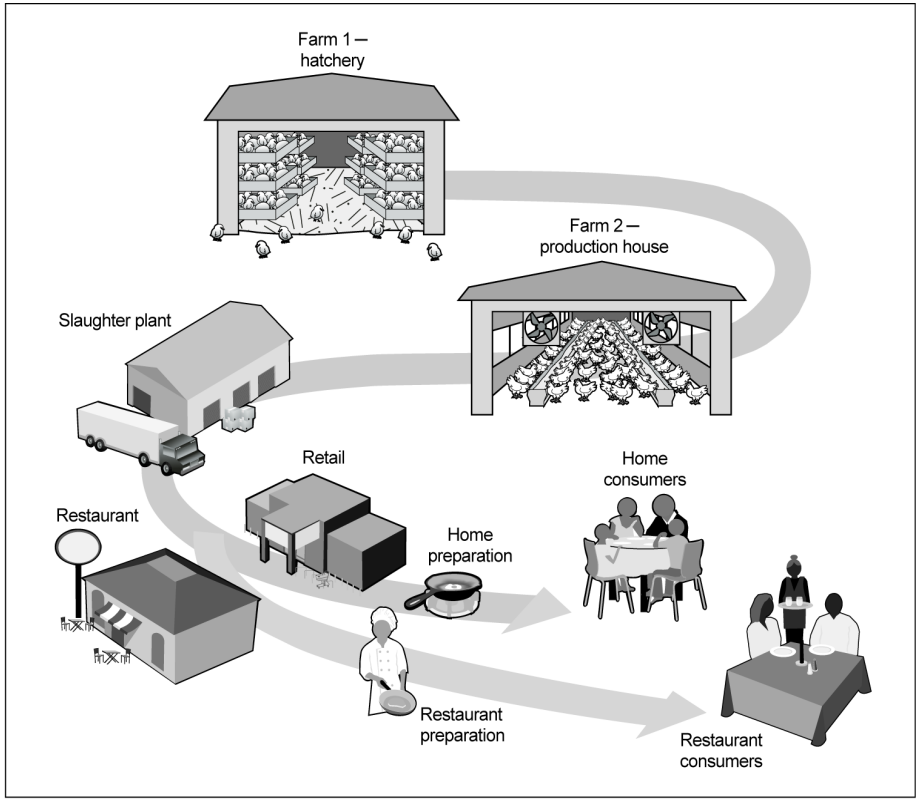
Food Security and Food Safety (Farm to Plate): Bangladesh Perspective

'খাদ্য নিরাপত্তা ও খাদ্য নিরাপদতা (খামার থেকে প্লেট): বাংলাদেশ প্রেক্ষিত

FARM-TO-TABLE CONTINUUM FOR POULTRY PRODUCTS



Sources: GAO and Centers for Disease Control and Prevention. | GAO-14-744

বাংলাদেশ নিরাপদ খাদ্য কর্তৃপক্ষ
Bangladesh Food Safety Authority
জীবন ও স্বাস্থ্য সুরক্ষায় নিরাপদ খাদ্য

With SDG 2, countries commit to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" by 2030

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University of Dhaka

December 30, 2024

Outline

- Food Security in Bangladesh: Current Status
- Food Safety: The "Farm to Plate" Journey
- Food safety management system in Bangladesh
- Key Challenges
- Call to Action: Future Strategies

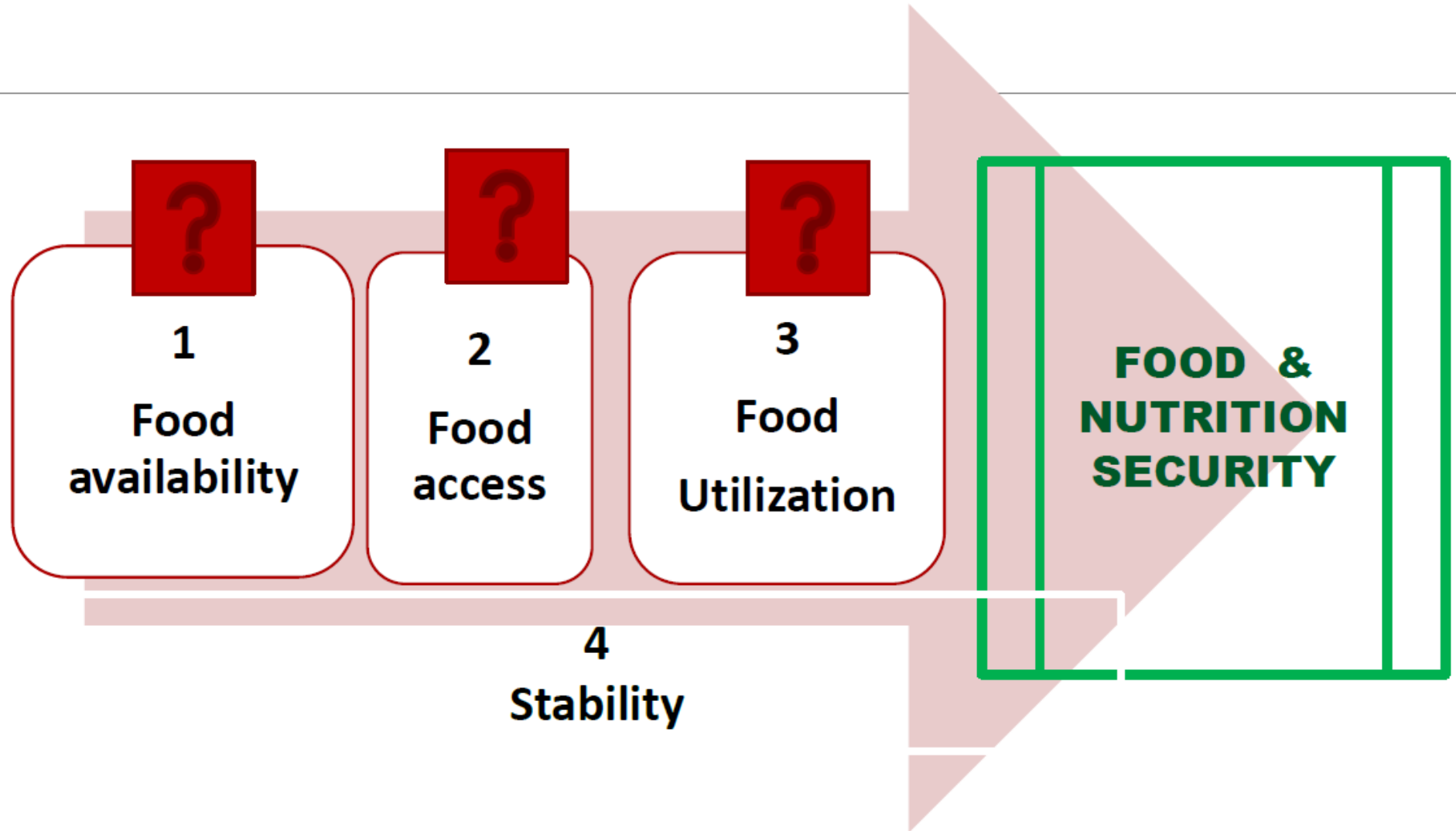
Food Security

‘‘Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.’’ (FAO, 1996)

Nutrition Security

“*Nutrition Security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care*”

The 4 domains of FNS



Changes in production of main food crops in Bangladesh, per unit of production (Metric tones) according to FAO STAT

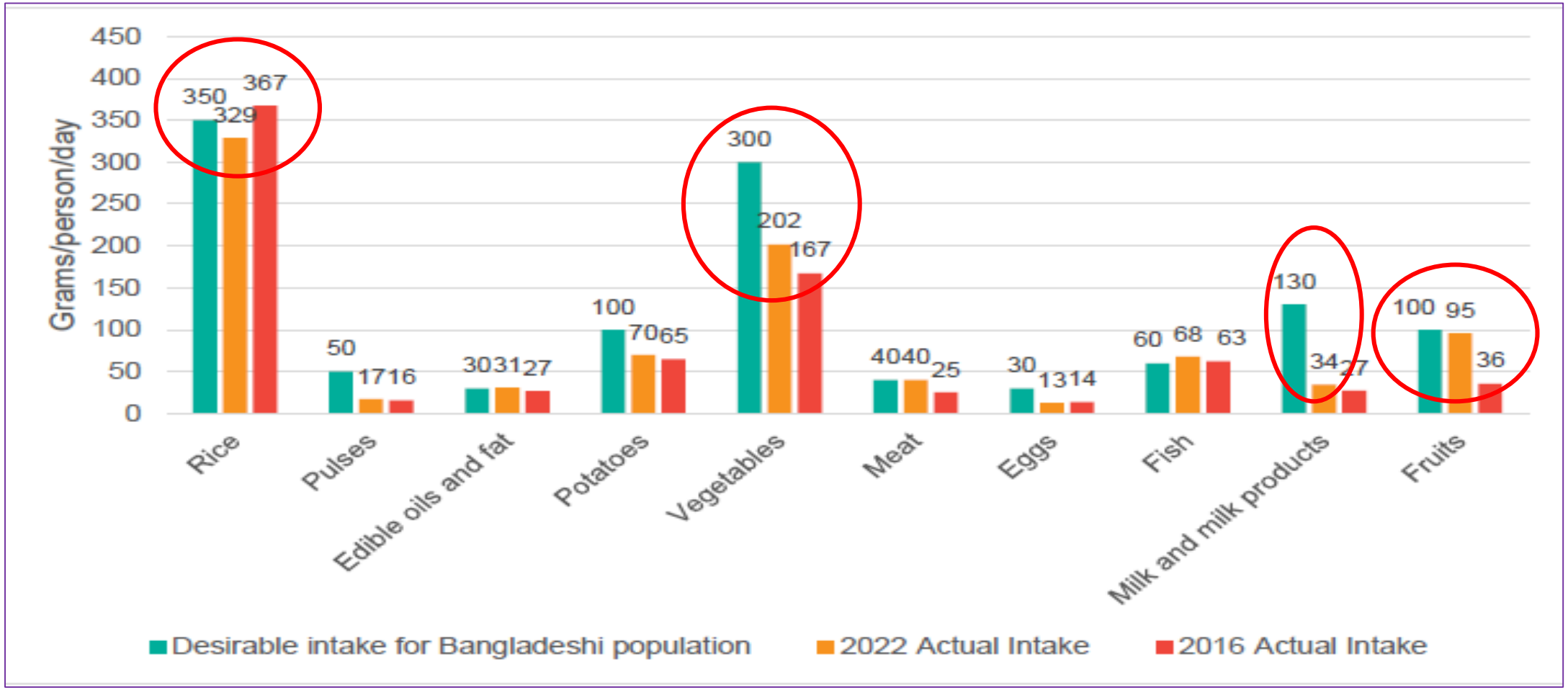
Availability

	Unit	2012-2013	2019-2020	Percentage point changes
Item				
Cereals, total	Metric ton	48757113.41	54209854.79	11%
Rice, paddy	Metric ton	46424105	49818966.93	7%
Rice, paddy (rice milled equivalent)	Metric ton	30964878.04	33229250.6	7%
Roots and Tubers, Total	Metric ton	7882584.255	8982920.31	14%
Potatoes	Metric ton	7647853.85	8763792.31	15%
Eggs, hen, in shell	1000 No	5222005	10224200	96%
Fruit Primary	Metric ton	3612322.805	4514031.34	25%
Vegetables Primary	Metric ton	3587030.72	6114993.43	70%
Maize	Metric ton	-	3451005.285	-

Source: FAO STAT

Desirable intake (grams per capita) for Bangladeshi population and actual intake of select food groups in 2016 and 2022

Accessibility

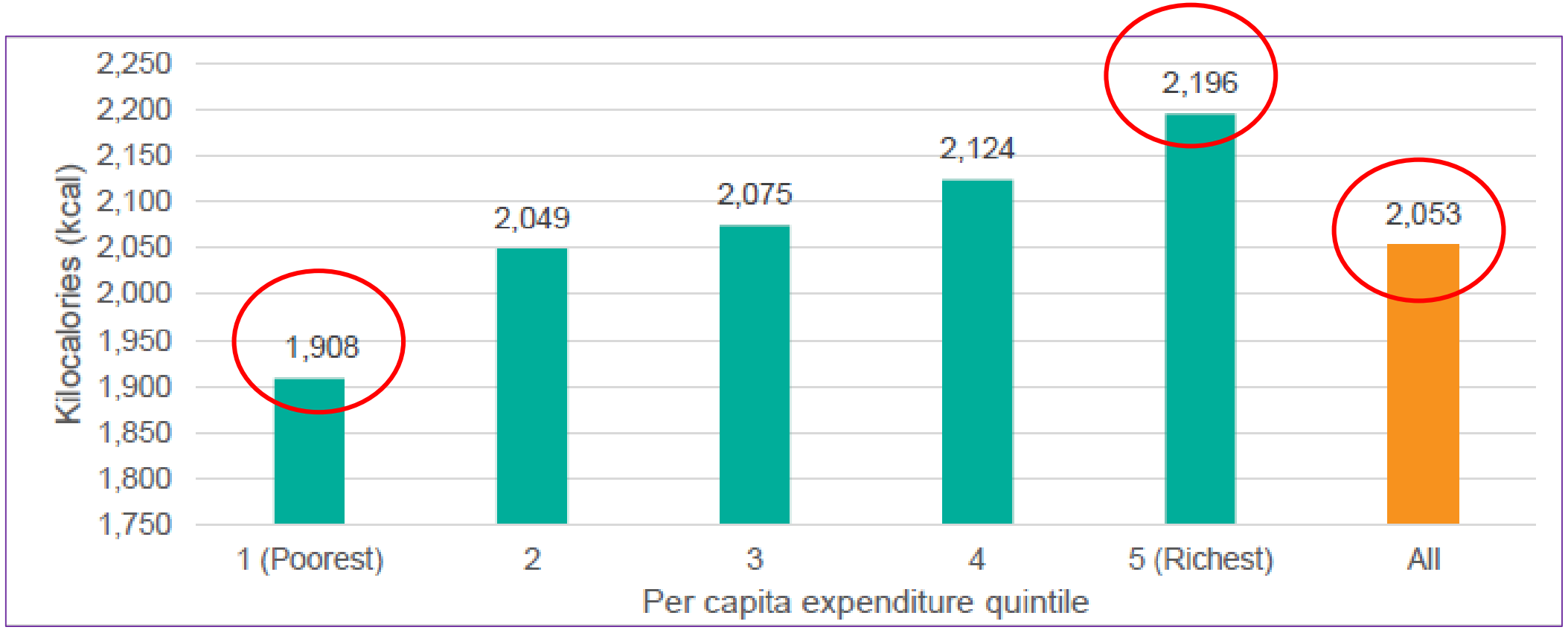


Source: Household Income and Expenditure Survey (HIES) 2016 and 2022

1Desirable intakes for the Bangladeshi population were obtained from the Desirable Dietary Pattern for Bangla-desh study, conducted by the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (Nahar et al. 2013).

