



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Innovations to Reduce Food Loss and Waste, Promote Food Safety and Access to Nutrient-rich foods

Feed the Future
Food Systems for Nutrition - Innovation Lab (FSN-IL)

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USAID
FROM THE AMERICAN PEOPLE



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NUTRITION INNOVATION LAB (2010-2021) - HIGHLIGHTS FROM BANGLADESH

- Combining farm interventions leads to significantly more positive impacts than either alone, or neither.
- Ag-diversification, intensification and integration can improve diets. But market access, rural financing and business literacy matters even more for enhanced productivity and sustaining diverse diets.
- Relatively simple and affordable technologies exist to accelerate drying and storage of perishable foods to improve nutrition; but they must be tailored to scale of operation, market demand, and affordability.



What is the Food Systems for Nutrition – Innovation Lab

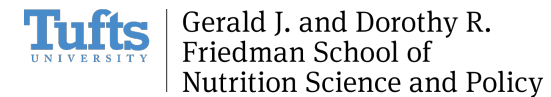
- A USAID-funded activity (one of 25 innovation lab) – focused on **generating evidence** to support innovation across the food system.
- How can we get more **nutrient-rich foods** into everyone's diets? Needs more affordable fruit/veg, legumes, dairy/eggs, meat/fish, nuts and seeds, etc.
- Our focus is on what can be done to **reduce food loss and waste**, promote **demand for/access to nutrient-rich foods**, and enhance **food safety** of perishable foods.



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COLLABORATORS



Food Systems for Nutrition Innovation Lab (2022-2025) - Goals

- i) Generate evidence** on scalable nutrition-sensitive food system technologies, policies and practices - funding large and small proposals (based on RFAs).
- ii) Capacity development** – trainings, workshops, dissemination events, technology challenges, innovation prizes.
- iii) Stakeholder engagement** across government, businesses and researchers.

Issues to consider

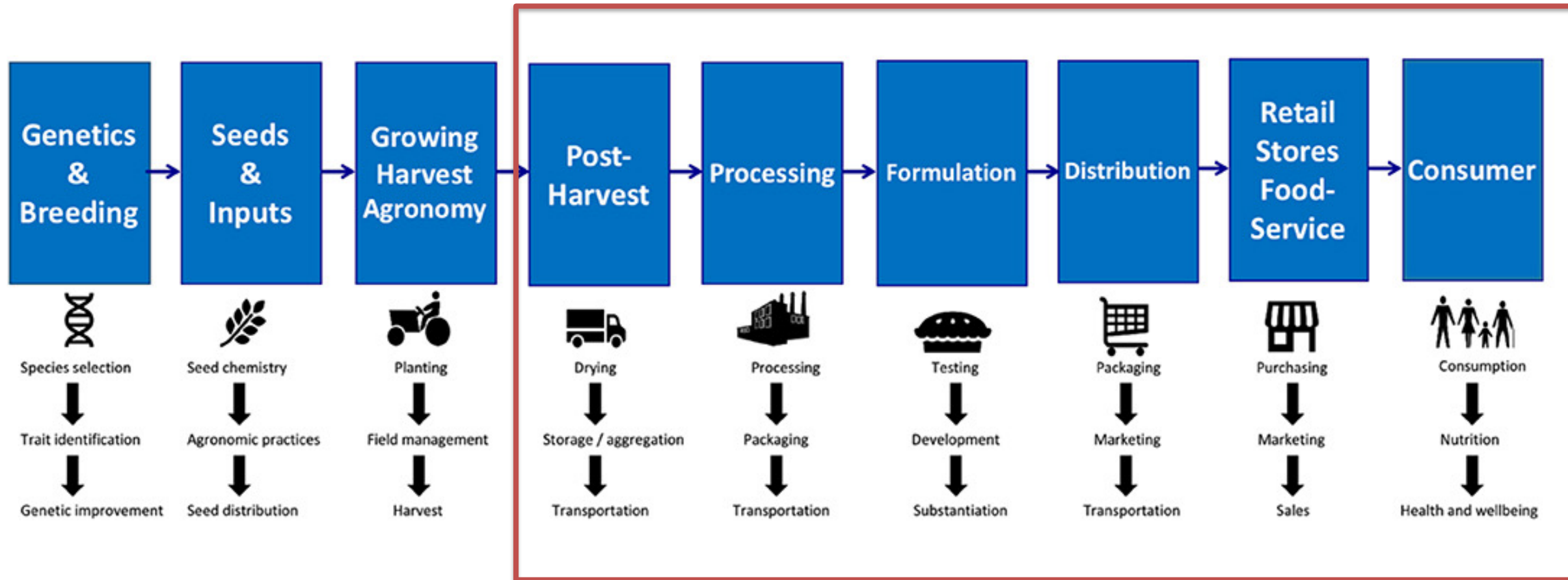
1. What are **priority evidence gaps** in food system transformation (some of which could be addressed by Food Systems for Nutrition - Innovation Lab).
2. How best to **support innovation** in Bangladesh's food system to support healthy diets, cut food loss and waste, improve food safety.
3. We can't change everything all at once. But **what *can* we start changing** early in a transformation process?

