



National Food and Nutrition Security Policy (NFNSP)
Plan of Action (PoA)
And
Bangladesh Third Country Investment Plan- CIP3 (2021-2025)
Monitoring Report 2024

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Foreword

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Acronyms

7FYP	Seventh Five Year Plan	BMS	Breast-Milk Substitutes
8FYP	Eighth Five Year Plan	BNNC	Bangladesh National Nutrition Council
ADB	Asian Development Bank	BRACU	BRAC University
ADP	Annual Development Programme	BRRRI	Bangladesh Rice Research Institute
AIIB	Asian Infrastructure Investment Bank	BSCIC	Bangladesh Small and Cottage Industries Corporation
APA	Annual Performance Agreement	BSRI	Bangladesh Sugar-crop Research Institute
ANC	Antenatal Care	BSTI	Bangladesh Standards and Testing Institution
ASF	Animal Source Foods	BWDB	Bangladesh Water Development Board
AVC	Agricultural Value Chain	CARS	Centre for Advanced Research in Sciences
BAB	Bangladesh Accreditation Board	CGAP	Consultative Group to Assist the Poor
BADC	Bangladesh Agricultural Development Corporation	CGE	Computable General Equilibrium
BAEC	Bangladesh Atomic Energy Commission	CIP	Country Investment Plan
BAPA	Bangladesh Agro-Processors' Association	CIP1	First Country Investment Plan
BARC	Bangladesh Agricultural Research Council	CIP2	Second Country Investment Plan
BARI	Bangladesh Agricultural Research Institute	CPI	Consumer Price Index
BAU	Bangladesh Agricultural University	CRA	Climate Resilient Agriculture
BB	Bangladesh Bank	CSA	Climate Smart Agriculture
BBF	Bangladesh Breastfeeding Foundation	CSAIP	Climate Smart Agriculture Investment Plan
BBS	Bangladesh Bureau of Statistics	CSOs	Civil Society Organisations
BCC	Behaviour Change Communication	DAE	Department of Agricultural Extension
BCIC	Bangladesh Chemical Industries Corporation	DAM	Department of Agricultural Marketing
BFVAPEA	Bangladesh Fruits, Vegetables and Allied Products Exporting Association	DANIDA	Danish International Development Agency
BIHS	Bangladesh Integrated Household Survey	DAP	Diammonium phosphate
BIGD	BRAC Institute of Governance and Development	DDM	Department of Disaster Management
BDHS	Bangladesh Demographic and Health Survey	DEI	Dietary Energy Intake
BDT	Bangladeshi Taka	DES	Dietary Energy Supply
BFD	Bangladesh Forest Department	DFID	Department for International Development
BFRI	Bangladesh Fisheries Research Institute	DG	Director-General
BFSA	Bangladesh Food Safety Authority	DGHS	Directorate General of Health Services
BFoRI	Bangladesh Forest Research Institute	DLS	Department of Livestock Services
BINA	Bangladesh Institute of Nuclear Agriculture	DoF	Department of Fisheries
BIRDEM	Bangladesh Institute of Research and Rehabilitation for Diabetes, Endocrine and Metabolic Disorders	DPs	Development Partners
BIRTAN	Bangladesh Institute of Research and Training on Applied Nutrition	DPHE	Department of Public Health Engineering
BJRI	Bangladesh Jute Research Institute	EBF	Exclusive Breastfeeding
BLRI	Bangladesh Livestock Research Institute	EEZ	Exclusive Economic Zone
BMDA	Barind Multipurpose Development Authority	EGPP	Employment Generation Programme for the Poorest
		ERD	Economic Relations Division
		EU	European Union
		FAO	Food and Agriculture Organization of the United Nations
		FCTs	Food Composition Tables
		FIES	Food Insecurity Experience Scale
		FLI	Food Loss Index
		FWI	Food Waste Index
		FLW	Food Loss and Waste

FNS	Food and Nutrition Security	ILO	International Labour Organization
FPMC	Food Planning and Monitoring Committee	IMED	Implementation Monitoring and Evaluation Division
FPMU	Food Planning and Monitoring Unit	IMF	International Monetary Fund
FPWG	Food Policy Working Group	INFS	Institute of Nutrition and Food Science
FSC	Food Security Cluster	INGO	International Non-Governmental Organisation
FSMS	Food Safety Management System	IPC	Integrated Food Security Phase Classification
FSNIS	Food Security and Nutrition Information System	IPH	Institute of Public Health
FSNSP	Food Security Nutritional Surveillance Project	IPHN	Institute of Public Health and Nutrition
FSS	Food Security Sector	IRRI	International Rice Research Institute
FYP	Five Year Plan	IYCF	Infant and Young Child Feeding
G-K	Ganges-Kobadak	JICA	Japan International Cooperation Agency
G2P	Government-to-Person	LANSA	Leveraging Agriculture for Nutrition in South Asia
GAfsp	Global Agriculture & Food Security Program	LCG	Local Consultative Group
GAIN	Global Alliance for Improved Nutrition	LDDP	Livestock and Dairy Development Project
GAP	Good Agricultural Practices	LCG ARDF	Local Consultative Group in Agriculture, Rural Development and Food Security
GAqP	Good Aquaculture Practices	LGD	Local Government Division, Ministry of Local Government, Rural Development and Co-operatives
GDP	Gross Domestic Product	LGED	Local Government Engineering Department
GED	General Economics Division	LoA	Letter of Agreement
GEF	Global Environmental Facility	MAD	Minimum Acceptable Diet
GHG	Green House Gas	MBM	Meat and Bone Meal
GHO	Global Health Observatory	MDD	Minimum Dietary Diversity
GHP	Good Hygienic Practices	MDD-W	Minimum Dietary Diversity for Women
GIEWS	Global Information and Early Warning System on Food and Agriculture	MDER	Minimum Dietary Energy Requirements
GIS	Geographic Information System	MDG	Millennium Development Goal
GM	Genetically Modified	MFSP	Modern Food Storage Facilities Project
GMP	Good Manufacturing Practices	MICS	Multiple Indicator Cluster Survey
GoB	Government of Bangladesh	MIS	Management Information System
HACCP	Hazard Analysis and Critical Control Points	MISM	Management Information System and Monitoring
HKI	Helen Keller International.	MoEFCC	Ministry of Environment, Forest and Climate Change
HIES	Household Income and Expenditure Survey	MMF	Minimum Meal Frequency
HPNSP	Health, Population and Nutrition Sector Programme	MMT	Million Metric Tons
IBRD	International Bank for Reconstruction and Development	MoA	Ministry of Agriculture
ICN2	Second International Conference on Nutrition	MoDMR	Ministry of Disaster Management and Relief
ICT	Information and Communication Technology	MoF	Ministry of Finance
ICVGD	Investment Component for Vulnerable Group Development	MoFood	Ministry of Food
IDA	International Development Association	MoFL	Ministry of Fisheries and Livestock
IDB	Inter-American Development Bank	MoHFW	Ministry of Health and Family Welfare
IDF	International Diabetes Federation	MoI	Ministry of Industries
IFAD	International Fund for Agriculture Development	MoInfo	Ministry of Information
IFC	International Finance Corporation		
IFPA	Indicator of Food Price Anomalies		
IFPRI	International Food Policy Research Institute		