Accessibility

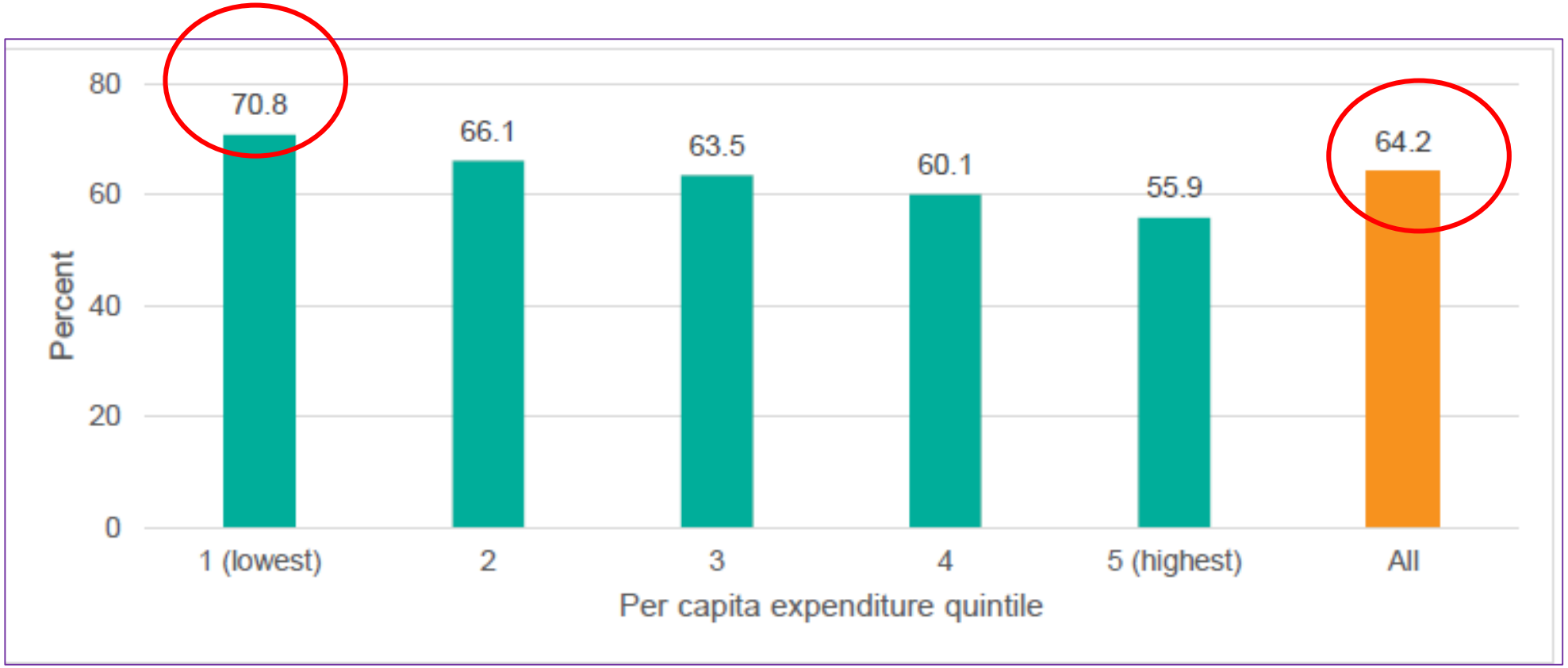
Energy (calorie) intake and inadequacy



Source: IFPRI's Bangladesh Integrated Household Survey (BIHS), 2018/2019, national rural stratum

Accessibility

Percentage of total calorie intake from rice, by income group, 2018/19



Source: IFPRI's Bangladesh Integrated Household Survey (BIHS), 2018/2019, national rural stratum

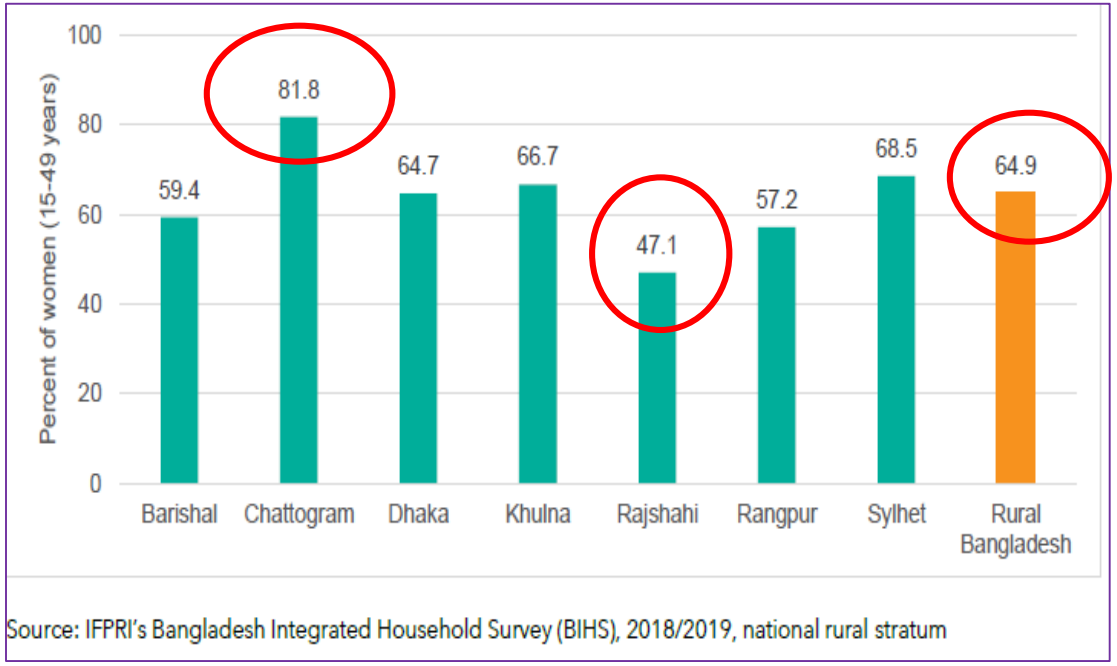
Percentage of minimum acceptable diet of children under 2 years of age, by division, 2022

Source: Bangladesh Demographic Health Survey (BDHS), 2022, national

Women's dietary diversity

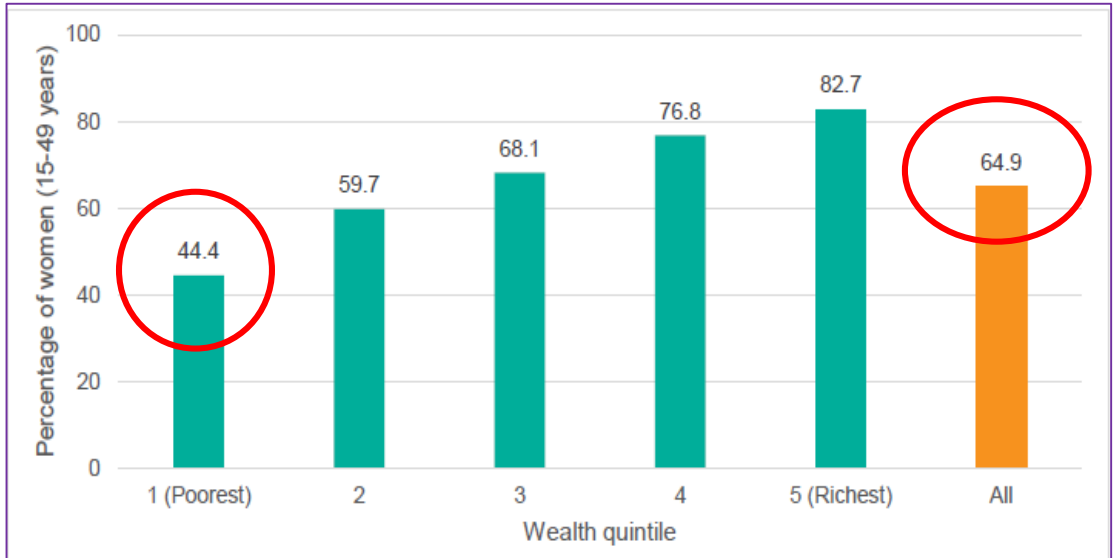
Accessibility

Percentage of women of reproductive age achieving the minimum dietary diversity, by division, 2018/19



Source: IFPRI's Bangladesh Integrated Household Survey (BIHS), 2018/2019, national rural stratum

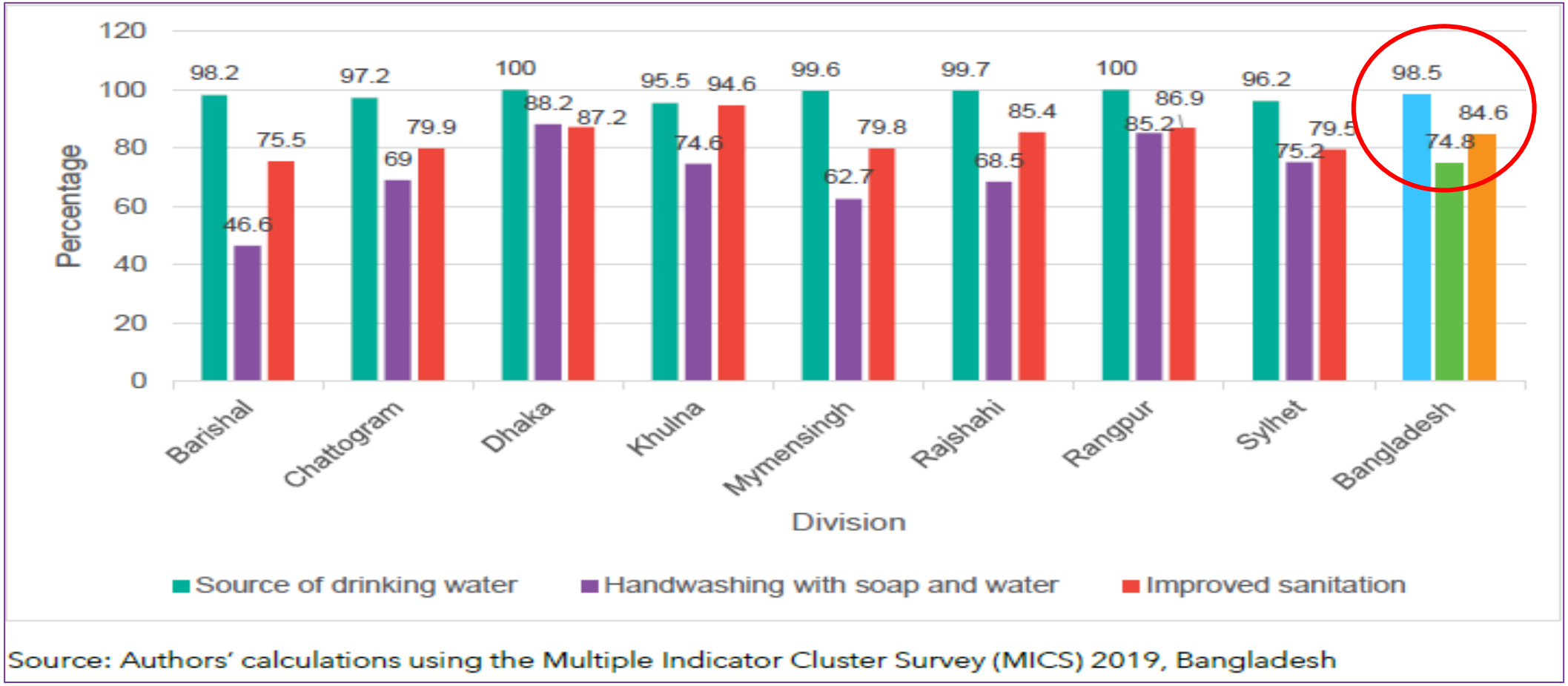
Percentage of women of reproductive age achieving the minimum dietary diversity, by wealth quintile, 2018/19



Source: IFPRI's Bangladesh Integrated Household Survey (BIHS), 2018/2019

Accessibility

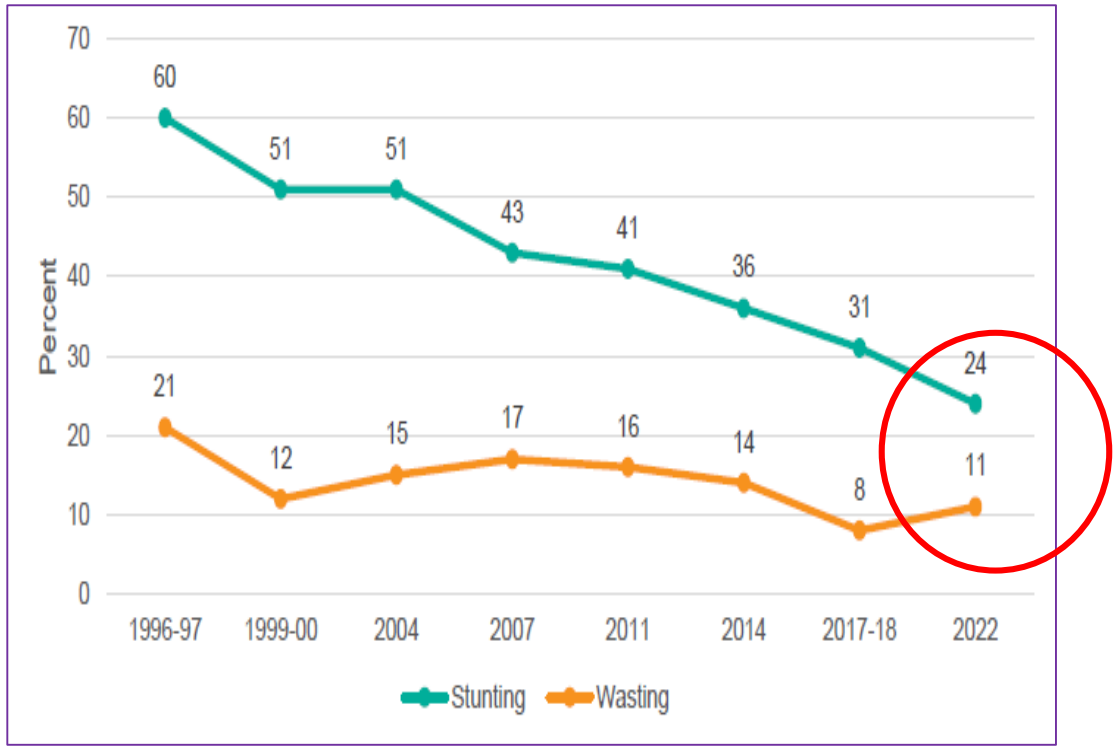
Percentage of improved source of drinking water, handwashing with soap and water and improved sanitation, 2019



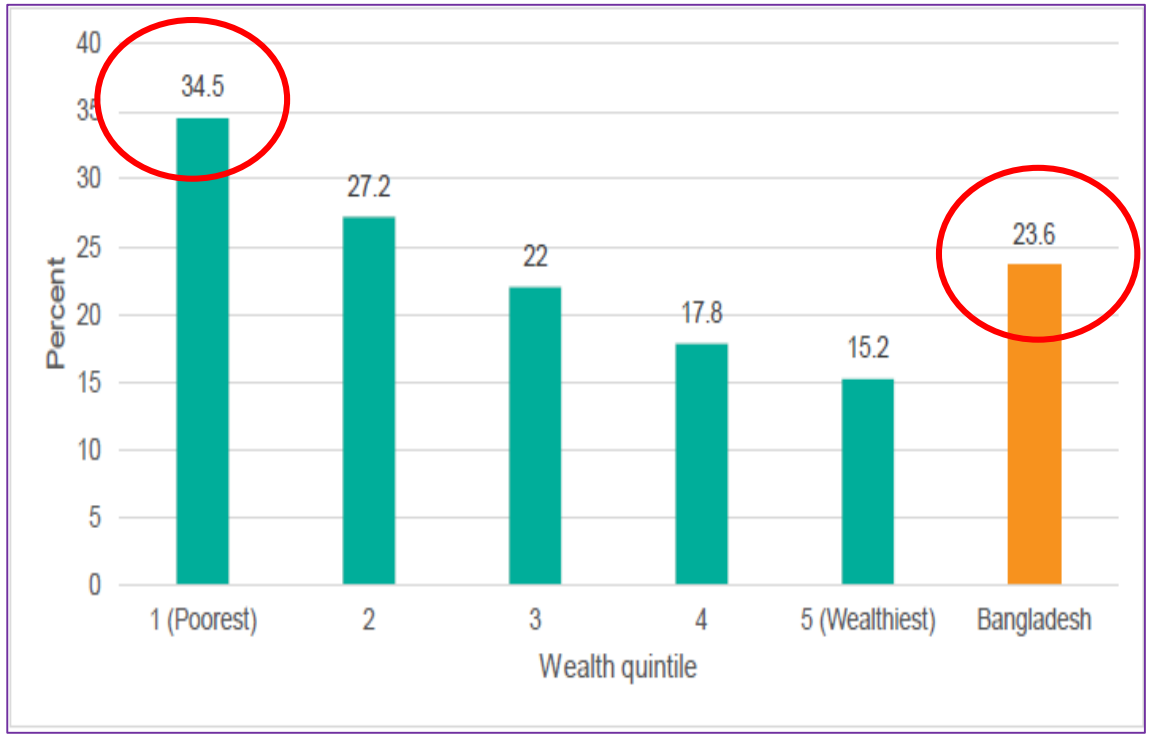
Source: Authors' calculations using the Multiple Indicator Cluster Survey (MICS) 2019, Bangladesh