Towards Sustainable Food Systems in Bangladesh (2021)



- Private investment in inputs, processing, storage, packaging, transportation and marketing of agri-food products and services will be promoted.
- There is substantial food and nutritional loss along the agri-food value chain arising from ... postharvest losses due to inadequate infrastructure and lack of updated technologies. Investment in reliable storage is beyond the capacity of individual smallholder farmers and calls for public-private sector collaboration.

Innovations along food value chains to support healthy diets



ADAPTATION OF USAID'S AGRICULTURAL SCALABILITY TOOL



GUIDE TO THE AGRICULTURAL SCALABILITY ASSESSMENT TOOL

FOR ASSESSING AND IMPROVING THE SCALING
POTENTIAL OF AGRICULTURAL TECHNOLOGIES

Adapted

- A. Importance of the Issue the Innovation Addresses
- B. Credibility and Observability of the Innovation
- C. Requirements for Adoption
- D. Potential Benefits or Risks for Potential Adopters
- E. Enabling Environment for commercialization

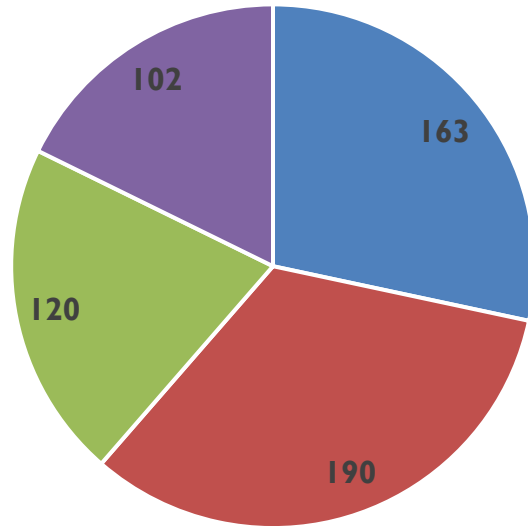
COMPARISON OF SCORES ACROSS FOOD LOSS AND WASTE TECHNOLOGIES

Prioritization Tool	Illustrative innovation 1: Hermetic Storage Technologies	Illustrative Innovation 2: Chimney Dryer	Illustrative innovation 3: Drying Beads
Sections/Issues 5 sections (53 criteria); Total score: 5 points per section/issue			
A. Issue the innovation addresses (4 criteria)	4.0	2.0	5.0
B. Credibility & Observability (8 criteria)	4.5	3.8	4.2
C. Requirements for adoption: Individuals and Institutions (18 criteria)	3.8	2.3	3.8
D. Benefits and Risks to Adopters (11 criteria)	3.27	2.8	3.9
E. Enabling environment for commercialization (12 criteria)	2.46	2.4	3



