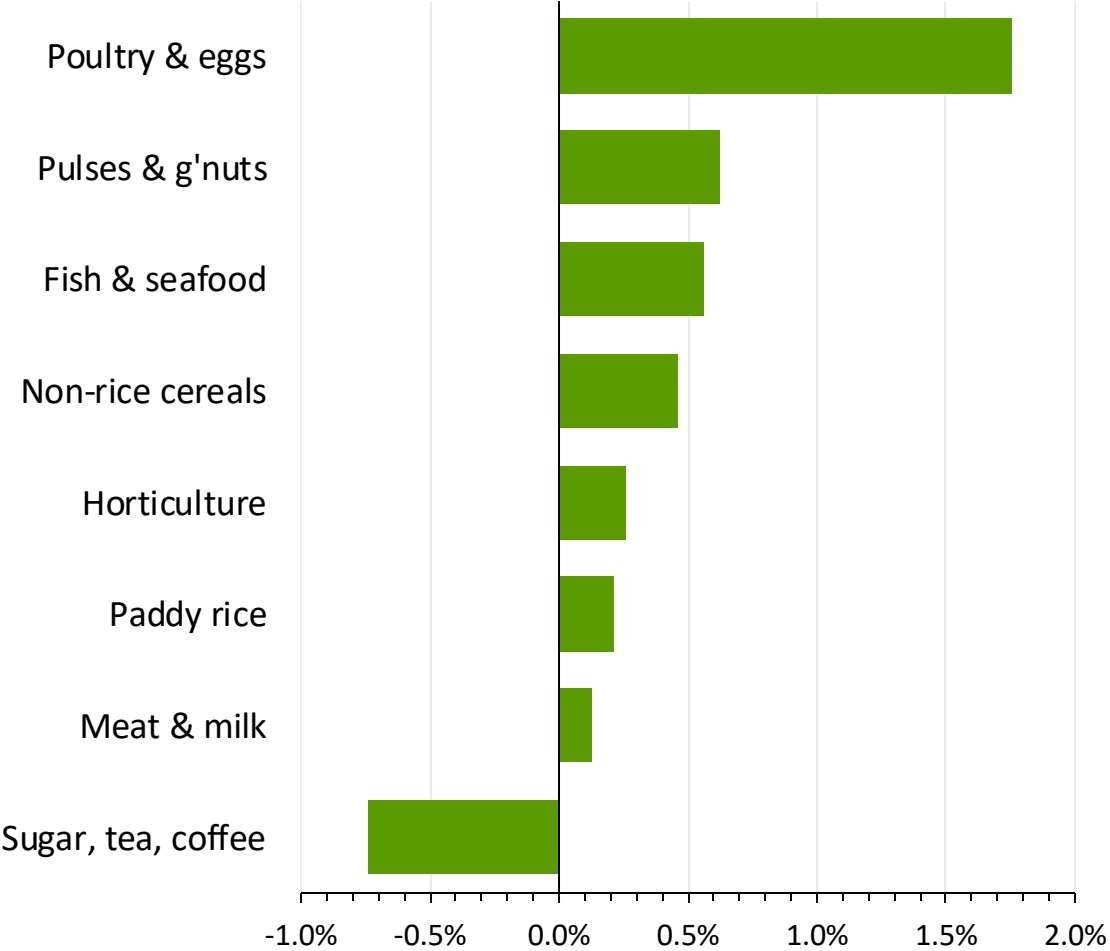
Simulation scenarios: TFP increases in selected AgVCs to generate an additional 1% GDP above baseline level after 5 years

Outcome indicators: Diet quality index (ReDD); water footprint & GHG emissions of household diets