Utilization

Trends of stunting and wasting of children under age 5, 1996-97 to 2022



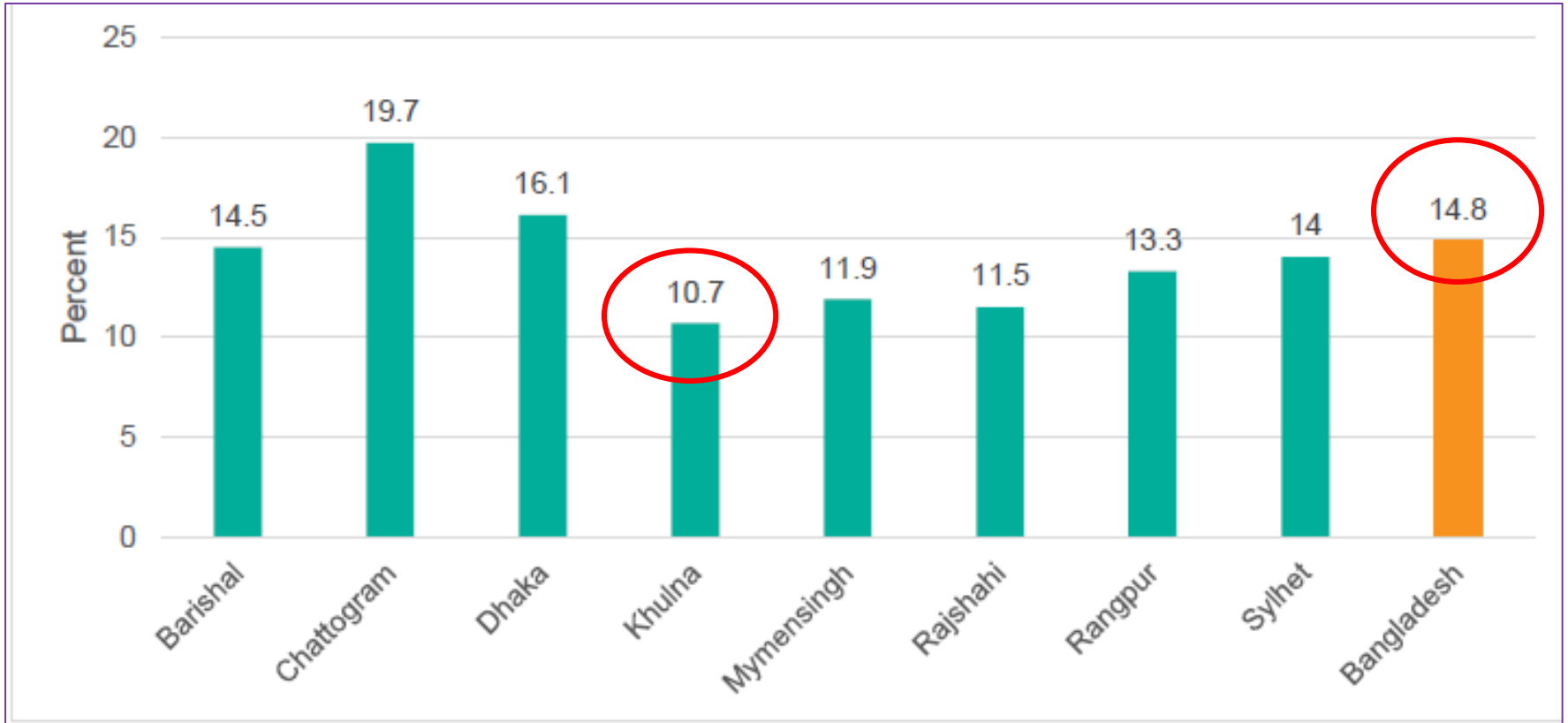
Prevalence of child stunting (0 to 59 months), by wealth quintile, 2022



Source: Bangladesh Demographic and Health Survey (BDHS), 1996-97 to 2022, national

Utilization

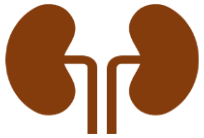
Percentage of low birth weight (below 2,500 grams), by division, 2019



Source: Authors' calculations using the Multiple Indicator Cluster Survey (MICS) 2019, Bangladesh

Prevalences of Some Non-Communicable Diseases

Utilization

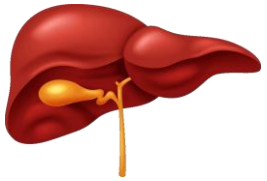


Chronic Kidney Disease[a] **22.48%.**

Hypertension[c] **21%**

Diabetes[c] **8.3%**

Cardioascular Diseases[c] **10%**

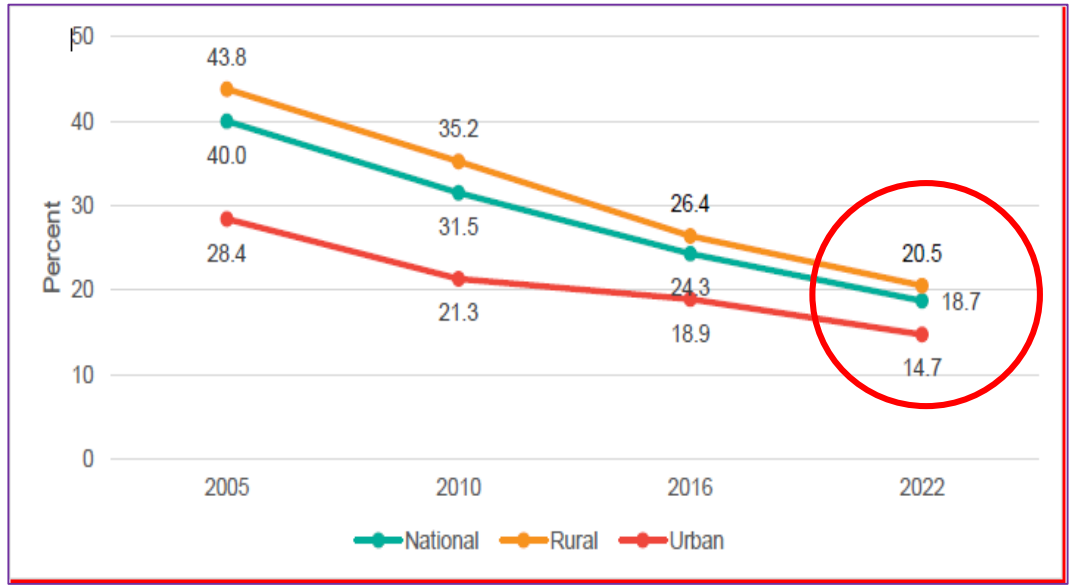


Non Alcoholic Fatty Liver Disease[b] **33.86%**

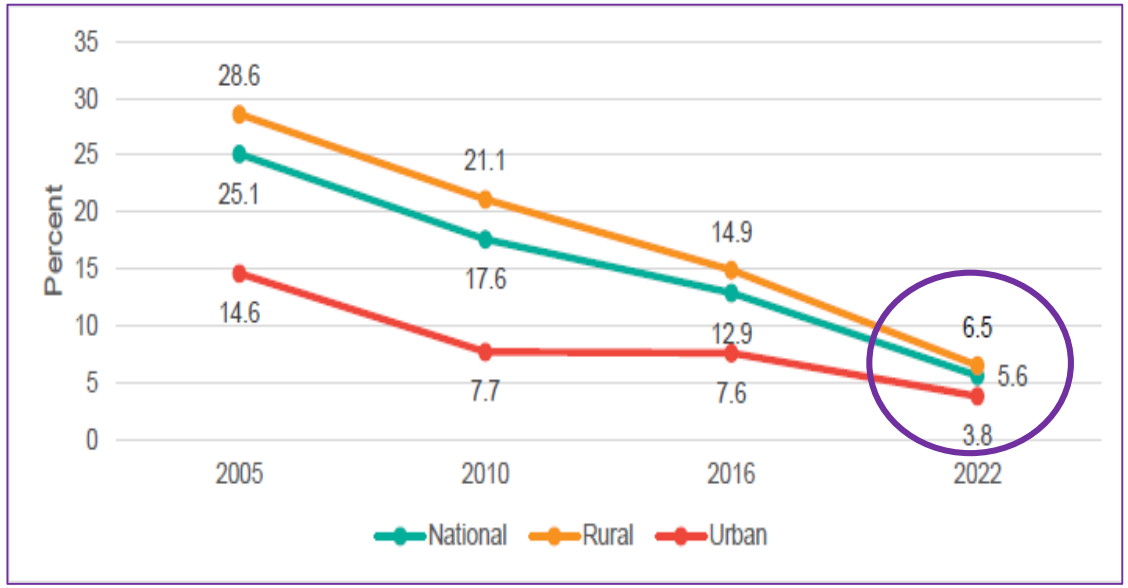
[a] **Prevalence of chronic kidney disease in Bangladesh: a systematic review and meta-analysis**
[b] **Prevalence and risk factors of non-alcoholic fatty liver disease in Bangladesh**
[c] **STEPS 2018**

Stability

Poverty trends in Bangladesh by rural and urban areas, based on the upper poverty line (headcount rates)



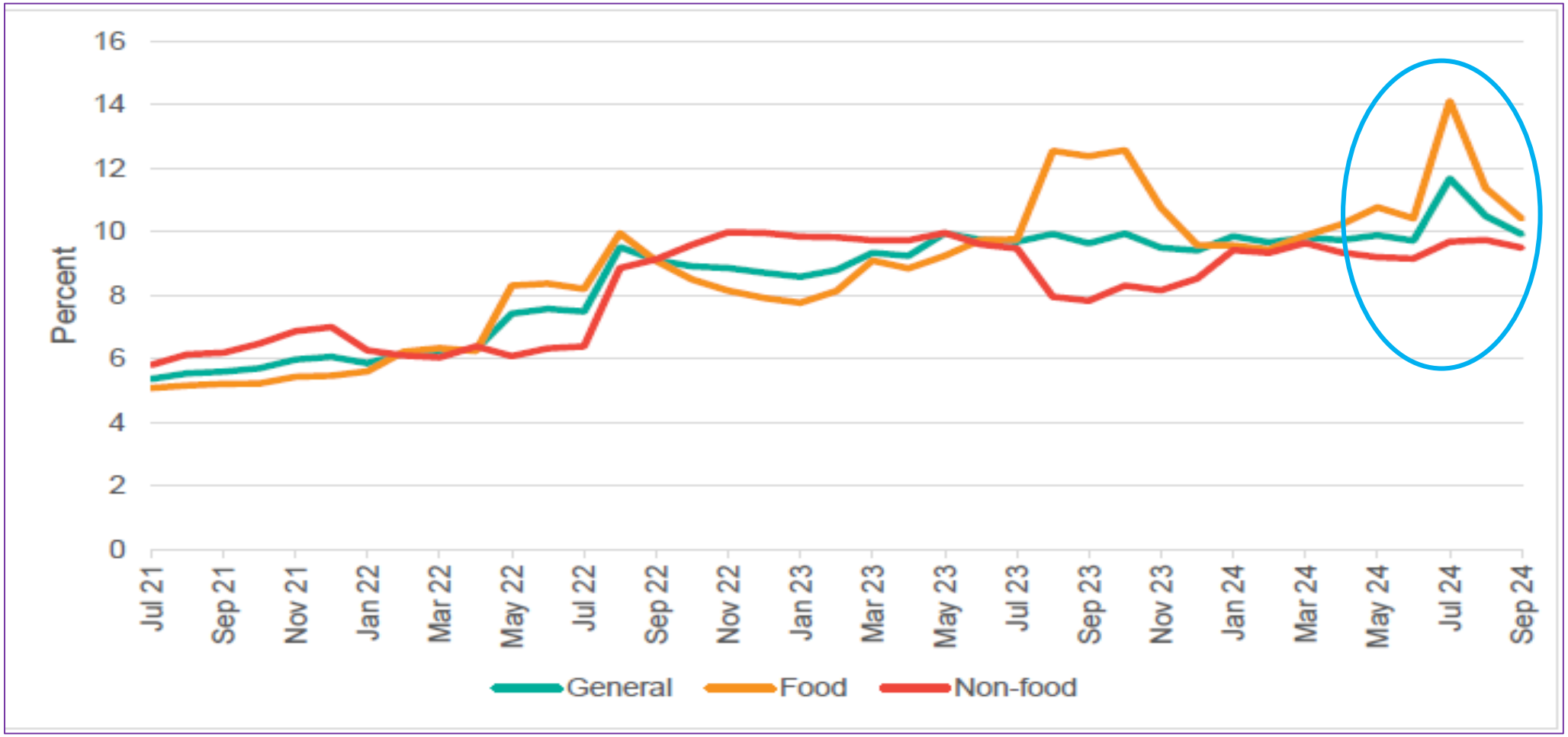
Poverty trends by rural and urban areas, based on the lower poverty line (headcount rates)



Source: Report on Household Income and Expenditure Survey 2022

National inflation rates (Base: 2021/22, year-on-year, July 2021-September 2024)

Stability



Source: Bangladesh Bureau of Statistics (BBS). Monthly series on Consumer Price Index (several issues).

Changes in the prevalence of food insecurity

Food insecurity level	2014-2016	2018-2020	2018/20: Percent point change compared to 2014/16
Prevalence of severe food insecurity (%)	13.3	10.5	-2.8
Prevalence of moderate or severe food insecurity (%)	32.2	31.9	-0.3