INNOVATION BY GEOGRAPHY

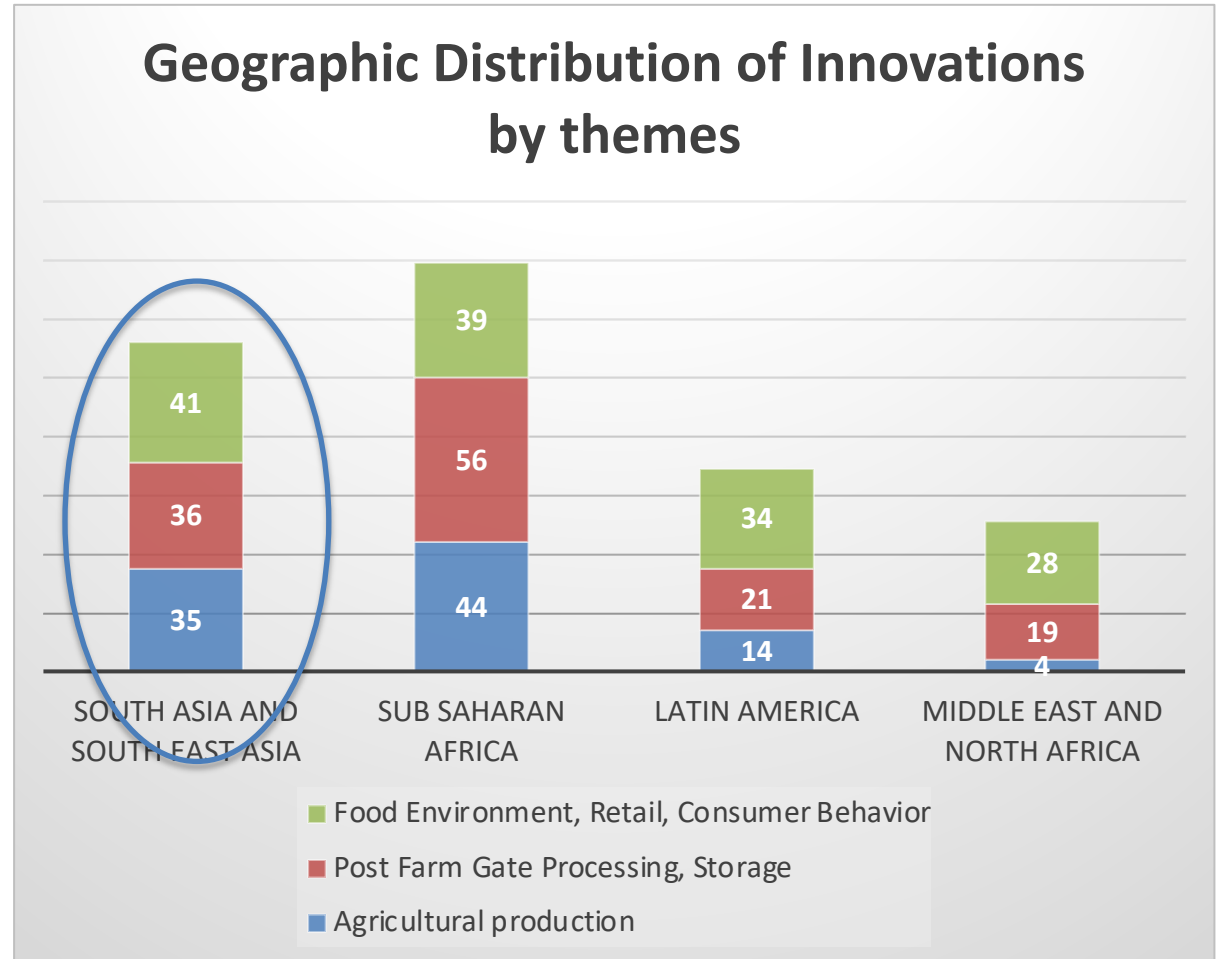
A total of 276 innovations focusing on nutrient dense foods, food loss and waste and food safety



- South Asia and South East Asia
- Sub Saharan Africa
- Latin America
- Middle East and North Africa