MoLGRDC	Ministry of Local Government, Rural Development and Cooperatives	PPRC	Power and Participation Research Centre
MoP	Muriate of Potash	RAKUB	Rajshahi Krishi Unnayan Bank
MoU	Memorandum of Understanding	REVA	Refugee influx Emergency Vulnerability Assessment
MoWCA	Ministry of Women and Children Affairs	RMG	Ready-made garment
MoWR	Ministry of Water Resources	SAARC	South Asian Association of Regional Cooperation
MPI	Multidimensional Poverty Index	SBN	SUN Business Network
MR19	CIP2 Monitoring Report 2019	SDC	Swiss Agency for Cooperation and Development
MR20	CIP2 Monitoring Report 2020	SDG	Sustainable Development Goal
MSMEs	Micro, Small and Medium Enterprises	SMART	Specific, Measurable, Achievable, Relevant and Time-bound
MUCH	Meeting the Undernutrition Challenge	SME	Small and Medium Enterprise
NAES	National Agriculture Extension System	SOFI	State of Food Insecurity in the World
NAP	National Agricultural Policy	SRDI	Soil Resource Development Institute
NATP II	National Agriculture Technology Project – phase II	SSN	Social Safety Net
NARS	National Agricultural Research System	SSNP	Social Safety Net Programmes
NBCC	Nutrition Behaviour Change Communication	SVRS	Sample Vital Registration Survey
NC	National Committee	SUN	Scaling Up Nutrition
NCDs	Non-Communicable diseases	TAT	Technical Assistance Team
NFPCSP	National Food Policy Capacity Strengthening Programme	TMRI	Transfer Modality Research Initiative
NFNSP	National Food and Nutrition Security Policy	TSP	Triple Superphosphate
NFP	National Food Policy	TT	Thematic Team
NGOs	Non-Governmental Organizations	TWG	Technical Working Group
NIPN	National Information Platform for Nutrition	UDP	Urea Deep Placement
NIPU	Nutrition Information and Planning Unit	UNDP	United Nations Development Programme
NMSS	National Micronutrient Status Survey	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
NPAN2	Second National Plan of Action for Nutrition	UNIDO	United Nations Industrial Development Organization
NNC	National Nutrition Council	UNFPA	United Nations Population Fund
NNP	National Nutrition Policy	UNICEF	United Nations Children's Fund
NNS	National Nutrition Services	USAID	United States Agency for International Development
NNW	National Nutrition Week	USD	US Dollar
NO	Nutritional Olympiad	USD	US Dollar
NSA	Nutrition-Sensitive Agriculture	VGD	Vulnerable Group Development
NSDS	National Strategy for the Development of Statistics	VGF	Vulnerable Group Feeding
NSPCMD	National Strategy on Prevention and Control of Micronutrient Deficiencies	VRA	Vulnerability Risk Assessment
NSVC	Nutrition-Sensitive Value Chain	WASH	Water, Sanitation and Hygiene
NWRD	National Water Resources Database	WFP	World Food Programme
OPHI	Oxford Poverty and Human Development Initiative	WHO	World Health Organization
PFDS	Public Food Distribution System	WIBCI	Weather Index-Based Crop Insurance
PKSF	Palli Karma-Sahayak Foundation		
PNC	Post-natal Care		
PoA	Plan of Action		
PoU	Prevalence of Undernourishment		
PPP	Public Private Partnership		
ppm	Parts per million		

Executive Summary

The Government of Bangladesh has made commitments to reduce poverty and improve nutritional status by 2030 in line with the United Nations' Sustainable Development Goals (SDGs). In addition, the Government of Bangladesh has subscribed to the objectives of Second International Conference on Nutrition (ICN2) Framework for Action, Scaling up Nutrition (SUN) Movement and the UN Decade of Action on Nutrition. In the light of these commitments to global initiatives, the commitment made by the Hon'ble Prime Minister to ensure "food security for all", and various trends that are likely to threaten food and nutrition security in the future, there is clearly need to rethink & redesign, revise and update the existing policies, strategies into a new food and nutrition security policy for guiding investments and other interventions aimed at achieving food and nutrition security for all.

A new policy that is holistic approach and promotes the use of a "nutrition lens" to assess and prioritize various options will help design multi-sectoral inter-linked interventions that are centred on improving the nutritional outcomes. The Government of Bangladesh has accordingly developed a new National Food and Nutrition Security Policy 2020 (NFNSP 2020) to cover the period 2020-2030 in synchronization with the target year for SDG.