Source: State of Food Insecurity Report, 2021

sustainability

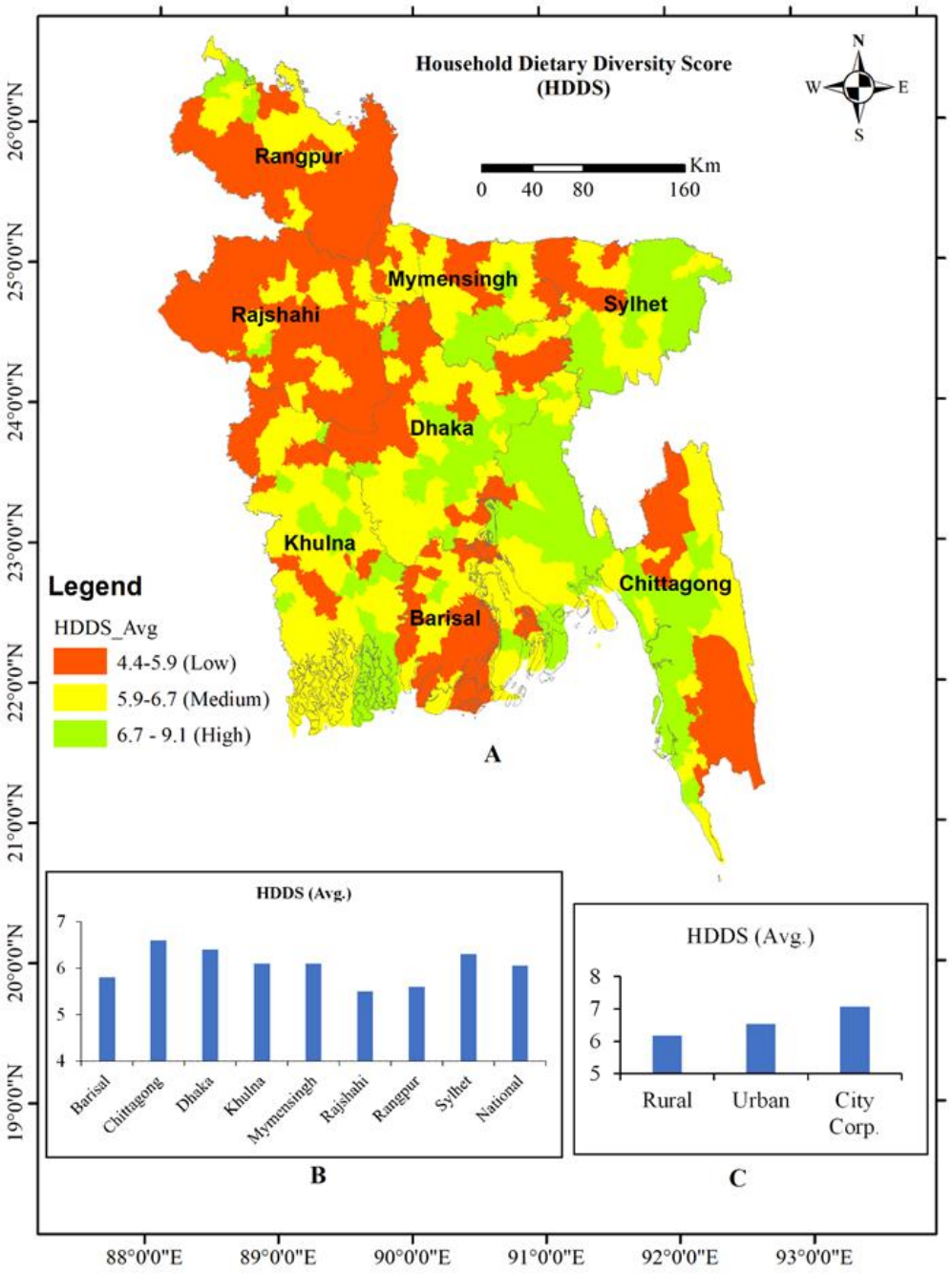
MDPI

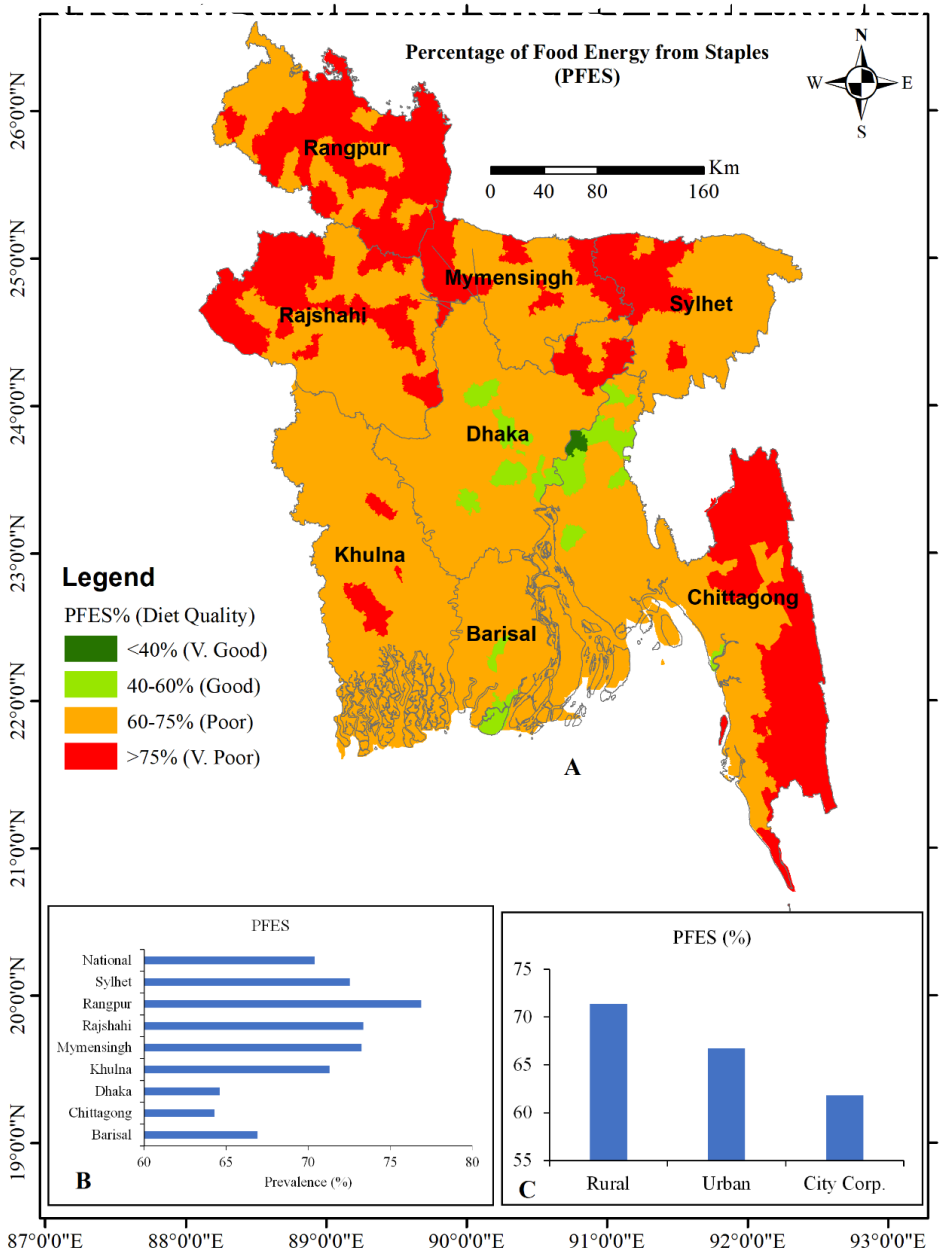
Article

Spatial Differences in Diet Quality and Economic Vulnerability to Food Insecurity in Bangladesh: Results from the 2016 Household Income and Expenditure Survey

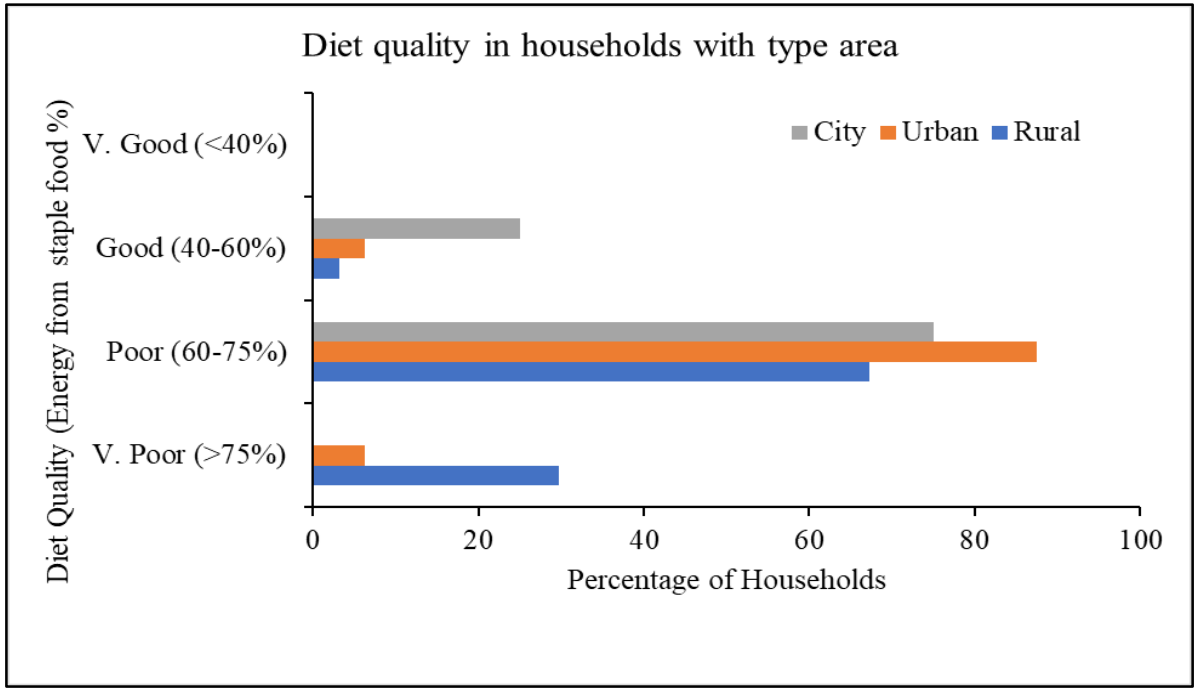
Mst. Maxim Parvin Mitu [1,2], Khaleda Islam [1], Sneha Sarwar [1], Masum Ali [3] and Md. Ruhul Amin [1,*]

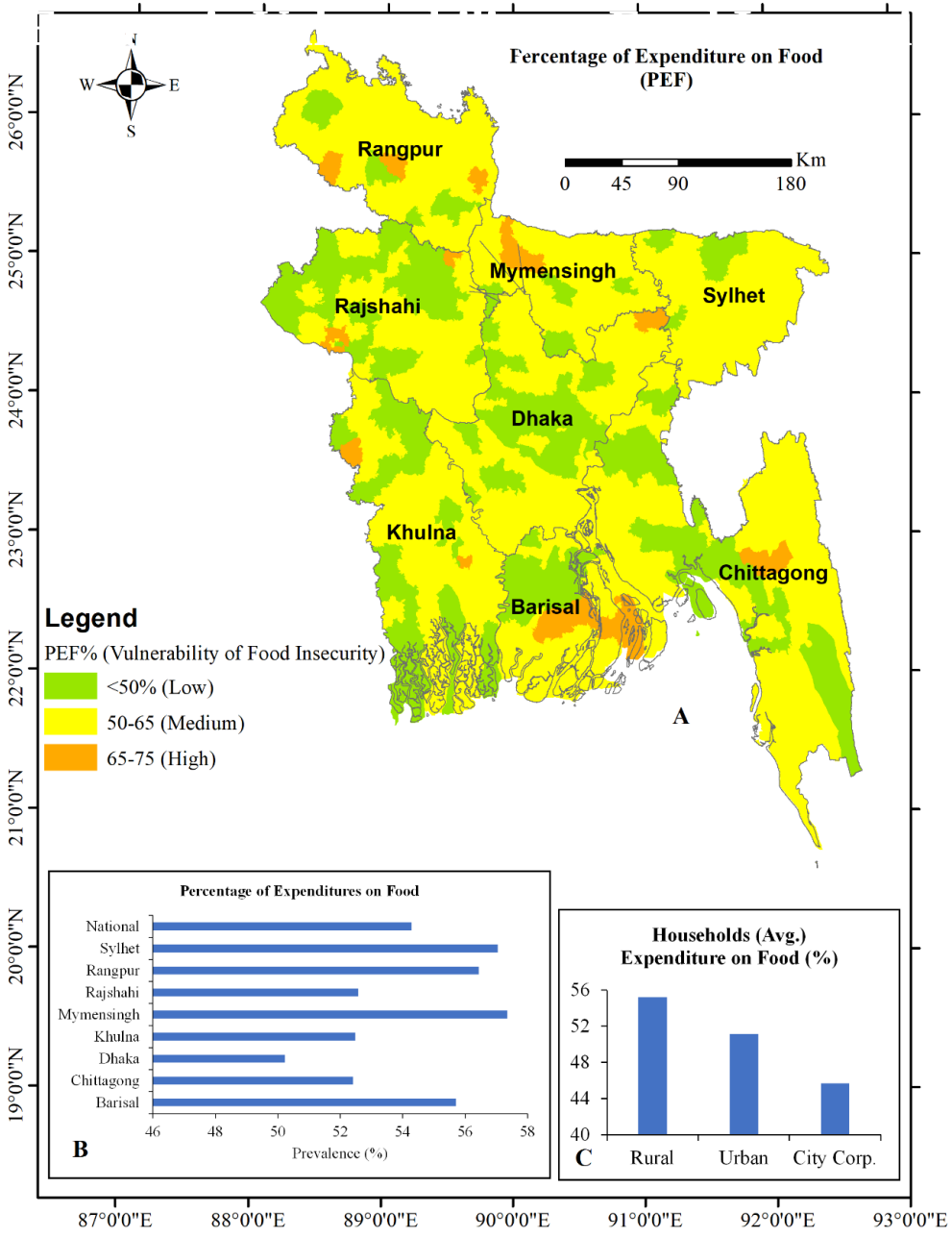
- The average national diet diversity was about 6.3 in Bangladesh during the study period.
- Divisionally, the range of HDDS was from 5.6 to 7.2.
- Rural regions in terms of settlements and the north, northwest, and southeastern regions had mostly low diet diversity.
- The highest average household diet diversity prevailed in Chittagong and the lowest in the Rajshahi division
- Low dietary diversity was observed in rural areas



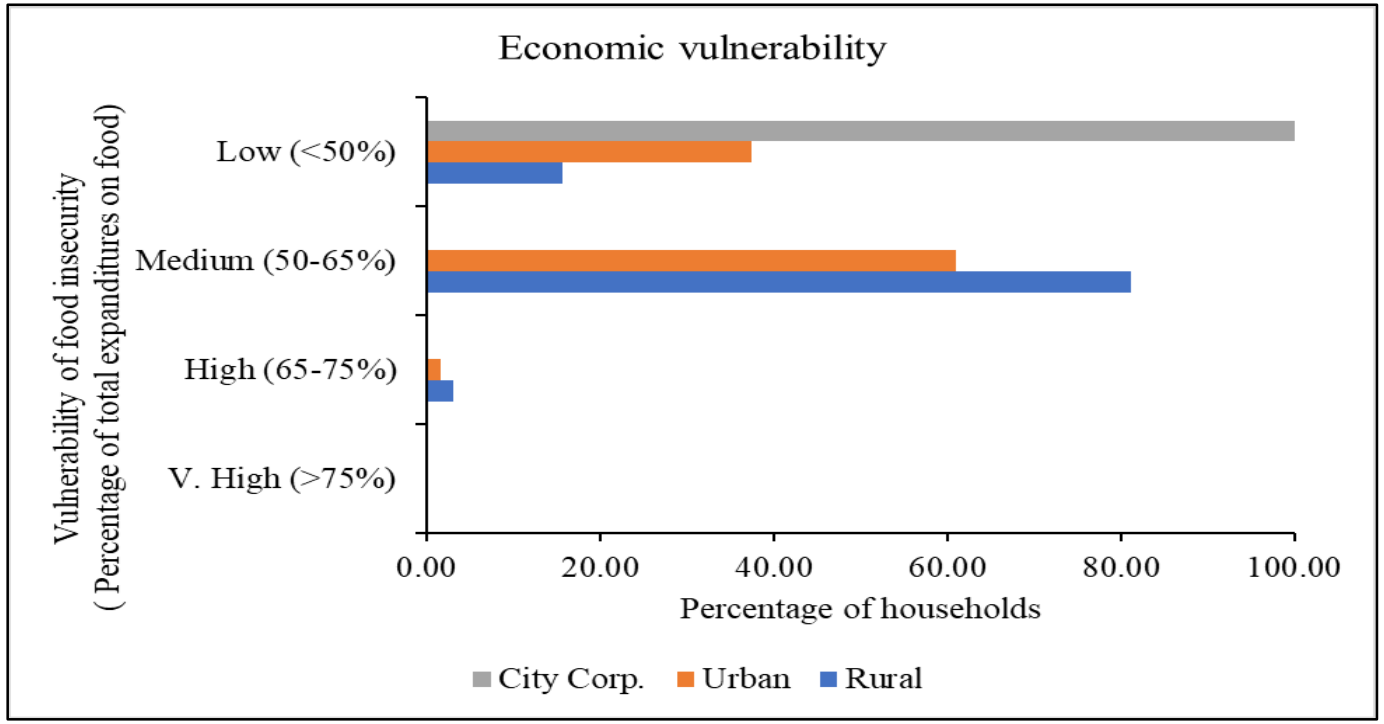


- North, north-west and southeastern regions illustrated poor diet quality having more dependence on staple as a source of energy
- central region (regions around the capital, Dhaka) showed better diet quality with lesser dependence on staples
- Poor quality diet in terms of high PFES also prevailed in rural areas (71%) among different kinds of settlements, highest in Rangpur (77%) and lowest in Chittagong (64%) among all divisions





- Medium level of vulnerability prevailed throughout the country, showing yellow color
- Central parts of the country seemed to be at the lowest risk of vulnerability, showing green
- Mymensingh division observed highest vulnerability to food insecurity and Dhaka division had the lowest
- In terms of settlements, rural areas had comparatively high PEF i.e., high EVFI



Percent distribution of households with zero consumption of various food groups across divisions during the survey (2016-2017)

Food groups	Barisal	Chittagong	Dhaka	Khulna	Mymensingh	Rajshahi	Rangpur	Sylhet	Rural	Urban
Fruits	40.2	17.3	26.5	26.2	35.8	48.9	60.1	45.7	38.0	23.8
Meat and poultry	36.8	21.4	18.3	30.3	30.7	35.2	36.6	44.1	33.1	15.7
Eggs	16.0	13.0	10.0	12.6	13.8	26.4	24.2	28.5	18.9	10.1
Fish	1.6	0.4	0.2	0.9	0.2	3.6	4.7	0.4	1.6	0.8
Pulses/legumes/nuts	2.6	2.5	2.9	4.5	5.3	12.4	18.6	3.8	7.4	2.9
Milk and milk products	67.4	41.6	39.4	60.0	46.9	54.4	67.5	51.3	52.6	43.5

DIETARY TREND (1985-2010)

- Fish is the most common animal source food in Bangladesh in Bangladeshi diet for all sub groups whether poor/rich or rural/ urban residents
- Egg, meat, and milk consumption has increased gradually, especially among people belongs to richest quintile (7% of the diet) whereas poorest quintile experienced no or little change in the diet, for example, eggs, milk, and meat contributed only 2% of the diet;
- Vegetables consumption has changed very little in the diet (~15%), and greater disparity in fruit consumption (poorest quintile diet <2% of fruit vs. 5% in the richest quintile);
- Oil consumption has doubled in all subgroups; consumption pattern has changed from mustered oil to soybean oil and palm oil
- Household diet quality has improved in rural area of Bangladesh between 2011 and 2015.

(Waid et al., 2017; IFPRI-2011 & 2015;)

Food Safety

Food safety involves handling, preparing, and storing food in ways that prevent foodborne illnesses and contamination.

It's a fundamental part of food security and contributes to human health

Biological Hazards: Microorganisms and Parasites

1 **Bacteria**

Bacteria can multiply rapidly in food, leading to spoilage and potential illness.

2 **Viruses**

Viruses cannot multiply in food but can be transmitted through cross-contamination.

3 **Parasites**

Parasites are often associated with raw or undercooked food and can cause infections.

Physical Hazards: Foreign Objects in Food

Broken Glass

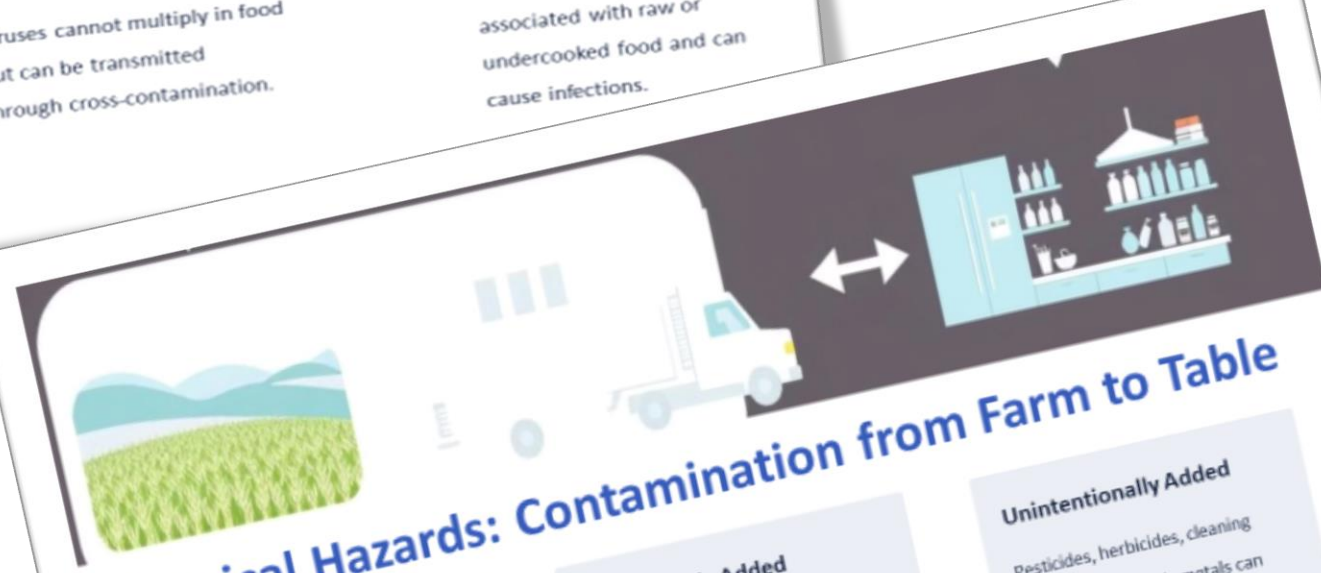
Can be introduced from broken containers or equipment.