76 Innovations are from the Global Innovation Exchange Database

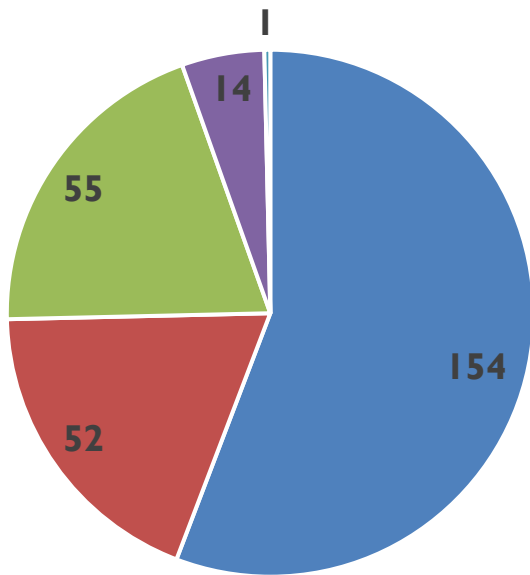
Geographic Distribution of Innovations by themes



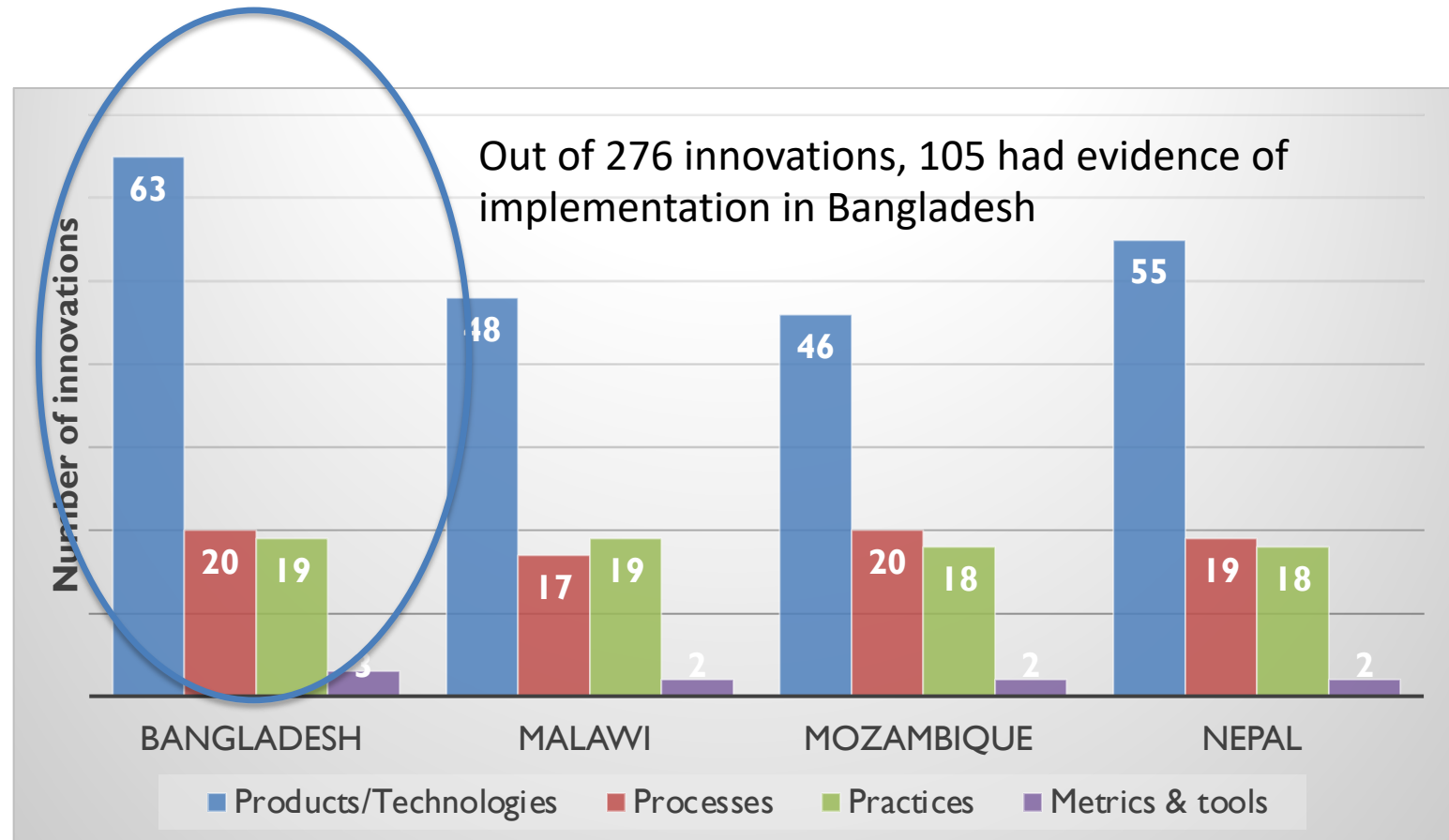
INNOVATION BY TYPES

Innovation is “doing things in a new way. Innovation can include new products, technologies, services, institutions, and policies.”

Source: Zilberman et al. (2022) Innovation, supply chain, and adoption. *PNAS*



- Products
- Practices
- Products & Practices
- Processes
- Metrics



EXAMPLES OF PRODUCTS, PROCESSES, PRACTICES

Products

- Driers (Solar and Non-Solar)
- Cold Rooms and Cold Storage Tech
- Future Pump Solar Pumps
- Hermetic Storage