Considering multi-dimensional objectives of the NFNSP-2020, the Plan of Action (PoA 2021-30) has been prepared. It provides a framework for all responsible GoB agencies and FNS stakeholders for effective implementation, coordination and monitoring of the policy. The ten-year PoA covers the 8FYP and align with the GoB priority of achieving FNS-related SDGs and fulfilling relevant national and international commitments by 2030. The PoA includes actions required in order to, ensure the availability of safe and nutritious food at an affordable prices, and enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvement by implementing the priority actions. It recommends nutrition sensitive social protection and safety nets across the lifecycle approach with a focus on vulnerable groups and geographical regions. Government has also formulated Third Country Investment Plan (CIP3 2021-25) align with the NFNSP-PoA to achieve sustainable, nutrition sensitive and resilient food systems. The CIP3 Programmes and correspondence NFNSP- PoA Strategies and Areas of Intervention has shown in Annex-1.

Progress towards the CIP3 Results

The Bangladesh Third Country Investment Plan - Sustainable, Nutrition-Sensitive and Resilient Food Systems (CIP3, 2021-2025) lays out a coherent set of sustainable, nutrition-sensitive and resilient programmes. The Monitoring Report 2024 (MR-24) analyses progress in the CIP3 up to June 30th 2023, three years into the implementation of the CIP3. Cross-sectoral resource mobilisation is assessed against national priorities as outlined in the Bangladesh 8FYP. This process is aligned with the related SDG 2- Zero hunger. Because the CIP3 is a living document, this monitoring report, to the extent possible, has tried to consider the likely impacts of COVID-19 pandemic against the CIP3 and SDG targets.

Progress towards the NFNSP and CIP3 Goals

Prevalence of Moderate and Severe Food Insecurity in the population and the Prevalence of Undernourishment (PoU) has decreased

Prevalence of Undernourishment (PoU) is an estimate of the proportion of the population that lacks enough dietary energy for a healthy and active life. It is FAO's indicator used to monitor hunger at the global and regional level, as well as SDG Indicator 2.1.1. It considers the mean food consumption and its variability and asymmetry against a normative requirement: the Minimum Dietary Energy Requirements (MDER) of the average individual in a given sex and age group^{1,2}. In Bangladesh, PoU was 13.0% in 2019-20, 11.4% in 2021-22, and 11.2% in 2022-23, showing a slow decline since the CIP3 baseline. Despite this, achieving the 10% target set by the Planning Commission is still feasible. However, challenges such as the COVID-19 pandemic and the conflict between Ukraine - Russia may hinder expected progress. These crises are expected to reverse gains in nutrition, particularly affecting the most vulnerable groups. The link between inequity and malnutrition has become evident during the COVID-19 crisis⁵.

Significant Progress in the reduction of child undernutrition

Bangladesh has made noteworthy progress in addressing child undernutrition, particularly in reducing stunting (low height for age, SDG indicator 2.2.1), which is caused by inadequate nutrition and recurrent infections or chronic diseases. Stunting reflects poor environmental conditions and long-term growth restrictions, leading to reduced learning and productive capacity. The prevalence of stunting among children under 5 decreased to 24% in 2022 from 31% in 2018 and 60% in the mid-1990s. The Multiple Indicator Cluster Survey (MICS) 2019 data also indicates a decline to 28%.^{3,4} This trend makes reaching the 8FYP target of 20% by 2025 seem feasible.

The prevalence of wasting (or low weight for height, SDG indicator 2.2.2) among children under 5 reflects short-term undernutrition, typically caused by inadequate dietary intake, infections, and diseases such as diarrhoea. Wasting has declined to 9.4% in 2019 from 14% in 2014, aligning with the NPAN2 2025 target of 8%. However, recent data from BDHS-2022 indicates a prevalence of 11% in Bangladesh, attributed to factors such as price hikes and issues related to Water, Sanitation, and Hygiene (WASH). Similar to stunting rates, wasting is highest in Sylhet and lowest in Dhaka division.⁵

Important role of mother's education and wealth accumulation on nutritional outcomes

Studies on the determinants of child growth using the Bangladesh Demographic and Health Surveys (BDHS) from 1997 to 2022 found that the household wealth accumulation and parental

¹ FAO (2014) [Refinements to the FAO methodology for estimating the Prevalence of Undernourishment indicator](#). FAO Statistics Division Working Paper Series. ESS/14-05. September.

² Following the FAO methodological approach, normative requirements are based on the Basic Metabolism Rate (BMR) per kilogram of body mass, multiplied by the ideal weight of a healthy person given their height, and multiplied by a coefficient of Physical Activity Level which factors-in physical activity.

³ While MICS data are not fully comparable with BDHS, they can be used as a proxy.

⁴ BBS and UNICEF (2019) [Proqotir Pathy, Bangladesh Multiple Indicator Cluster Survey 2019, Key Findings](#). Dhaka.

⁵ Mohsena, M., Goto, R. & Mascie-Taylor, C.G.N. (2015) [Regional variation in maternal and childhood undernutrition in Bangladesh: evidence from demographic and health surveys](#). WHO South-East Asia Journal of Public Health. July–December; MICS (2019) [Nutritional Status of Children](#). Bangladesh 2019.

education were the key drivers of the rapid reduction of undernutrition - especially in severe child stunting. 40% under 5 children have been suffering from stunting with 'no education of mother', whereas 16% under 5 children have been suffering from stunting with secondary education of mother (BDHS-2024). 15% under 5 children are severe stunted with no education of mother, whereas only 4% children are severe stunted with secondary education of mother.

Health, sanitation and demographic factors played significant but secondary roles.⁶ The determinants of wealth accumulation include pro-poor economic growth and rapid agricultural growth, off-farm diversification, labour-intensive manufacturing, and overseas workers' remittances (15.5 billion USD in 2018, up 15% from 2017), which is much higher than foreign direct investment (about 3 billion USD in 2018⁷). With regards to maternal education, the prevalence of stunting was 18% amongst children whose mother had secondary education compared to 47% whose mother had no formal education.⁸ Paternal education appears to be as important as maternal education, for lower child undernutrition, higher food security, improved toilet facilities and better nutritional status and awareness of child's undernutrition status.⁹

Considering wealth quintile, 2.7% under five children has been suffering from severe chronic undernutrition or stunting with highest wealth quintile, whereas 9.5% children are stunted in the highest wealth quintile.