Metal Fragments

Can come from machinery or packaging materials.

Plastic Pieces

Can be introduced from packaging or processing equipment.



Chemical Hazards: Contamination from Farm to Table

Naturally Occurring

Allergens, biotoxins, and histamines are naturally present in some foods.

Intentionally Added

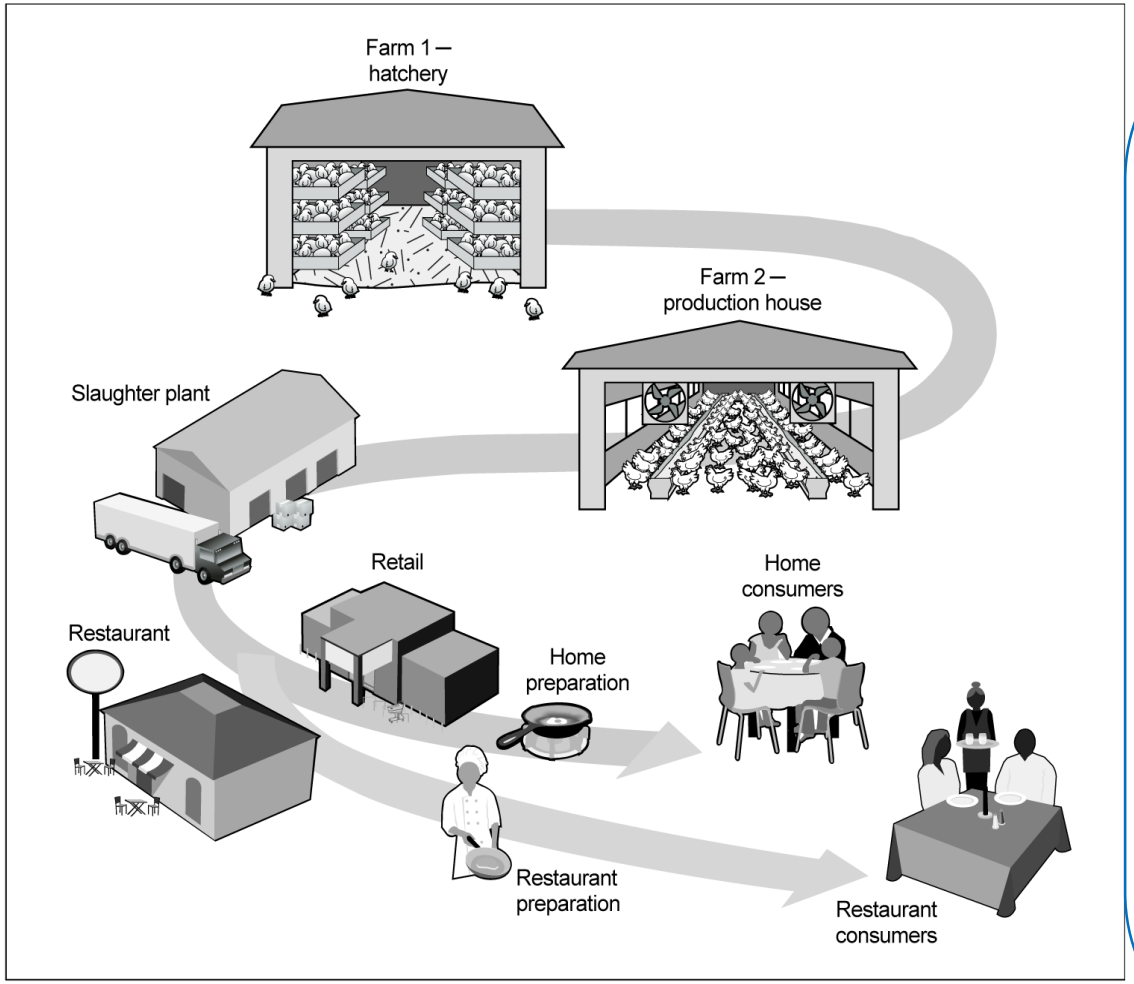
Preservatives, additives, and colorants can be added to food, but exceeding safe levels can be harmful.

Unintentionally Added

Pesticides, herbicides, cleaning chemicals, and toxic metals can unintentionally contaminate food.

Access to sufficient amounts of safe and nutritious food is key to sustaining life and promoting good health.

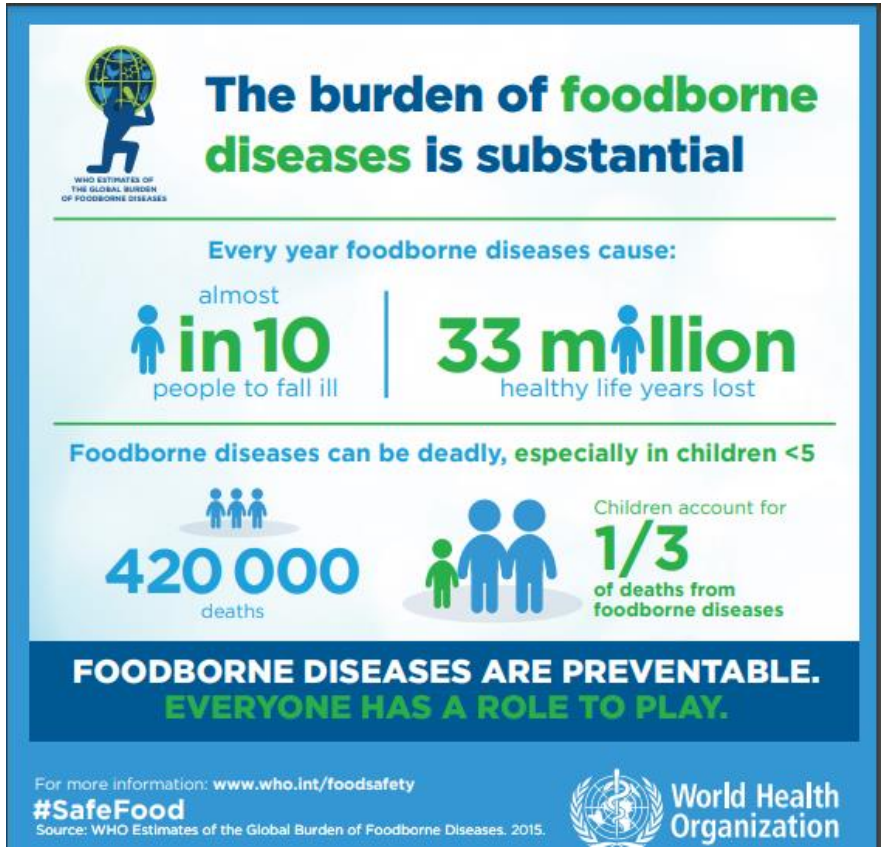
FARM-TO-TABLE CONTINUUM FOR POULTRY PRODUCTS



Sources: GAO and Centers for Disease Control and Prevention. | GAO-14-744

- More than 200 diseases are transmitted through food:
  - Diseases are short and long-term
  - Caused by microorganisms and chemical contaminants
- Most foodborne diseases can be prevented by safe food handling practices

THE BURDEN OF FOODBORNE DISEASES



The 2015 WHO reported that 31 foodborne agents (bacteria, viruses, parasites, toxins and chemicals) are at global and regional level

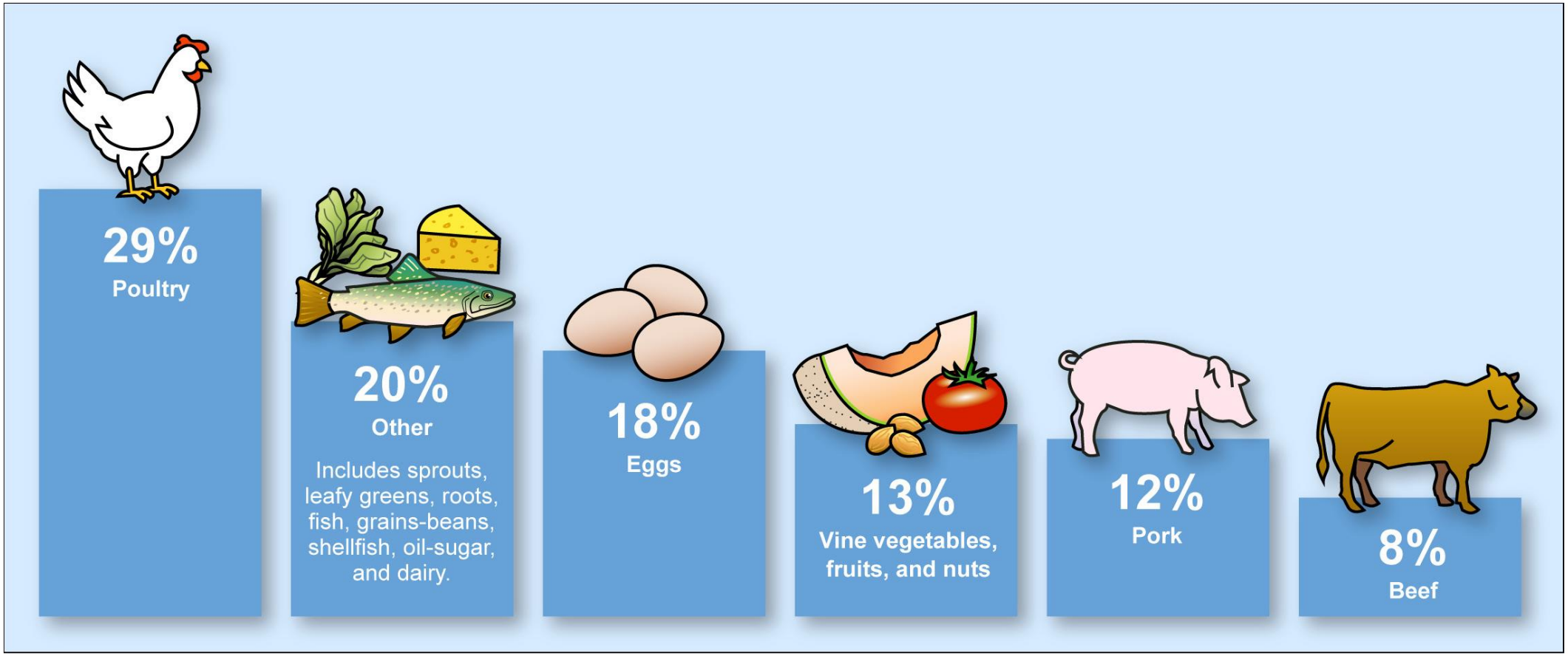
PEOPLE MOST AT RISK

a. ***The elderly***
b. ***Babies and toddlers***
c. ***Pregnant women***
d. ***Individuals who are already unwell***

Economic consequences of food borne diseases

- Direct economic costs incurred, including the cost of medical treatment and industry losses
- WHO estimates that in the USA the major food-borne diseases have an annual cost of up to US$35 billion
- The cost of salmonellosis in England and Wales in 1992 was estimated at between US$560 million and US$800 million

Foods Associated with One-Third of Salmonella Outbreaks, 2004 through 2008



Source: GAO figure derived from Centers for Disease Control and Prevention data. | GAO-14-744

Salmonella Outbreaks

BANGLADESH FOOD SAFETY SCENARIO

29

"Bangladesh Constitution"

It shall be a fundamental responsibility of the state to secure to the citizens provision of the basic necessities of life including food (Article 15)

The State shall raise the level of nutrition and improve public health as its primary duties (Article 18)

International Journal of Environmental Research and Public Health

MDPI

Review

Heavy Metal and Metalloid Pollution of Soil, Water and Foods in Bangladesh: A Critical Review

M. Mominul Islam [1,2], Md. Rezaul Karim [3,*], Xin Zheng [1] and Xiaofang Li [1,4,*]

- Soils near high-traffic and industrial areas contain elevated concentrations of heavy metals and metalloids.
- Agricultural lands and vegetables in sewage-irrigated areas are contaminated with heavy metals and metalloids.
- Rivers Buriganga, Turag, Shitalakhya, and Karnaphuli are heavily contaminated with:
  - Cadmium (Cd)
  - Lead (Pb)
  - Chromium (Cr)
- Groundwater Arsenic (As) Pollution

Environmental Science and Pollution Research (2022) 29:3230–3245
https://doi.org/10.1007/s11356-021-17153-7

REVIEW ARTICLE

Check for updates

Heavy metals contamination and associated health risks in food webs—a review focuses on food safety and environmental sustainability in Bangladesh

Aniruddha Sarker[1,6] · Jang-Eok Kim[1] · Abu Reza Md. Towfiqul Islam[2] · Muhammad Bilal[3] · Md. Refat Jahan Rakib[4] · Rakhi Nandi[1,7] · Mohammed M. Rahman[8] · Tofazzal Islam[5]

- **Heavy Metal Contamination:** Found in crops, fish, dairy, and water bodies in Bangladesh.
  - Lead in mango,
  - cadmium in tomatoes, and
  - arsenic in tilapia exceed WHO/FAO limits, posing health risks.
- **Unsafe Drinking Water:** Groundwater in Dhaka and Jamalpur contains unsafe levels of lead and arsenic, with poor water quality per the Heavy Metal Evaluation Index (HMEI).
- **Urban Agriculture:** Rooftop gardens in cities are polluted with heavy metals, contaminating vegetables and requiring monitoring for food safety.
- **Metal Uptake in Crops:** Heavy metals (Cu, Ni, Cd, Pb, Cr, Zn) are absorbed by plants near industrial and urban areas, affecting crop safety.
- **Research and Policy Needs:** Further studies on contamination sources and pathways are needed, alongside policies to mitigate risks and improve food safety.

frontiers | Frontiers in Environmental Science

TYPE Systematic Review
PUBLISHED 08 August 2024
DOI 10.3389/fenvs.2024.1425286

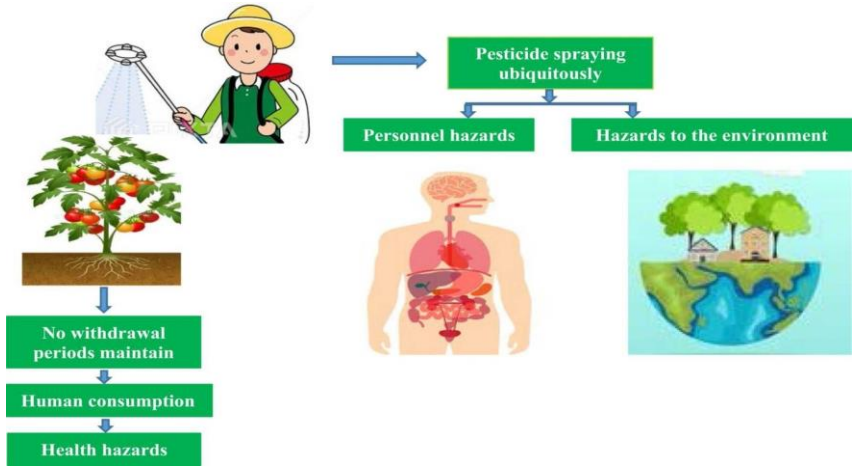
A systematic review on heavy metals contamination in Bangladeshi vegetables and their associated health risks

- **Heavy Metal Concentrations:** Mean levels of As, Pb, Cd, Cr, Mn, Ni, Zn, and Cu in vegetables ranged from 0.02–175.77 mg/kg, with As, Pb, and Cd exceeding the maximum allowable concentration (MAC).
- **Daily Intake:** Despite elevated levels, daily consumption of metals across all vegetables remained below the maximum tolerable daily intake (MTDI).
- **Health Risks:**
  - **Non-carcinogenic risks** (THQ > 1) posed by As and Pb in vegetables like cabbage, string bean, and bottle gourd.
  - **Carcinogenic risks** (TR > 10^{-4}) linked to As, Cd, Cr, and Ni, potentially increasing the risk of cancers like stomach and lung cancer.
- **Recommendation:** An integrated approach is needed to mitigate contamination and protect consumer health.