- Reusable crates
- Antimicrobial paper liners
- Fresh food vending machines

Processes

- Dry Chain Concept
- Bioactive packaging system
- Post-harvest toolkit
- Social Business ventures and SME development: Saving Grains, Root Capital
- Improved Nutrition Labeling
- Innovative food delivery systems
- Food traceability platforms
- Front of package labeling
- Taxes on unhealthy foods

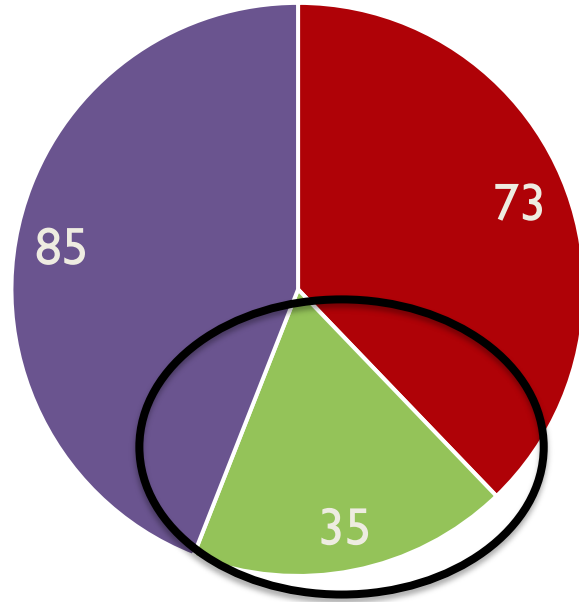
Practices

- Scientific Animations Without Borders
- Warehouse storage practices for food grains
- Hub and Spoke Innovation System
- Trade shows
- Digital Marketing through policy restrictions on HFSS
- Elevating indigenous food systems