Thus, rapid and sustained nutritional improvements are achieved through a multidimensional and multi-sectoral approach, and not only through large nutrition-only programmes.¹⁰ Persistent disparities by region and socio-economic group prevent a faster and more inclusive reduction in undernutrition. As a consequence, the prevalence of stunting remains higher in rural compared to urban areas and in particular highest in Sylhet, Mymensingh and Barishal for prevalence of stunting (43%, 36% and 33%, respectively) and wasting (10%, 9% and 9%, respectively)¹¹ as per BDHS 2018. Women in Sylhet have an average lower body weight than women in Chattogram, Rajshahi and Khulna.¹² As per the BDHS 2022, prevalence of stunting is also higher in Sylhet Division (34%).

Ukraine-Russia war situation, climate change and COVID-19 pandemic might negatively impact progress towards the CIP3 goals

Three C's i.e. i) Conflict (war between Ukraine-Russia), ii) Climate Change and iii) COVID-19 have been considered as the key drivers to deteriorate food and nutrition security situation. The war in Ukraine has

⁶ Headey, D., Hoddinott, J., Ali, D., Tesfaye, R. & Dereje M. (2015) [The Other Asian Enigma: Explaining the Rapid Reduction of Undernutrition in Bangladesh](#). *World Development*. Volume 66. Saha, R. G. & Kayum Shikdar, Md. (2019) [Socio-economic Determinants Affecting Nutritional Outcomes of the Children in Bangladesh](#). *IOSR Journal of Humanity and Social Sciences*. Volume 24. Issue 1; Sultana, P., Rahman, Md. M. & Akter, J. (2019) [Correlates of stunting among under-five children in Bangladesh: a multilevel approach](#). *BMC Nutrition*. 5:41.

⁷World Bank Data.

⁸ National Institute of Population Research and Training (NIPORT), Mitra and Associates & ICF International (2016) [Bangladesh Demographic and Health Survey 2014](#). Dhaka, Bangladesh and Rockville, Maryland, USA: NIPORT, Mitra and Associates, and ICF International.

⁹ Hossain, M.B. & Khan, Md. H.R. (2018) [Role of parental education in reduction of prevalence of childhood undernutrition in Bangladesh](#). *Public Health Nutrition*. Volume 21. Issue 10. pp 1845-1854.

¹⁰ Headey, D., Hoddinott, J., Ali, D., Tesfaye, R. & M. Dereje (2015) [The Other Asian Enigma: Explaining the Rapid Reduction of Undernutrition in Bangladesh](#). *World Development*. Volume 66.

¹¹ National Institute of Population Research and Training (NIPORT) & ICF (2019) [Bangladesh Demographic and Health Survey 2017-18: Key Indicators](#). Dhaka, Bangladesh, and Rockville, Maryland, USA.

¹² Mohsena, M., Goto, R. & Mascie-Taylor, C.G.N. (2015) [Regional variation in maternal and childhood undernutrition in Bangladesh: evidence from demographic and health surveys](#). *WHO South-East Asia Journal of Public Health*. July-December.

caused severe disruption to national and worldwide food supplies. Ukraine is a major exporter of wheat, maize, and oilseeds, staples that are now suffering a war-triggered supply risk. Evidence shows that this war is not only generating food insecurity in Ukraine, but also globally, due to the shortage in grain production and supply and the higher prices. (Walter L. F. et al., Foods, 2023, 12, 3996).

Progress in the NFNSP-PoA & CIP3 Outcomes

Objective-1 & Pillar-1: Develop stress-tolerant high-yielding varieties of major cereals and nutrient-dense crops such as pulses, oilseeds, soybeans, fruits and vegetables

Bangladesh Agricultural Research Council (BARC) is responsible for strengthening the national agricultural research capability. The organization has developed research collaborations with several international agricultural research centres, agricultural universities in Bangladesh, and with various local research entities. The PoA will support and leverage the work of these research institutes. The particular emphasis will be on the development of stress-tolerant rice varieties suited to coastal saline areas, drought-prone north-west region, and submergence-prone low-lying southern delta region. Several improved rice varieties with these characteristics have been developed and disseminated but this past effort needs to be further reinforced to increase the number of varieties suited to diverse farming conditions of Bangladesh¹³. Similarly, improved maize and wheat varieties are being developed by Bangladesh Wheat and Maize Research Institute (BWMRI) in collaboration with the International Maize and Wheat Improvement Center (CIMMYT). In addition, the Bangladesh Agricultural Research Institute (BARI) is also developing improved varieties of various legume and pulses that are nutrient-rich in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) as well as orange fleshed sweet potato (*komola sundari*) which is a rich source of Vitamin A. Research by private firms will be encouraged.

Like with the development of improved varieties, the national research institutes are also developing crop, water, soil and natural resource management options adapted to different agro-ecology of Bangladesh. Examples of these improved technologies include the alternate wetting and drying method for irrigation, fertiliser application based on soil tests, balanced use of organic and inorganic fertilisers, integrated pest management approach to reduce pesticide application, improved methods of weed control, conservation tillage, sorjan farming¹⁴ and mechanization options to overcome labour shortages during periods of peak-labour demand such as transplanting and harvesting of rice. Opportunities to increase the efficiency of input use through “high-tech” approaches will be exploited. Investments towards the development of agricultural machinery that is resource and energy efficient along with the training of farmers will be made. Efforts will be made to customise the equipment to the specific needs of Bangladeshi farmers (in line with NAP PoA 2020 Programme 2.2.1).