Toxicology Reports
Volume 11, December 2023, Pages 199-211

Pesticides in vegetable production in Bangladesh: A systemic review of contamination levels and associated health risks in the last decade

Popy Khatun [a], Arup Islam [b], Sabbya Sachi [a], Md. Zahorul Islam [a], Purba Islam [a]



Pesticide Use and Contamination: Common pesticides include organophosphorus, pyrethroids, and neonicotinoids; 29% of samples were contaminated, with 73% exceeding MRLs.

Affected Vegetables: Most contaminated were cucumber (51%), tomato (41%), and cauliflower (31%); highest above-MRL contamination in gourds (100%) and beans (92%).

Health Risks: Hazard Quotients (HQ >1) found in tomato, eggplant, and beans; highest HQ for cypermethrin in beans (aHQ=255, cHQ=510).

Impact and Solutions: Pesticides harm air, soil, and water; calls for policies to reduce use and raise public awareness.

Food Science and Quality Management
ISSN 2224-6088 (Paper) ISSN 2225-0557 (Online)
Vol.119, 2022
www.iiste.org

Hygiene Practices in the Restaurants of Dhaka North City Corporation, Bangladesh

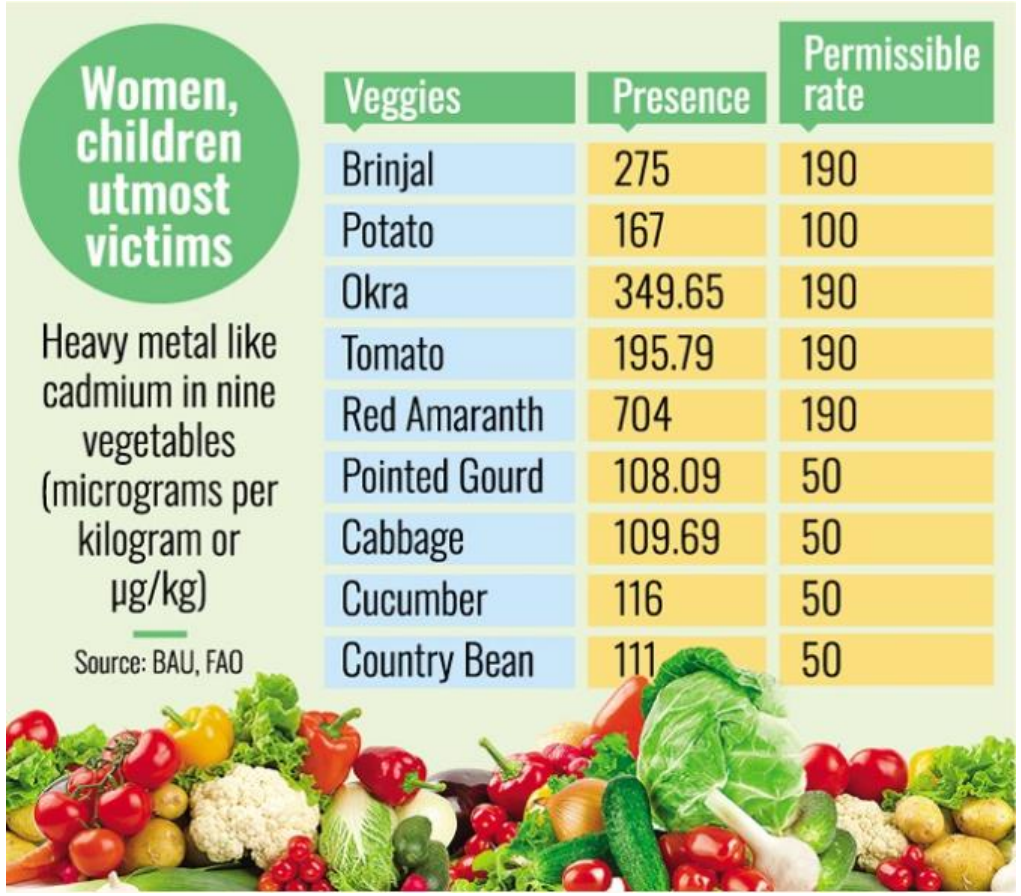
- **Study Overview:**

Observed hygiene practices in 134 restaurants using a structured checklist; hygiene practices categorized as acceptable, moderately acceptable, and unacceptable.

- **Key Findings:**
  - 79.9% lacked toilet facilities , and 12.7% were located near unhygienic areas.
  - Only 9% of restaurants practised good hygiene; 44.7% were mostly unhygienic.
- **Food Handlers:** Many did not adhere to proper dress codes while serving food, highlighting unsafe practices.
- **Recommendations:** Findings can guide policymakers in improving restaurant hygiene and raising consumer awareness.

Heavy metal, pesticides residue in BD vegetable, fruits

FE REPORT | Tuesday, 24 September 2024



Veggies	Presence	Permissible rate
Brinjal	275	190
Potato	167	100
Okra	349.65	190
Tomato	195.79	190
Red Amaranth	704	190
Pointed Gourd	108.09	50
Cabbage	109.69	50
Cucumber	116	50
Country Bean	111	50

- Health Risks: Studies found high levels of heavy metals in vegetables (e.g., red amaranth, brinjal) and pesticide residues in 10% of fruit samples, posing cancer and health risks.
- Contamination Sources: Heavy metal levels varied by district, with red amaranth showing the highest contamination. Pesticides exceeded safe limits in fruits like litchi and mango.
- Recommendations: Avoid contaminated cultivation areas, improve screening, promote awareness, and enforce regular market surveillance to reduce health risks.

The Daily Star

Editorial

Food safety crisis demands immediate attention

Sat Sep 28, 2024 01:00 PM
Last update on: Sat Sep 28, 2024 12:59 PM

- **Food Safety Concerns:** Studies show harmful chemicals in vegetables, fruits, fish, poultry, and milk in Bangladesh remain a significant issue.
- **Recent Findings:** High levels of heavy metals were detected in vegetables like red amaranth, brinjal, cabbage, and okra, while 10% of tested fruits contained pesticide residues.
- **Health Risks:** Contaminants such as heavy metals and pesticides are linked to cancer and other serious health complications.

THE BUSINESS STANDARD

SUNDAY, DECEMBER 29, 2024

TBS Report
06 June, 2024, 04:55 pm
Last modified: 06 June, 2024, 04:59 pm

Every day, approximately 1.6m people worldwide fall ill due to the consumption of unsafe food, said Saima Wazed, WHO regional director for South-East Asia.

- **Food Safety Challenges:** Unsafe food impacts 1.6 million people daily, 40% being children under 5, causing malnutrition, deaths, and $110 billion in annual losses, with South-East Asia heavily affected.
- **Stakeholder Roles:** Governments must enhance food safety systems and collaborate across sectors. Producers ensure safety practices and hygiene, while consumers adopt safe food handling and report issues.

Dhaka Tribune

Adulterated-food culture in Bangladesh: A new form of epidemic

Chemicals like formalin, carbide, and pesticides are among the adulterants used in food products

Health Impact: Widespread food adulteration in Bangladesh causes severe health issues like cancer and kidney failure, with children under five most affected. Foodborne illnesses reduce GDP by 2% annually.

Causes: Weak regulation, consumer unawareness, and economic pressures lead to harmful additives being used to enhance food appearance and volume.

Solutions: Strengthen food safety laws, improve monitoring, educate consumers, and support farmers in adopting safer, sustainable practices.

The Daily Star

Back Page

Food-borne diseases kill 2m a year: WHO

Wed Apr 8, 2015 12:00 AM
Last update on: Sun Apr 12, 2015 12:21 AM

- Foodborne Disease Impact: Annually, 2 million deaths and 582 million cases occur globally, with Africa and South-East Asia most affected, especially children under five.
- Economic Risks: Unsafe food causes crises like Germany's 2011 E. coli outbreak ($1.3 billion loss) and is worsened by globalization complicating contamination tracking.

daily sun

Update : 2019-07-24 00:00:00

Rampant Food Adulteration and Its Impacts

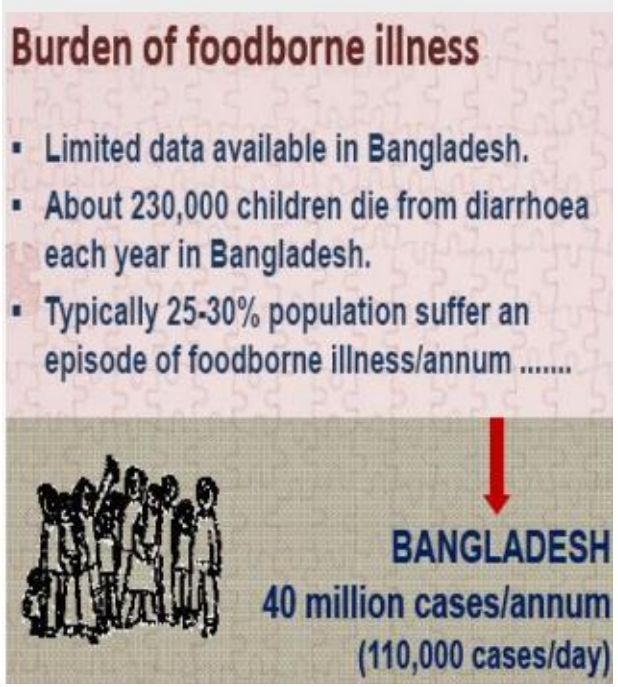
Md Khaled Bin Chowdhury

- The IPHN Bangladesh has found **adulteration** in 43 consumer goods
- The rate of the adulteration is 40% in 30 food items and nearly 100% in 13 items
- **Colouring agents** chrome, tartrazine, yellow and sudan red colours and erythrosine are being used in spices, sauces, juices, lentils, oil
- **Formalin and carbide** used in fish, fruit, meat and milk
- **Rye** flour used in barley, bread and wheat flour
- **Urea** used in puffed rice and rice
- **Sulfuric acid** used in milk, oleomargarine or lard
- **DDT** applied in dried fish

According to the WHO & FAO, nearly **4.5 million people** in Bangladesh are being infected with various diseases every year **owing to food adulteration**

BURDEN ON PUBLIC HEALTH

- **Diarrhoea**
  - 3 million cases reported (DGHS; 2005-09)
  - Responsible for 15% of mortality in children under 5 years (2011)
- **Long term health effects**
  - Renal failure
  - Liver damage
  - Cancer
- **Large scale adulteration**
  - **40-60% food** samples found adulterated in Dhaka (IPH)
  - Extent and severity of food-borne illnesses unknown



icddr,b registers 8,500 cases of diarrhoea over a week in an unforeseen spike

An alarming uptick in diarrhoea cases has become a cause for concern for cholera hospital at the International Centre for Diarrhoeal Disease Research, Bangladesh.

Senior Correspondent · · bdnews24.com

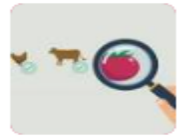
Published : 28 March 2022, 08:54 PM ·Updated : 28 March 2022, 11:01 PM

FE The Financial Express

Adulterated food poses threat to public health

In the fiscal year (FY) 2020-21, the Bangladesh Food Safety ... the authorities concerned to remove 52 food items of different brands from...

Oct 15, 2021



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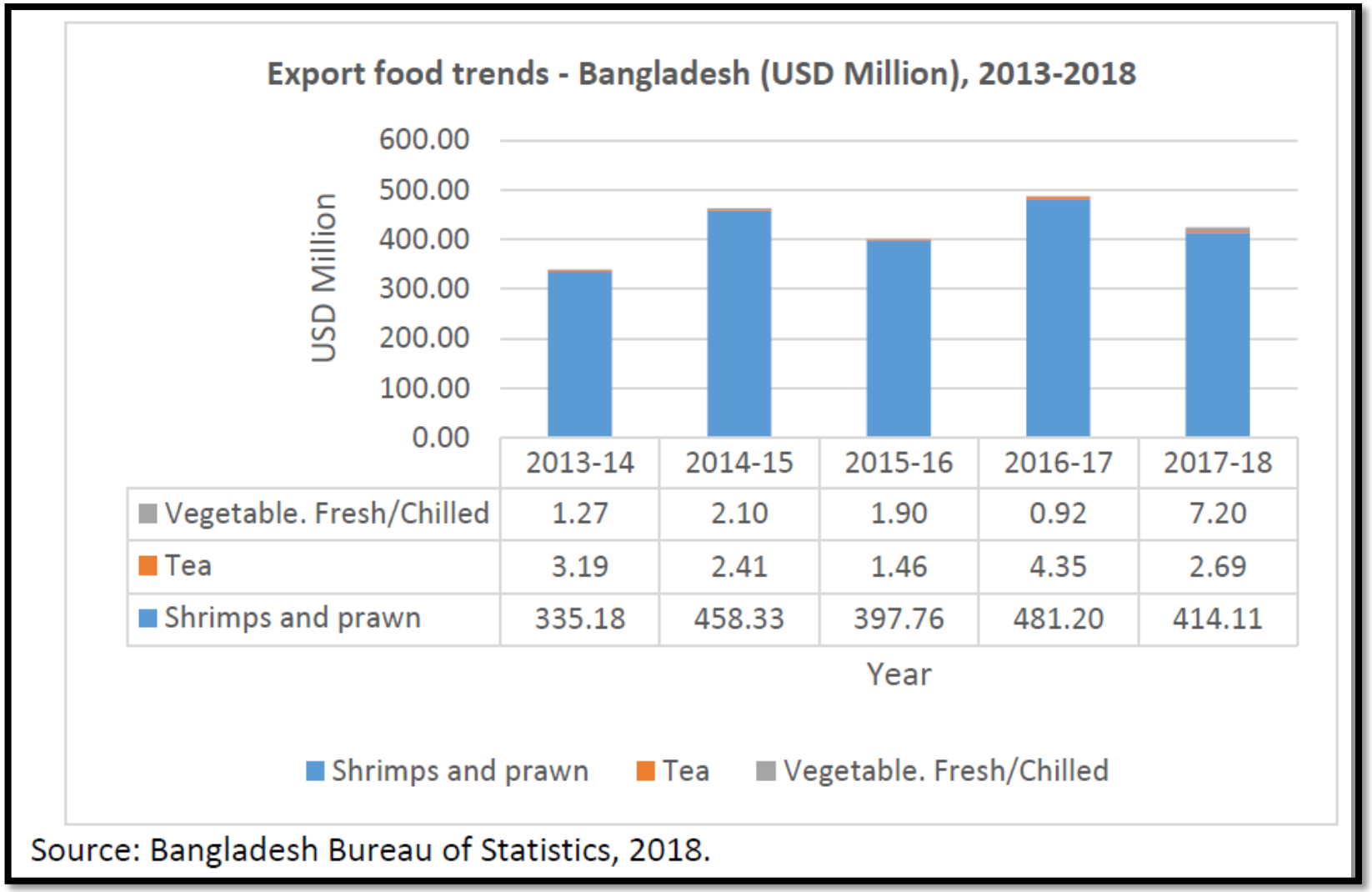
BANGLADESH FOOD SAFETY MANAGEMENT SYSTEM

Current situation on food safety management systems

- In Bangladesh, interest regarding food safety has increased in recent years, expansion with urban population and the middle class
- 140 processed food products from Bangladesh are exported to 144 countries worldwide
- Food hygiene and safety in Bangladesh is attracting overseas attention



Source: Bangladesh Bureau of Statistics, 2018.