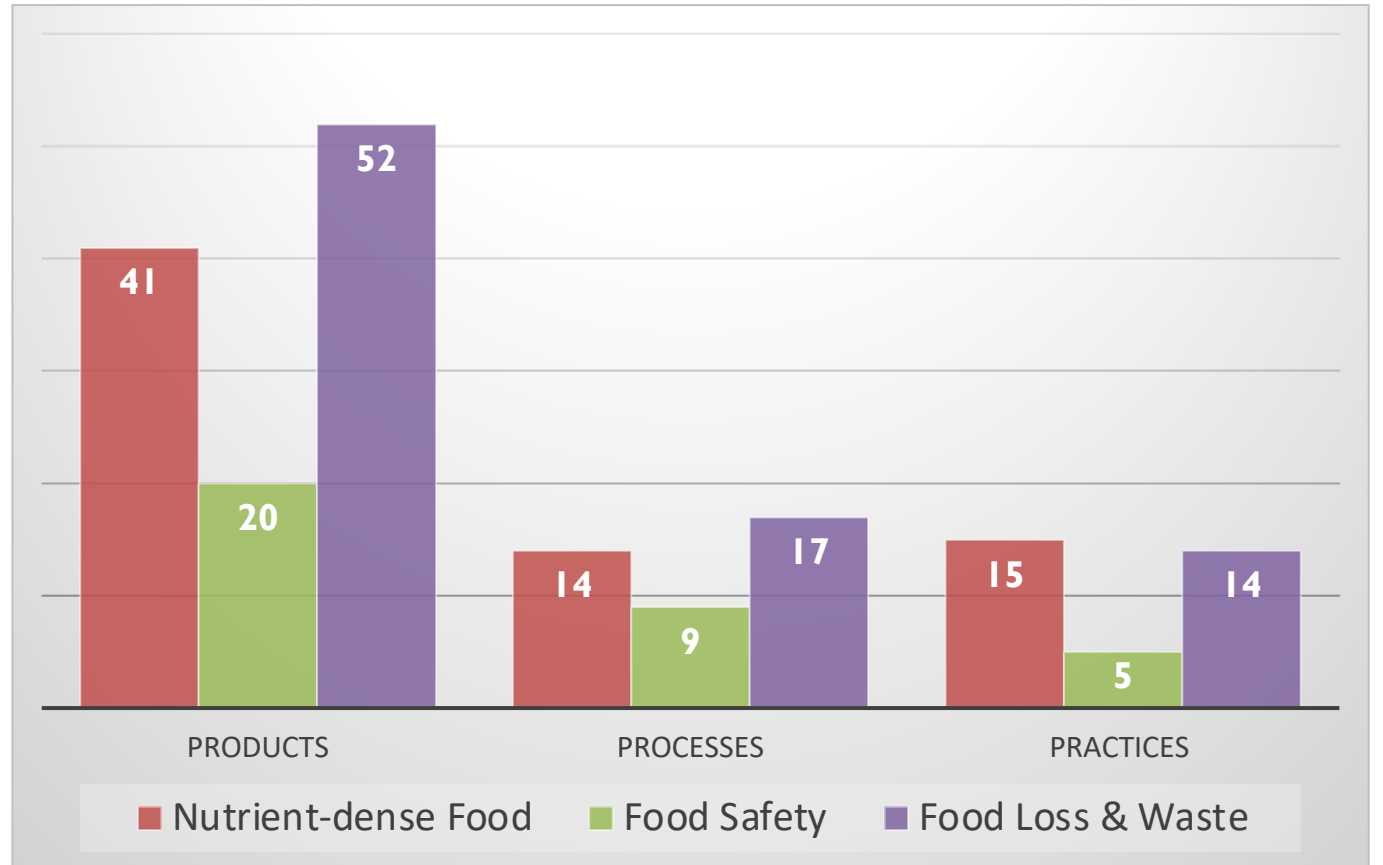
Processes: Market processes, support for development, policies/standards



SCOPING FINDINGS - BANGLADESH



- Nutrient-dense Food
- Food Safety
- Food Loss & Waste



“Science- and evidence-based innovations [be they] technological, financial, policy, legislative, social and institutional – are needed across agrifood systems.

These solutions often come as packages; for example, **scaling up a new technology may require conducive policy and legal frameworks, targeted financing, closing of the digital divide, social acceptance, and sound governance and institutions.”**



BUNDLING INNOVATIONS – THOUGHT EXPERIMENT TO IMPROVE ACCESS TO FRUITS & VEG.