The livestock sector is the main source of high-quality protein in the form of meat, milk and eggs. However, the productivity of livestock in Bangladesh in terms of meat and milk production is extremely low due to their origin from a poor genetic base. In addition, the lack of proper veterinary services and poor-quality feeds keep their productivity low. So, opportunities exist to increase the productivity of livestock sector through the application of science-led modern

¹³ Food Planning and Monitoring Unit (FPMU).2020. *Op. cit*

¹⁴ Sorjan farming method combines vegetable crops with fish farms and makes land that is waterlogged during the rainy season but faces drought and salinity in the dry season become productive.

methods of breed improvement complemented by the delivery of effective veterinary services, and improved feeding and management systems. Local adapted breeds of livestock could be developed into high-yielding breeds through suitable breeding approaches. Issues of illegal livestock germplasm need to be addressed. The PoA will support and leverage the Bangladesh Livestock Research Institute's (BLRI) research with particular emphasis on using science-based methods for breed improvement, development of effective veterinary services, feed quality assurance and improvements in feeding practices. A gene bank will be developed for indigenous fish to be conserved and multiplied.

Objective-2 & Pillar-2: The UN Food Systems Summit (UNFSS) and Bangladesh Food Systems Transformation

The United Nations Food Systems Summit (UNFSS) held in New York City on September 23, 2021, aimed to tackle global food system challenges, including hunger, malnutrition, climate change, and sustainability. It brought together stakeholders from governments, civil society, businesses, and academia to discuss strategies for transforming food systems to be more equitable, resilient, and sustainable. Convened by UN Secretary-General Mr. António Guterres, the summit mobilized action to achieve SDGs related to food security, nutrition, and agriculture. Mr. Guterres called for transformative action, emphasizing the interconnectedness of food systems with global challenges and the need for concerted efforts from all sectors to build resilient, inclusive, and sustainable food systems. Key themes included ensuring access to nutritious food, shifting to sustainable consumption, boosting nature-positive production, advancing equitable livelihoods, building resilience, and strengthening governance. The UNFSS provided a platform for global collaboration and action to address complex food system challenges.

Bangladesh played a proactive role in the UNFSS, actively engaging in discussions and initiatives aimed at reshaping global food systems. Organizing three national and six sub-national dialogues, Bangladesh brought together diverse stakeholders from government, civil society, academia, and the private sector to address challenges and opportunities in improving local food systems. With a focus on sustainable intensification, livelihood transformation, and investment in rural areas, Bangladesh prioritized initiatives to reduce food loss, ensure safe and nutritious diets for all, and combat hunger and malnutrition. During the summit, Bangladesh committed to action, engaged a wide array of stakeholders, showcased successful practices, and advocated for global cooperation to address interconnected food system challenges. Hon'ble Prime Minister Sheikh Hasina emphasized the importance of research, investment, and collaboration to achieve sustainable food security, urging developed countries to support developing nations in this endeavour. Bangladesh's participation underscored its commitment to building resilient and inclusive food systems for a better future.

Bangladesh reported its significant strides in implementing food systems transformation for the UNFSS+2 STM (Stocktaking Moment) held in Rome, Italy during 3-5 July 2023. Key initiatives include adopting the National Plan of Action for National Agriculture Policy 2018, the National Food and Nutrition Security Policy 2020 with its Plan of Action 2021-2030, and the 3rd Country Investment Plan (CIP3) for Sustainable, Nutrition-sensitive, and Resilient Food Systems (2021-2025). Additionally, the Mujib Climate Prosperity Plan 2021 and the National Adaptation Plan (2023-2050) have been embraced. Other notable achievements include the introduction of Biofortified Zinc Rice in public procurement, the establishment of integrated access to financial services and digital transactions under social protection, and the development of the Food Systems

Dashboard (FSD) established in the Ministry of Food. Initiatives such as the Dhaka Food Agenda 2041, aimed at aligning with UNFSS commitments, highlight Bangladesh's dedication to sustainability. Moreover, the country has implemented measures to prevent illegal fishing, promote marine conservation, and ensure universal COVID vaccination, demonstrating a One Health approach. Alignment with CODEX Alimentarius food safety standards, increased social protection budget allocations, and initiatives like the Vulnerable Women Benefit and Mother Child Benefit Programmes underscore Bangladesh's commitment to social welfare. The launch of the Workforce Nutrition Alliance and the development of a document linking UNFSS commitments with other forums further illustrate Bangladesh's holistic approach to food systems transformation.

Progress has been made across key action areas aimed at transforming Bangladesh's food systems. In the realm of nourishment for all, significant steps have been taken, including the adoption of action plans aligned with the National Food and Nutrition Security Policy 2020 and the implementation of Trans-fat Control Regulations and household-level Safe Food guidelines. Efforts to combat child wasting have seen the rollout of fortified rice provisions in 271 sub-districts under safety-net programs. In boosting nature-based solutions, initiatives such as aligning cropping patterns with agro-ecological zones, producing bio-fertilizers, and promoting crop diversification and rotation have been undertaken. Additionally, steps like rainwater harvesting and mangrove plantations aim to protect coastal land. Action on advancing equitable livelihoods and empowered communities, with projects like "Amar Gram Amar Shahar" being piloted to enhance infrastructure and employment generation in rural areas. In order to building resilience to vulnerabilities, with policies like the National Adaptation Plan, Mujib Climate Prosperity Plan, and CIP3 playing pivotal roles. Implementation strategies for the country's food systems transformation pathway involve integrating plans into national strategies, enhancing investment strategies, and fostering capacity development. Efforts to accelerate implementation means include increasing social safety net budgets and launching projects with World Bank support. Moreover, initiatives like the Bangladesh Food Systems Dashboard and efforts to address climate impact through research demonstrate Bangladesh's commitment to transformative action in its food systems.