FOOD SAFETY POLICY AND REGULATIONS

- Food Safety Act, 2013 (2013-10-10)
- Food Safety (Food seizure and administration system) Rules, 2014
- The Food Safety Act – Functioning Notice, 2015
- Bangladesh Food Safety Authority – Gadget Notice, 2015
- Food Safety (Labeling) Regulations, 2017
- Food Sample collection, testing and analysis Regulations, 2017
- Food Safety (Technical Committee) Rules, 2017
- Use of Food Additives Regulations, 2017-05-09
- Food Safety (Contaminants, Toxins and Harmful Residues) Regulations, 2017
- Bangladesh Food Safety Authority Employee Job Regulation, 2018
- Food Safety (Food Hygiene) Regulations, 2018
- Bangladesh Food Safety Authority Financial Rules ,2019
- Food Safety (Food Contact Material) Regulations, 2019
- Bangladesh Standards and Testing Institution Act 2018
- Bangladesh Standards of Weights and Measures Act 2018
- Animal Slaughter and Meat Quality Control Act, 2011
- Animal Disease Act, 2005
- Fish Feed and Animal Feed Act, 2010
- Pesticides Act 2018
- Fisheries Quarantine Act 2018
- Import Policy Order 2015-2018
- Export Policy 2018-2021
- Fish and Fish Product (Inspection and Quality Control) Ordinance, 1983
- Fish and Fish Product (Inspection and quality control) Rules, 1997 (amended in 2008, 2014 and 2017)
- Marine Fisheries Ordinance, 1983
- Marine Fisheries Rules, 1983
- Fish Hatchery Act, 2010
- Fish Hatchery Rules, 2011
- Fish Feed and Animal Feed Act, 2010
- Fish Feed Rules, 2011
- Fish Quarantine Act 2018

OVERVIEW OF INSTITUTIONS INVOLVED IN FOOD SAFETY IN BANGLADESH

- Bangladesh Food Safety Authority (BFSA)
- Bangladesh Standards and Testing Institution (BSTI)
- Directorate General of Health Services (DGHS)
- Bangladesh Council of Scientific and Industrial Research (BCSIR)
- Directorate General of Food
- Department of Agricultural Extension
- Institute of Epidemiology Disease Control and Research (IEDCR)
- Institute of Public Health (IPH)
- Department of Livestock Services (DLS)
- Department of Fisheries (DOF)
- Local Government Division (LGD)

There are 24 ministries and departments involved in food safety administration:

1. Ministry of Food
2. Ministry of Agriculture
3. Ministry of Fisheries and Livestock
4. Ministry of Science and Technology
5. Ministry of commerce
6. Ministry of Environment and Forest
7. Ministry of Industry
8. Ministry of Health and Family Welfare
9. State Ministry
10. Cabinet Division
11. Local Government Division
12. Institute of Epidemiological Disease Control and Research
13. Department of Agriculture Extension
14. Department of Fisheries
15. Department of Livestock service
16. Directorate of National Consumer Protection
17. Bangladesh Standards and Testing Institution
18. Bangladesh Accreditation Board
19. Department of Public Health Nutrition
20. Directorate of Environment
21. Directorate General of Health Services
22. Bangladesh Atomic Energy Commission
23. Bangladesh Atomic Energy Authority
24. Directorate General of Food

Food Safety Testing and Infrastructure

- Public sector testing
- Third-party food testing service providers
- National conformity assessment system

Public Food Testing Laboratories

- Department of Livestock Services
- Department of Fisheries labs
- Department of Agricultural Extension (DAE)
- Bangladesh Agricultural Research Institute
- Bangladesh Rice Research Institute
- BCSIR
- BSTI
- Institute of Public Health (IPH)
- Directorate General of Food
- Department of Environment
- Bangladesh Atomic Energy Commission (BAEC)
- BSCIC labs
- Dhaka South City Corporation
- Chittagong City Corporation
- Department of Public Health Engineering (DPHE)
- Department of Microbiology – University of Dhaka
- Department of Chemistry – University of Dhaka

Third-party food testing service providers in the private sector

- Limited third-party or private food testing centers exist in Bangladesh
- The testing services can be categorized into:
  - Testing for regulatory/statutory compliance
  - Testing for self-compliance as part of industry's internal quality assurance and HACCP plans
  - Third-party testing to meet buyer/customer requirements (mostly for exports)

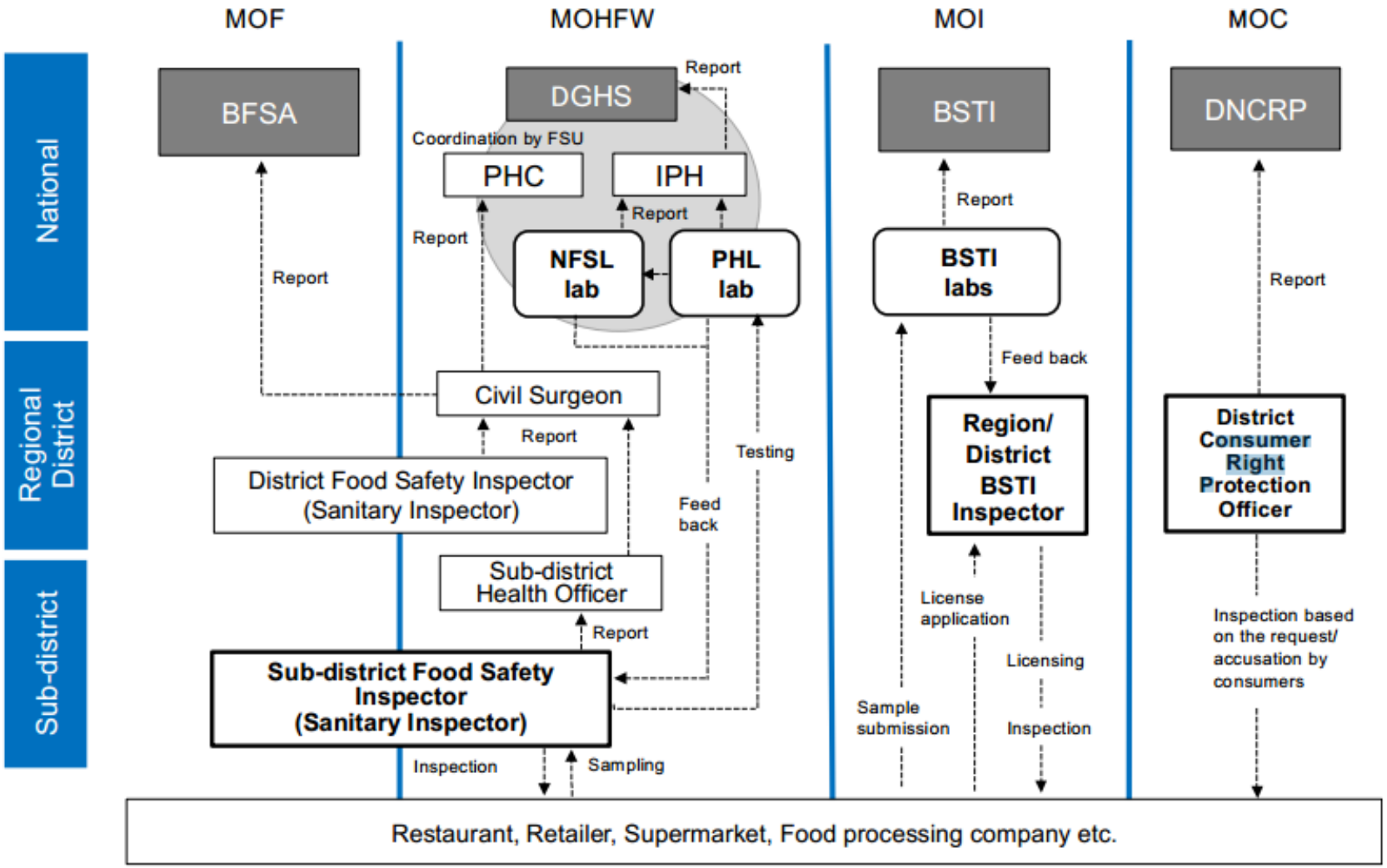
National Conformity Assessment System

- Bangladesh Accreditation Board (BAB) offers accreditation programs for various types of conformity assessment bodies:

  laboratories, certification bodies, and inspection bodies in accordance with several regulatory standards (i.e., International Organization for Standardization [ISO])

- BAB is a member of the Asia Pacific Accreditation Cooperation (APAC), the International Laboratory Accreditation Cooperation (ILAC), the Pacific Accreditation Cooperation (PAC), and the International Accreditation Forum (IAF)

Inspection and Testing System for processing foods



GOVT. EFFORT TO IMPROVE FOOD SAFETY

- **New Policies, Plans and Strategies**
- **Amendment of Acts, Laws and Rules**
- **Constructing standards;** Accomplishing standards, guidelines, procedures of the CODEX; Complementing ISO, HACCP, GMP, GHP, GAP etc.
- **Modernization of labs** under different organizations including BSTI, IFST, IPH etc.
- **Food borne disease monitoring and surveillance systems**

HACCP Food Safety Foundation

GMPs

Good Manufacturing Practices ensure safe and wholesome food production.

GAPs

Good Agricultural Practices minimize contamination risks in fruits and vegetables.

GAqPs

Good Aquaculture Practices ensure quality, safety, and sustainability in fish farming.

GHPs

Good Hygiene Practices address cleanliness, equipment, and employee hygiene.

- Strengthening information, surveillance, promoting awareness
- Activation of BAB; Accreditation of labs; setting reference lab at IPH
- Coordination: Formation of National Food Safety Management Advisory Council and Technical Committees; BFSA is underway;
- Public-Private Sector Interaction; Network/linkage building;
- Enhanced institution for Biotechnology in Bangladesh
- Activities in regional & international arena

Finalizing the Food Safety Emergency Response Plan

BANGLADESH FOOD SAFETY AUTHORITY (BFSA)

- Bangladesh Food Safety Authority (BFSA) is responsible for coordination of food safety management/control related activities of government agencies carrying out their enforcement job under various Acts.
- BFSA is also responsible to oversee the effectiveness of food control activities, harmonization of other regulations, standards, guidelines, enforcement activities in the alignment of overarching Food Safety Act, 2013 as apex Food Safety Agency in the country.
- **Functions:**
  - protecting consumers' health and life by formulating appropriate science-based regulations
  - monitoring the safety of food supply chain and coordinating the work of official food control agencies to ensure the effective enforcement of food regulations by the food control agencies, food businesses and civil societies on board

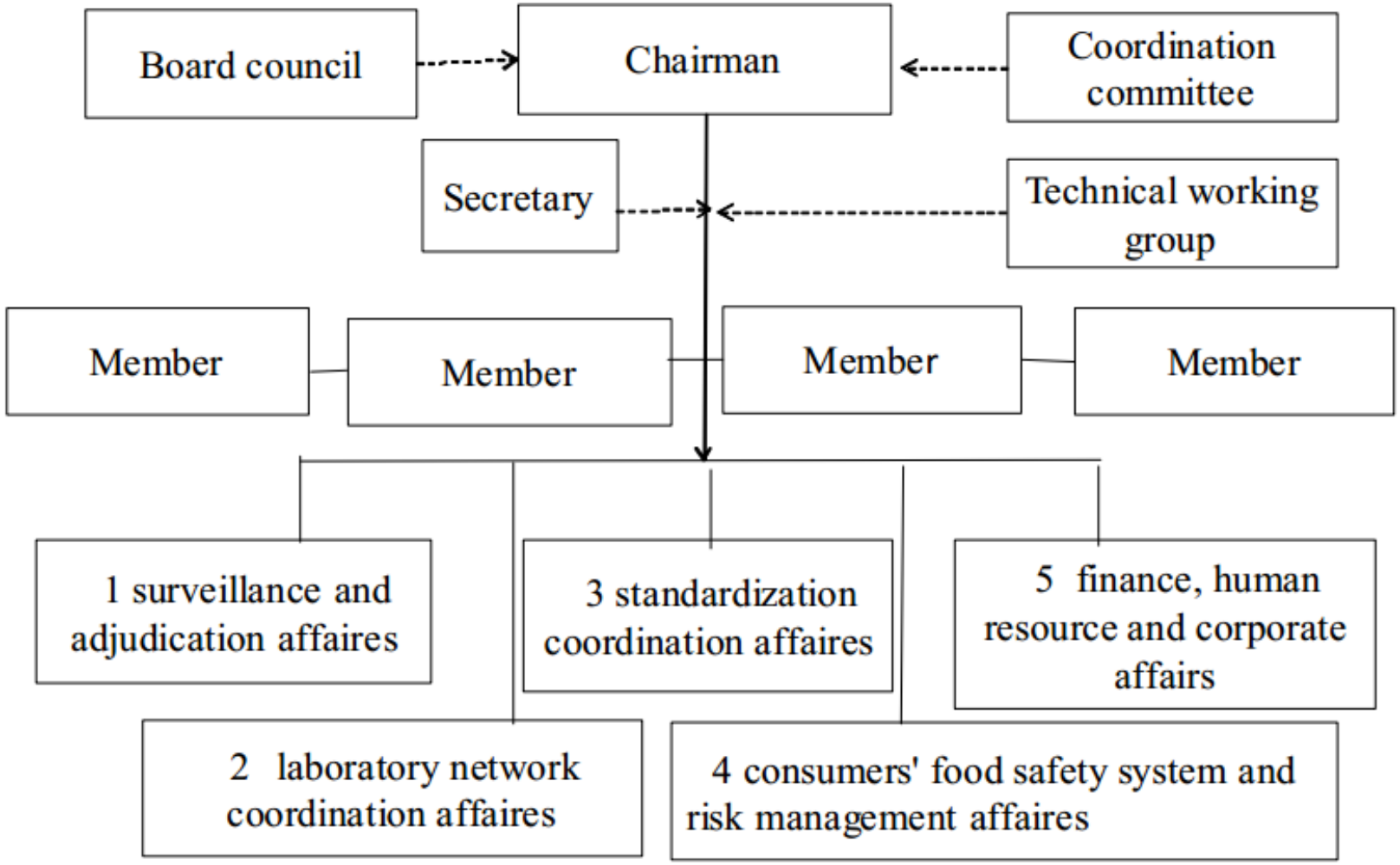


Figure: Structure of BFSA

আইনী কাঠামো

২০১৩ সনের ৪৩ নং আইন (১০ অক্টোবর, ২০১৩)

গঠন

২ ফেব্রুয়ারি ২০১৫

মোট ধারা- ৯০টি,
মোট অধ্যায়- ১৩টি

মূল জনবল নিয়োগ: ২০২০ খ্রিস্টাব্দ

Ongoing activities of BSFA

A. Development of rules and regulations

Table: Regulations and Rules of BFSA

Name of regulation and rule
Food Safety (Technical Committee) Rules 2017
Food Safety (Use of Food Additives material) Regulation 2017
Regulation on food hygiene 2018
Regulations for collection, examining and analysis of food sample 2017
Regulations for labeling of packed food 2017
Food Safety (Chemical Contaminant, Toxin and Harmful Residues) Regulation 2017
Regulation on microbiological criteria (draft)
Food Safety (Procedure to seize food and taking administrative measures) Rules 2014
Food Safety (Food Contact Materials) Regulation 2017
Food Safety (Obligations of Food Business Operators) Regulation

Source: BFSA documents

B. Technical Committee

For the purpose of analyzing the food safety issues in each sector and formulating drafts of regulations

C. Training program

D. Food Safety Inspection

E. Baseline survey for Food Safety Act and consumer awareness

F. Act and regulation analysis in crop sector

G. Laboratory inventory

H. Communication Strategy

I. Restaurant grading in Dhaka city

BFSA's move of grading restaurants to help consumers determine the hygiene and quality of food at eateries also received a round of applause

RESTAURANT GRADING SYSTEM			
GRADES	MEANING	COLOUR	POINTS
A+	Excellent	Green	Above 90
A	Good	Blue	80 - 89
B	Average	Yellow	60 - 79
C	Pending	Orange	59 and below

J. National Food Safety Day

On February 3 and 4, 2019, National Food Safety Day was held throughout the country on the BFSA's second anniversary

K. Mobile laboratory

In March 2019, mobile food safety laboratories were established across the capital of Dhaka by USAID, FAO, and BFSA to detect food adulteration and contamination.