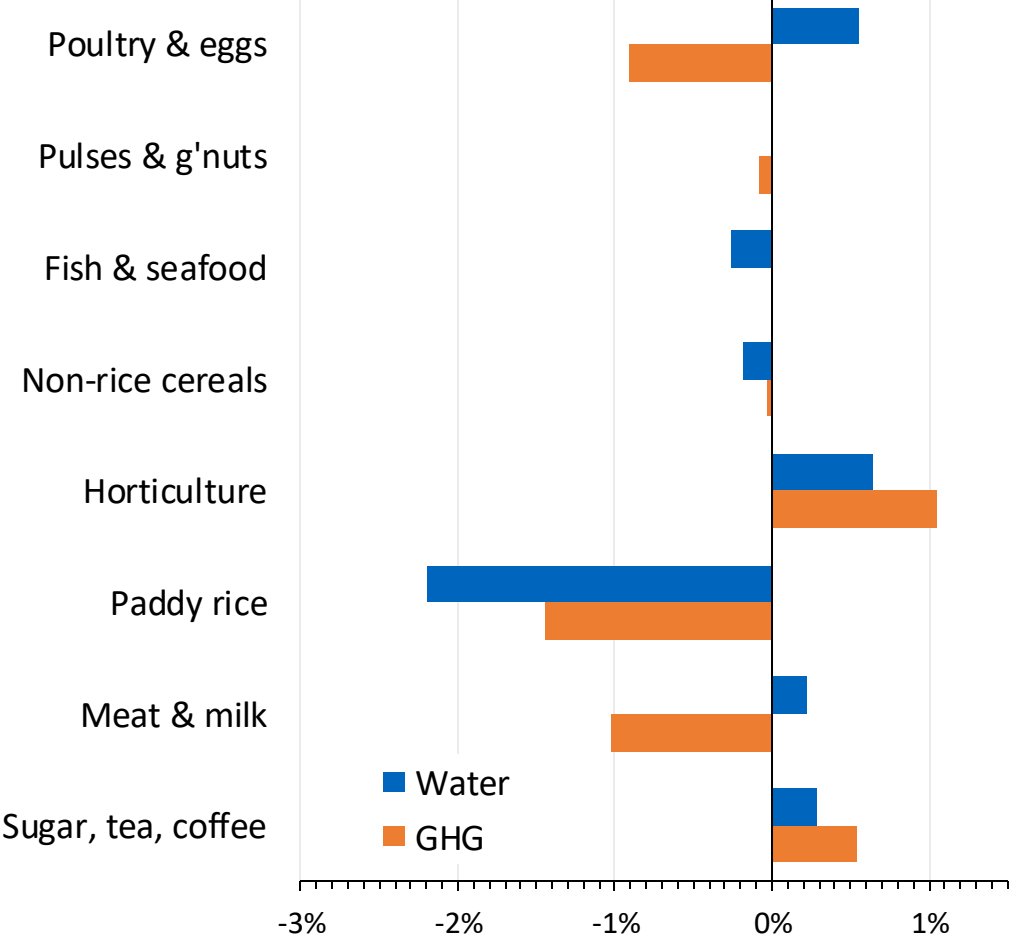
Simulation results

Change from baseline

Diet quality improvement

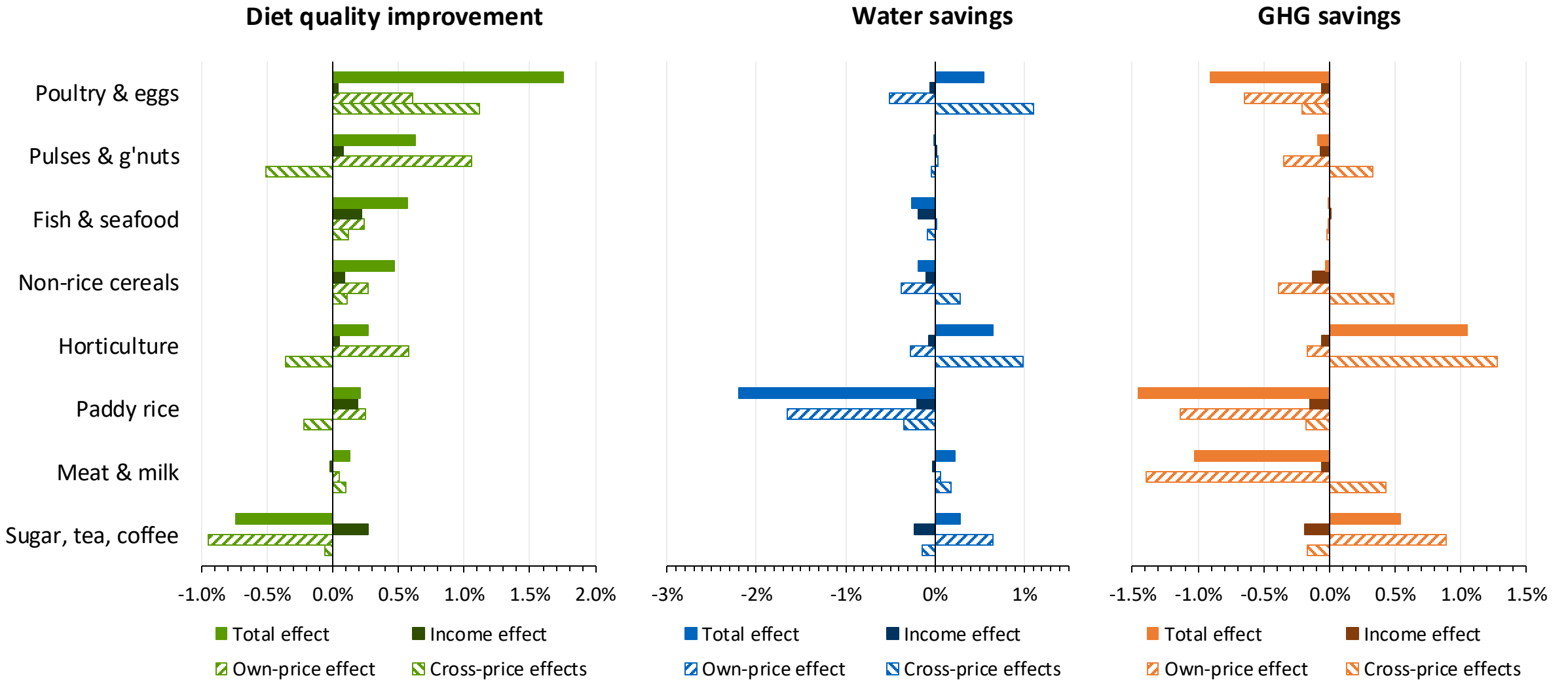


Water and GHG savings



Decomposition of simulated effects

Change from baseline



Conclusions

- The patterns of agricultural value chain growth and consumer food preferences affect the quality of household diets and their environmental footprints.
- No 'silver bullet': There is no single AgVC (or combination of AgVCs) that is effective at both improving household diets and achieving environmental sustainability.
 - The tradeoffs need to be considered in food systems policy decision-making.
 - In the formulation of transformational policies, defining priorities for target outcomes is important.
- The analysis provide evidence that can directly help policymakers in Bangladesh to better understand the diet quality and sustainability effects of planned ag. policies, but can also be easily adapted to examine other food systems policies or shocks, or to assess the impact on other household welfare indicators.
- The simulation modeling framework is a useful policy decision support tool and flexible for adjustment to other country contexts and food policy research questions.

References

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IFPRI ISSUE BRIEF | JUNE 2024

Consumer Preferences Matter for Transforming Food Systems for Sustainable Healthy Diets

Evidence from Rural Bangladesh