Objective-3 & Pillar-3 Develop and implement long-term national food planning to ensure nutritious and healthy diets

Long term planning for ensuring nutritious and healthy diets from a sustainable food system is an immediate need considering Bangladesh's population growth, demographic composition, and changes in dietary patterns induced by urbanization and income growth. This is important to estimate the gaps in availability, consumption and desirable intake and to take remedial actions through increased production, processing or trade. Food systems, especially in urban areas, are evolving to adapt to evolving food demands and transforming from traditional to modern with the increasing consumption of convenience/fast food. Desirable dietary pattern and nutrient targets should be used for diversified food planning, sensitize demand for healthy food and enhanced food supply.

Women during pregnancy, lactation and menstruation, and adolescent girls, who experience rapid physiological changes, require diets that are diversified, safe, adequate and rich in micronutrients. Government and non-government agencies have carried out numerous advocacy and awareness programmes on the promotion of dietary diversity. Targeted programmes must be scaled up to improve the diets of adolescent girls, pregnant and lactating women during their antenatal care (ANC) and post-natal care (PNC) sessions. The prolonged COVID-19 pandemic is likely to impact maternal and child nutrition, given the potential reduction in access to income and food, decrease

in breastfeeding and possible increase in the use of breastmilk substitutes, exacerbated by COVID-19 related concerns (Box 4).¹⁵ Higher incomes also do not automatically translate into a healthier diet. Contextual drivers that shape food systems also influence food choices, preferences and consumption behaviour. Implementation of dietary guidelines, nutrition education programmes and behaviour change communications (BCC) need to be integrated to every step of the food system including in nutrition-sensitive interventions to inform and influence food demand and promote healthy dietary behaviour and consumption.

Fortification of staple foods with essential micronutrients is a cost-effective intervention. This has been prioritised in the National Strategy on Prevention and Control of Micronutrient Deficiencies (NSPCMD 2015-2024). However, outreach, coverage and access to fortified foods by the targeted populations remain inadequate. The effectiveness of fortified rice in addressing anaemia and zinc deficiency was demonstrated among Vulnerable Group Development (VGD) beneficiaries in five districts of Bangladesh before and after 12 months of fortified rice distribution.¹⁶ Particular attention needs to be given to identifying potential barriers to equitable access for all population groups needing adequately iodine-fortified salt. Strengthening the existing monitoring system, in line with the NSPCMD, is fundamental to track the consumption of adequately fortified foods to inform policy and programmes. It is also important to regularly assess the distribution of key micronutrient deficiencies such as iodine, vitamin A and zinc across regions and population groups to inform policy update. To this purpose, a National Micronutrient Survey and a specific National Iodine Deficiency Disorders Survey are indispensable.

Objective-4 & Pillar-4: Aligning PFDS with National Social Security Strategy (NSSS) Priorities and Evolving Social Safety Net Program Approaches

To align the Public Food Distribution System (PFDS) with the National Social Security Strategy (NSSS), adjustments will be made to ensure coherence with the overarching objectives of the NSSS. The NSSS outlines the government's vision for enhancing social safety net programs to address evolving socio-economic challenges effectively. Recognizing the need for flexibility and adaptability in responding to changing circumstances, the PFDS will undergo a process of adaptation and refinement. This alignment process will involve a thorough review of the current structure and functioning of the PFDS to identify areas where improvements can be made to better align with the NSSS priorities. One key consideration will be the potential transition towards cash-based assistance programs within the PFDS framework. Cash-based assistance offers several advantages, including greater flexibility for beneficiaries to purchase food items according to their preferences and dietary needs, as well as reduced administrative costs associated with food procurement and distribution. However, any transition towards cash-based assistance will be gradual and carefully managed to minimize disruptions and ensure that vulnerable populations continue to receive essential support. Comprehensive assessments will be conducted to evaluate the feasibility and implications of such a transition, taking into account factors such as accessibility to financial services, market dynamics, and the nutritional needs of beneficiaries. Additionally, efforts will be made to enhance the efficiency and effectiveness of the PFDS through the adoption of innovative approaches and technologies. This may include the introduction of digital payment

¹⁵<https://www.who.int/news-room/commentaries/detail/breastfeeding-and-covid-19>

¹⁶ Ara G., Khanam M., Rahman A., Ahmed T. et al (2019) [Effectiveness of micronutrient-fortified rice consumption on anaemia and zinc status among vulnerable women in Bangladesh](#). Plos ONE 14 (1): e0210501.

systems, targeted interventions based on data analytics, and improved monitoring and evaluation mechanisms to track the impact of the program. Overall, aligning the PFDS with the NSSS priorities represents a strategic shift towards a more adaptive and responsive social safety net system. By incorporating cash-based assistance and leveraging technological advancements, the PFDS will be better positioned to address the evolving needs of vulnerable populations and contribute to the overarching goals of poverty reduction and social inclusion outlined in the NSSS.

Ensuring a social safety net for disaster-vulnerable communities is imperative to mitigate the devastating impacts of natural disasters and uphold the well-being of affected populations. These safety nets encompass a spectrum of measures, spanning pre-disaster preparedness, immediate crisis response, and long-term recovery and resilience-building efforts. Pre-disaster measures, such as early warning systems, evacuation plans, and community-based disaster preparedness training, empower vulnerable groups to effectively respond to emergencies. During disasters, essential support such as emergency shelters, food aid, medical assistance, and psychological counselling is provided to those affected. Post-disaster recovery efforts focus on infrastructure rebuilding, livelihood restoration, and addressing long-term vulnerabilities to minimize the risk of future disasters. Inclusive social safety nets prioritize the needs of vulnerable demographics, including women, children, elderly individuals, and persons with disabilities, ensuring equitable access to resources and support services. In Bangladesh, the densely populated coastal region and frequent exposure to cyclones, floods, and erosion render millions susceptible to displacement, livelihood loss, and food insecurity. Rural communities, particularly in low-lying areas and char lands, endure disproportionate impacts compounded by poverty, inadequate infrastructure, and limited resources. Moreover, urban slum dwellers face heightened vulnerability due to overcrowded living conditions and lack of basic services. Vulnerable groups are at heightened risk during disasters, experiencing elevated levels of displacement, loss, and trauma. Addressing the needs of disaster-vulnerable populations in Bangladesh necessitates comprehensive approaches focusing on risk reduction, resilience-building, and inclusive strategies tailored to the unique challenges faced by different communities.