These laboratories will first be operationalized in Dhaka and gradually become available in all districts of Bangladesh

Mobile food safety laboratories to be set across the capital

Tribune Report — Published at 02:02 am December 4th, 2019

A mobile laboratory of the Bangladesh Food Safety Authority (BFSA) was inaugurated at the Pan Pacific Sonargaon hotel in Dhaka on Tuesday, December 3, 2019 **Fahim Reza Shovon/Dhaka Tribune**

Harmonization with Int. Food Standard

- BFSA recently released a report titled "**Harmonization of Bangladesh's Food Safety Standards with Codex Standards and other international best practices**" to review the existing standards and draft new standards and codes of practice for implementation in the country

- BFSA has proposed the following two approaches:
  - revision or formulation of vertical standards for different food products or groups of food products
  - revision or formulation of horizontal standards

কর্তৃপক্ষের কার্যক্রম

- রেগুলেটরি কার্যক্রম
- নজরদারি ও মনিটরিং
- আইন প্রয়োগ
- শিখন ও প্রশিক্ষণ
- সচেতনতা ও প্রচার
- খাদ্য মান নির্ধারণ ও নিয়ন্ত্রণ
- সহযোগিতা ও যোগাযোগ
- খাদ্য ঝুঁকি বিশ্লেষণ ও ব্যবস্থাপনা
- জরুরি পরিস্থিতি মোকাবেলা
- গবেষণা ও উন্নয়ন

১. রেগুলেটরি কার্যক্রম

- আইন, বিধি ও প্রবিধান প্রণয়ন ও প্রয়োগ

২. নজরদারি ও মনিটরিং

- খাদ্য নমুনা পরীক্ষা
- খাদ্যস্থাপনা পরিদর্শন
- বিশেষ মনিটরিং কার্যক্রম

খাদ্য নমুনা পরীক্ষা কার্যক্রম

- ডেজিগনেটেড/সরকারি ল্যাবে খাদ্য নমুনা পরীক্ষা
- মোবাইল ল্যাবরেটরি
- মিনি ল্যাবরেটরি
- টেস্টিং কিট
- ল্যাব রিপোজিটরি (৪৬ ল্যাবের তথ্য, ১৬৭ খাদ্য পণ্য, ৮৬৬ প্যারামিটার)

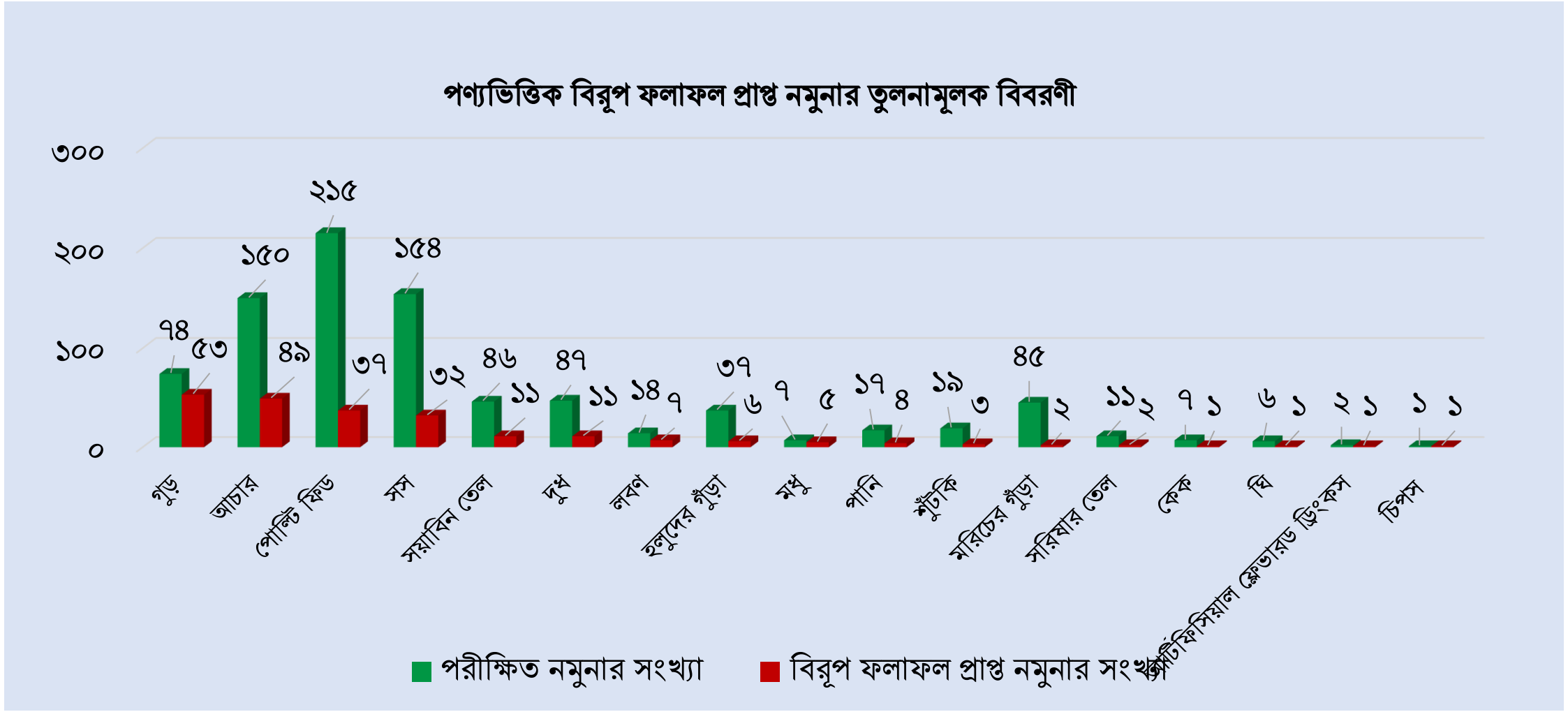
খাদ্য নমুনা পরীক্ষার পরিসংখ্যান

- ২০২৩-২০২৪ অর্থ বছরে মোট পরীক্ষত নমুনা: ১৩৮১টি

সাল	পরীক্ষিত নমুনা	মানবহির্ভূত নমুনা	হার %
২০২৩-২০২৪	১৩৮১	২১৬	১৫%
২০২২-২০২৩	১০৭০	৯১	৯%
২০২১-২০২২	১২৮২	১৫২	১২%
২০২০-২০২১	২৩৫৪	২৬৮	১১%
২০১৯-২০২০	১৭৩১	১৯৬	১১%

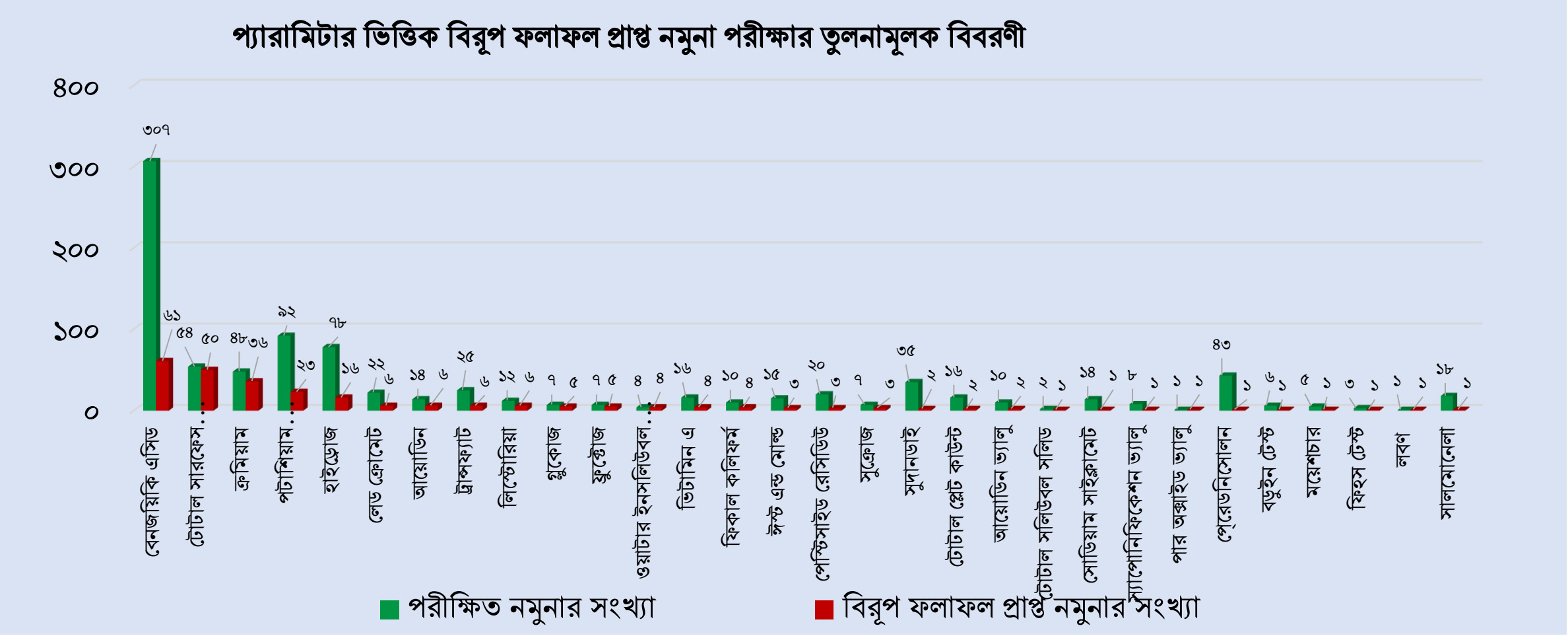
২০২৩-২৪ পণ্যভিত্তিক নমুনা পরীক্ষার ফলাফল

- পরীক্ষিত নমুনার ধরন: ৪৭ (মান বহির্ভূত ১৭টি)



২০২৩-২৪ প্যারামিটার ভিত্তিক নমুনা পরীক্ষার ফলাফল

- পরীক্ষিত প্যারামিটার ৬৮টি (মান বহির্ভূত: ৩০টি)



মিনি ল্যাব স্থাপন

- ২৫টি জেলা ও মেট্রোপলিটন কার্যালয়ে মিনি ল্যাব স্থাপন করা হয়েছে। অবশিষ্ট জেলা কার্যালয়সমূহে মিনি ল্যাব স্থাপনের কাজ চলমান রয়েছে।
- **জুলাই, আগস্ট, সেপ্টেম্বর ২০২৪** মাস পর্যন্ত মিনি ল্যাবরেটরি গুলোর মাধ্যমে মোট ৫৭১টি নমুনা পরীক্ষা করা হয়েছে।

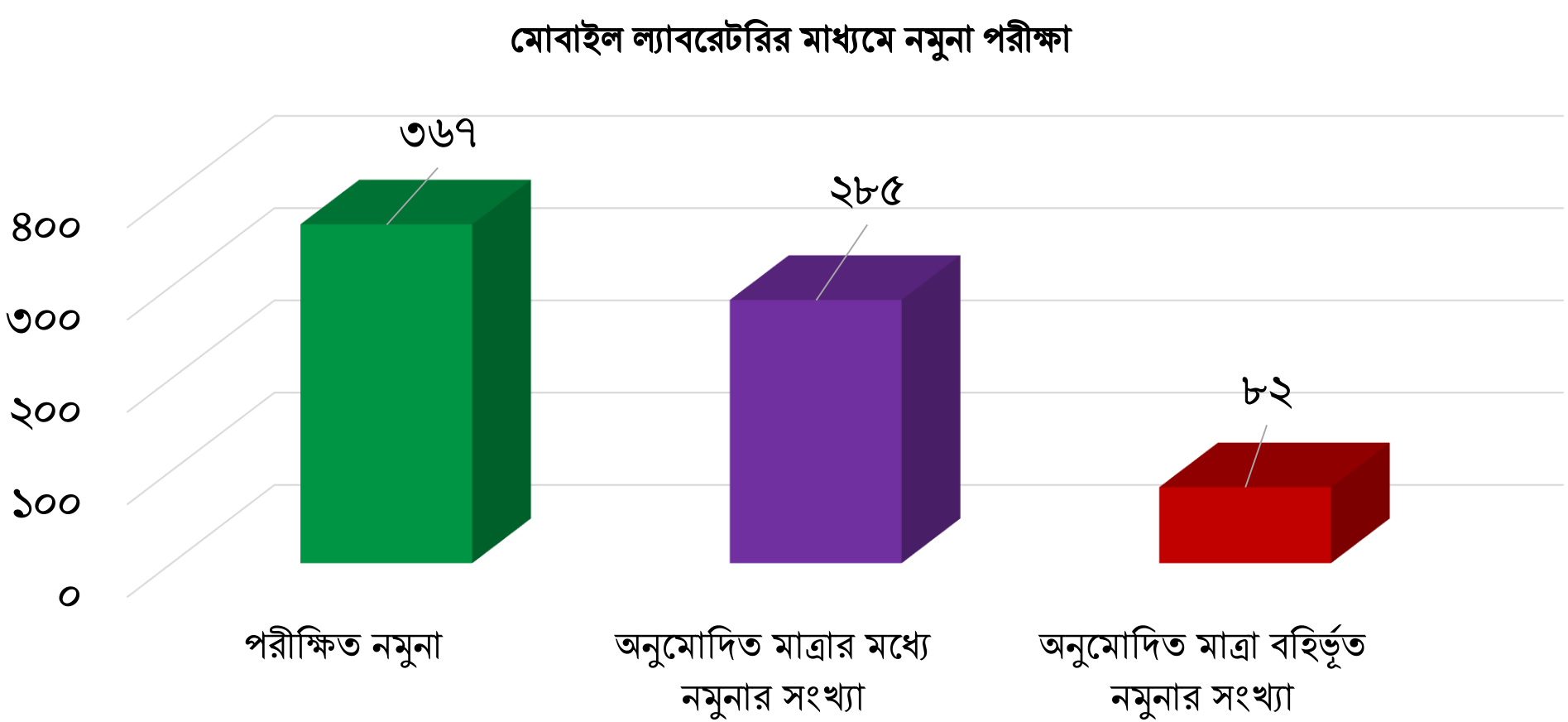
মোবাইল ল্যাবরেটরি

- বাংলাদেশ নিরাপদ খাদ্য কর্তৃপক্ষে মোট মোবাইল ল্যাব সংখ্যা-৮টি। বিভাগসমূহে কার্যক্রম পরিচালনা করছে।
- ৩৩টি টেস্টিং প্যারামিটার পরীক্ষা করা যায়।

মোবাইল ল্যাবরেটরি

মোবাইল ল্যাবরেটরির মাধ্যমে নমুনা পরীক্ষা

- ২০২৩-২৪ অর্থবছরে ঢাকার বিভিন্ন স্থান হতে দুধ, ভোজ্য তেল, পাউরুটি, কেক, হলুদের গুঁড়া, মরিচের গুঁড়া সহ মোট ৩৬৭টি নমুনা সংগ্রহ ও পরীক্ষা করা হয় (৮২টি নমুনা মানবহির্ভূত)



খাদ্যস্থাপনা পরিদর্শন

- ২০২৩-২৪ অর্থবছরে বিএফএসএ এর নিজস্ব টিম কর্তৃক ১১৩৭৬টি খাদ্যস্থাপনা (পাইকারি বাজার, খুচরা বাজার, কাঁচা বাজার, রেস্টুরেন্ট, খাদ্য কারখানা ইত্যাদি) পরিদর্শন করা হয়
- প্রধান কার্যালয় হতে ৪ (চার)টি এবং জেলা কার্যালয় হতে ২৩ (তেইশ)টি সহ সর্বমোট ২৭ (সাতাশ)টি কোল্ডস্টোরেজ পরিদর্শন করা হয়েছে

পরিদর্শন সংখ্যা সাল	মোট পরিদর্শন
২০২৩-২০২৪	১১৩৭৬
২০২২-২০২৩	১১৪৯৮
২০২১-২০২২	১৮৮৪১
২০২০-২০২১	১৯৯৬৯

চ্যালেঞ্জসমূহ

- নতুন প্রতিষ্ঠান
- জনবল কাঠামো উন্নতকরণ
- ল্যাবরেটরি স্থাপন
- সামর্থ্যর তুলনায় কাজের পরিমাণ ও পরিধি অত্যাধিক
- জনবল পদায়ন

The Daily Star
Journalism Without Fear or Favour

BSTI finds 18 food items of 47 brands substandard

Star Business Report

Fri May 3, 2019 12:00 AM Last update on: Fri May 3, 2019 12:06 AM

RAB destroys 400 maunds mangoes in Dhaka

Arifur Rahman Rabbi — Published at 09:15 pm May 22nd, 2019

Rapid Action Battalion (RAB) mobile court destroys chemically ripen mangoes in Jatrabari area of Dhaka on Wednesday, May 22, 2019 **Dhaka Tribune**

the dailyobserver
We stand for people's rights

BFSA fines Nanu's Food Factory

Published : Friday, 11 October, 2019 at 12:00 AM

The Financial Express

Mobile court fines restaurant Tk 0.4m

FE Report | Published: September 21, 2017 22:39:03

The Independent, Bangladesh

Withdraw 52 food items of different brands: HC

The BSTI, Bangladesh Food Safety Authority (BFSA) and the Directorate ..

theindependent

POST TIME: 29 May, 2019 00:00 00 AM

KFC fined Tk 4 lakh for storing stale chicken

Staff Reporter, Dhaka

the dailyobserver
We stand for people's rights

BFSA fines Tk 5 lakhs for adulteration

Published : Thursday, 19 September, 2019 at 12:00 AM

KEY CHALLENGES

1. Weak enforcement of food safety regulations and standards.
2. Limited consumer awareness and education on food safety practices.
3. Lack of infrastructure and technology for monitoring and quality control.
4. Inadequate collaboration among stakeholders (farmers, policymakers, industries).

MEDIA'S ROLE IN ENSURING FOOD SECURITY AND SAFETY

1. Importance of accurate and responsible reporting to raise awareness.
2. Highlighting stories of success and innovation to inspire action.
3. Advocacy for stricter implementation of food safety standards and policies.

CALL TO ACTION: FUTURE STRATEGIES

- Strengthening "farm to plate" systems:
  - Promoting sustainable farming practices and reducing chemical use.
  - Investment in modern processing, storage, and distribution infrastructure.
- Building capacity for enforcement agencies and training for farmers.
- Consumer education campaigns to encourage safe food practices and label checking.
- Collaborative policy-making involving all stakeholders.

More Specifically

- Increasing demand for food testing in Bangladesh
- Real-time data sharing across agencies
- Provision of hands-on training to food testing labs
- Development and validation of rapid detection devices/kits:
  - Technologies are available globally that Bangladesh can adopt with local validation
  - Affordability of the rapid detection kits for wider adoption by industry
  - Low-cost detection kits will facilitate mass adoption by the food industry, including MSMEs, and promote affirmative in-house testing in processing plants
  - Rapid detection systems will enable regulators to do mass testing
  - Domestic capacity development for manufacturing diagnostic kits
- Providing wide access for rapid detection devices/kits for target segments/contaminants

Thank you for your patience

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