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Current food systems fail to provide sustainable healthy diets for everyone. Globally, about 3.1 billion people – or 42 percent of the world population – are unable to afford a healthy diet; most of them live in the global South (FAO et al. 2021). Poor quality diets are the leading cause of all forms of malnutrition and common noncommunicable diseases (Afshin et al. 2019; Willett et al. 2019). At the same time, current food system activities are associated with substantial environmental degradation and biodiversity loss and are responsible for about 28 percent of total anthropogenic greenhouse gas emissions (GLOPAN 2020). While there is broad consensus that food systems transformation is urgently needed to achieve sustainable healthier diets (FAO et al. 2021; Webb et al. 2020), it is less clear what policies and actions can bring about change effectively.

KEY MESSAGES

- Food system transformation strategies rely on consumer demand response for achieving sustainable healthy diets.
- However, food consumption patterns and consumer preferences are often not well understood in many countries of the global South.
- Bangladesh, a country in the take-off stage of agrifood system transformation, has experienced improvements in diet quality but also an increasing incidence of overweight, with faster increases in rural than urban areas.
- Rural consumer demand is driven by strong preferences for animal-source foods, while the demand for sugar and highly processed foods increases faster than total food demand when income rises.
- Agricultural value chain development can be an important policy instrument for improving household diet quality but can also lead to undesirable dietary change if food consumption incentives conflict with nutritional needs.