Objective-5 & Pillar-5: Harmonise laws, rules, regulations and standards, agree on a common strategy and define roles for food safety

Harmonisation of the many laws, rules, regulations and standards across ministries will improve the food safety framework in the country. Indeed, overlapping of regulatory bodies and lack of coordination among ministries creates a haphazard and confusing situation, diminishing the goal of food safety¹⁷. Fifteen ministries are involved in food safety and quality control, while ten ministries are directly involved in food inspection and enforcement¹⁸. The role of the BFSA which collaborates with government agencies such as the BSTI in the MoInd, MoF, Plant Quarantine Wing, DAE, MoA and Bangladesh Small and Cottage Industries Corporation (BSCIC) to harmonise food safety standards in compliance with WTO requirements must also be better defined. Harmonising standards will improve the government's role in food safety oversight. The BFSA Technical Committee will need to determine the food safety and nutrition standards and elaborate steps in improving coordination between ministries to implement a food safety strategy

¹⁷ USDA. 2019. [Bangladesh Food and Agricultural Import Regulations and Standards Report FAIRS Annual Country Report](#).

GAIN Report Number: BG 1812

¹⁸ *Ibid*.

with clearly defined roles and responsibilities of different agencies/ministries. The food safety strategy developed by BFSA is expected to serve the purpose. Further, an assessment of resources and needs, ahead of the development of action plans will be conducted. Guidelines for the implementation of quarantine and import policy orders to ensure the safety of imported foods are also required. Legal provision of up to life-term imprisonment against the offense of adulterating food and medicinal products will be introduced.

BFSA needs to develop strict and clear guidelines/SoPs for food safety inspections and ensure strict compliance of the food inspection guidelines and manuals. Port teams should be trained to sample and then send the samples for testing in accredited laboratories which should ideally be located at the ports. The guidelines should include all the elements of inspection and certification systems for the food production, processing, preparation, marketing and imported foods. Legislation should clearly establish the authorities required to implement control over non-compliant food (both local and imported). These include the power to suspend or revoke authorizations, to seize and detain non-compliant products, to destroy non-compliant food, to levy administrative fines or penalties, to prosecute and seek court-imposed penalties. Existing initiatives -such as the Global Food Safety Initiative (GFSI)-approved third party assurance program introduced by USDA which is an overarching body that provides globally-recognised product certification for food safety, which is required by some companies for their suppliers- will be built upon to facilitate trade and export.

Comprehensive analyst training programmes are required along with the introduction of standardized methods of analysis and the application of standardized laboratory quality assurance program. With the increased demand of food safety, Bangladesh Agricultural University (BAU) has launched a degree of Food Safety Management Systems (FSMS). The concerned authority needs to utilise the undergraduates as future food analysts and inspectors. The current manpower should be provided with a refresher training and efforts should be made to recruit more skilled manpower. An expanded network of duly accredited laboratories for food safety will be developed and services expanded. BSTI's capacities also need to be enhanced.

The capacity of BAB to accredit inspection and certification bodies based on international standards (ISO 17020 and ISO 1702) must be strengthened, including by supporting its application for membership to the International Accreditation Forum. Its ability to accredit independent, third party inspection and certification systems will be promoted to help expand the certification and inspection ecosystem in Bangladesh beyond government-owned institutions.

Accelerate agricultural growth and resilience through climate-smart investments

Over the past twenty years, agriculture has been one of the main contributors to poverty reduction in Bangladesh. It now needs to accelerate the shift towards high-value agriculture, including horticulture, livestock, and fisheries as well as greater value addition to improve farmers' income and household nutrition. More recently, the positive trend in agricultural GDP growth rate culminated in the attainment of rice self-sufficiency and allowed the start of a structural, but slow, transformation towards diversification in production -especially towards poultry, fisheries and aquaculture. This has partially translated into improved diets and nutritional outcomes. In spite of these past and current achievements, Bangladesh is increasingly facing the challenges of having to sustain agricultural productivity growth and to boost the production of nutrient-rich foods (both non-cereal crops, livestock and fish products) in a context of increased short-term climate

variability (monsoon erratic patterns) and long-term climate change impacts (salinity intrusion, increasing temperatures), land scarcity and population pressure.

The FAO Climate-Smart Agriculture (CSA) approach is useful to reorient agriculture systems towards climate change resilience while maintaining the focus on productivity, sustainable food and nutrition security.¹⁹ CSA interventions²⁰ ensure increased productivity, strengthened climate resilience and reduced greenhouse gas emissions from agriculture. To this end, in April 2018, the GoB and the World Bank launched the Bangladesh Climate-Smart Agriculture Investment Plan (CSAIP) which aims at identifying climate-smart investment opportunities and accordingly, mobilise resources.

According to the CSAIP, the transition to a climate-resilient growth path is the only option to ensure that long term key agriculture development targets are met. By 2040, the current degree of sea-level rise may reduce available cropland by 24% in coastal divisions across growing seasons. Greater economic activity is expected to trigger +2% of greenhouse gas (GHG) emissions over the period 2015-2040 and to increased water consumption by 0.8-1.7 million litres per year, exacerbating water scarcity. CSA offers growth potential of more than 50% over 2015 levels for non-rice crops, livestock and fisheries. This would allow to maintain rice self-sufficiency, double the production of non-rice crops and meet the national demand for livestock and fish thereby meeting nutritional requirements after post-harvest losses, decrease income dependency on rice, decrease water use in irrigation, reduce nitrogen dioxide and other (Nationally Determined Contribution) emissions and increase the use of organic fertilisers.²¹