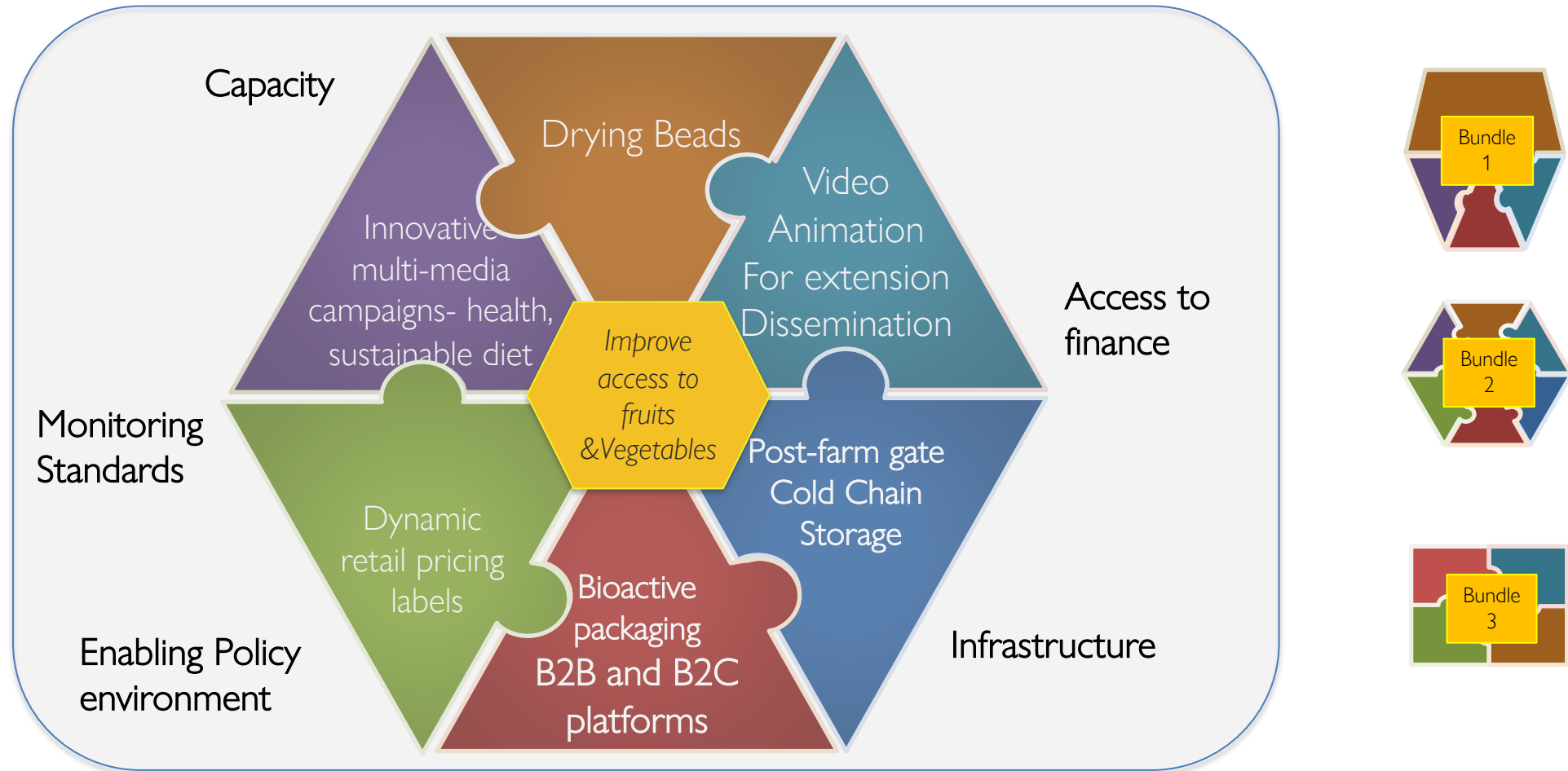


Figure adapted from: C.B. Barrett et. al., Socio-Technical Innovation Bundles for Agri-Food Systems Transformation, Sustainable Development Goals Series'

KEY TAKE-AWAYS

1. In the new agri-food systems literature, bundling of technologies, practices and policies seen to have greater potential for scaling and profitability.
2. Our bundling exercises are showing that its most likely that multiple innovations are required in one or more parts of the value chain
3. Enabling policy instruments, standards, infrastructure, access to finance will need careful consideration – clear need for integration of investments public and private.
4. Caveat: Not all innovations are at the same stage of development, hence careful need to assess viable bundles for synergistic cost-effective effects.



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Food Systems For Nutrition Innovation Lab

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We collaborate with stakeholders across the food system