A key factor in adequate CSA adoption is its mainstreaming into core policy frameworks, as various sectors in Bangladesh are affected by climate change. The Bangladesh Delta Plan 2100 approved in September 2018 represents the combination of long-term cross-sectoral strategies and subsequent interventions to ensure food and water security, economic growth and environmental sustainability while reducing vulnerability to natural disasters and building resilience to climate change. This, notwithstanding the effects of the COVID-19 crisis, should contribute to helping Bangladesh reach the upper-middle income country status by 2030 and the high-income country status by 2041, as stated in Vision 2041. While Bangladesh is not new to CSA and related interventions, it is essential that these are embedded in a more holistic approach in mid-term planning (the Eighth Five Year Plan for instance) to ensure CSA technological adoption. To this end, the CSAIP identifies Five CSA Investment Packages with a total volume of USD 809 million (USD 2 billion, PPP).^{22,23} Synergies and cooperation at the regional level, especially with South and South-East Asian countries, and in close collaboration with CGIAR centres, must be reinforced. This also needs to involve the operationalisation of technological adoptions and learning from best practices in the region

¹⁹ More on Climate-Smart Agriculture can be found at <http://www.fao.org/climate-smart-agriculture/en/>.

²⁰ See for instance Programme I.2 on Urea Deep Placement.

²¹ IBRD and World Bank (2019) *Climate Smart Agriculture Investment Plan Bangladesh – Investment opportunities in the agriculture sector's transition to a climate resilient growth path*. Washington, DC.

²² PPP here means purchasing power parity.

²³ IBRD and World Bank (2019) *Climate Smart Agriculture Investment Plan Bangladesh – Investment opportunities in the agriculture sector's transition to a climate resilient growth path*. Washington, DC.

Examine and learn from green growth strategies for food and agriculture system

The 8FYP is committed to reduction in overuse of chemicals in agriculture, reduce GHG emission, follow GAP and put in place a Green Growth Strategy. As stated in the Plan, Bangladesh will study and learn from UNDP's Green Commodities Program, and the example of other countries (e.g., Rwanda's Green Growth and Climate Resilience National Strategy for Climate Change and Development to establish a low carbon and climate resilient economy by 2050, Chile's National Green Growth Strategy), to support its agenda for green growth. Currently, the country has set targets to reduce GHG emissions in the power, transport and industry sectors. Agriculture is reported to be a leading contributor accounting for 39% of total emissions²⁴. The BCCSAP includes actions to reduce emissions in the agriculture sector (through energy efficiency and water and fertiliser management), and scaling up afforestation and reforestation. The updated Nationally Determined Contribution (2020) under preparation will include a target for reduction in GHG from agriculture, which is currently absent.

²⁴ USAID. 2016. [Greenhouse Gas Emissions in Bangladesh](#). April.

1.Introduction

Sustainable, Nutrition-Sensitive and Resilient Food Systems

Bangladesh has shown tremendous advances in recent years with substantial socio-economic growth, which has translated into food and nutrition security (FNS) improvements. Agriculture has managed to keep up the needs of ever-growing population. Bangladesh is now the fourth largest rice producer in the world. Food self-sufficiency in terms per capita calorie availability has thus been achieved at national level.

Over the last decade, the country has been among the fastest growing economies in the world thanks to demographic dividend, strong ready-made garments exports and stable macroeconomic conditions. Bangladesh Government approved the National Food and Nutrition Security Policy 2020, aims to ensure its food and nutrition security related Sustainable Development Goals (SDG) and fulfils the relevant national and international commitments by 2030. Thus, the Government made NFNSP Plan of Action (PoA). The PoA covers the 10-year period of the Eighth Five Year Plan (8FYP, July 2020-June 2025).

The five objectives of the NFNSP are:

1. To ensure availability of safe and nutritious food for healthy diets
2. To improve access to safe nutritious food at an affordable price
3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements for healthy diets
4. To increase access to nutrition –sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions
5. To strengthen cross-sectoral FNS governance, coordination, capacity building and partnership for effective policy implementation

The CIP3 will guide the level of commitment and financial resources generated by the GOB and DPs to support the POA implementation. The CIP3 will work as a reference tool to guide and track progress of regional, local and sectoral investments plans and programmes. The CIP3 is a flexible tool which can leverage financial resource allocation to fulfil the objectives of the Eighth Five Year Plan (8FYP, 2021-2025) and SDGs while coping with unexpected exigencies such as the likely impact of COVID-19 on FNS. The Monitoring Report 2023 (MR 23) is the first yearly monitoring exercise of the CIP3.

This monitoring exercise is a joint effort of 19 ministries/divisions' agencies and departments led by the Ministry of Food's Food Planning and Monitoring Unit (FPMU). It tracks Food and Nutrition Security (FNS) progress and assesses it against CIP2 and SDGs targets, and it monitors FNS-related investments and commitments as of June 30th, 2022. The MR 23 also analyses the current policy developments. These dimensions are addressed within their relevant investment Pillar, programme and sub-programme, with each achievement contributing to the final NFNSP-PoA and CIP3 goal.

Accordingly, the likely impacts of COVID-19 pandemic on FNS are considered in the MR-23. The COVID-19 may have also have set back some of the progress achieved so far, with long term effects. The issue of food safety has also come to the fore due to increasing geographic separation of consumption and production centres as a result of urbanization. This crisis adversely affected development, potentially slowing down, or even temporarily reversing, some of the gains made in FNS. As of April 2020, the IMF forecasted the global economy would contract by -3% in 2020,

although in developing Asia, growth of 1% was still forecasted.²⁵ The South Asia region was expected to grow by 3% in 2020, its worst performance in 40 years.²⁶ Food and agriculture supply channels - primary production, processing, trade and logistics - and demand channels - exchange rates, energy and credit markets – were affected at both global and national level.²⁷ While it is difficult to assess the depth and duration of the impact, in Bangladesh, poor people are likely to be the most affected. In light of this global health crisis unfolding as it is being prepared, the report has had to adjust some of its recommendations for further actions.

Structure of the report

The methodological approach to the monitoring report and its results framework as presented in Chapter 2. Goal level indicators are discussed in Chapter 3, while Chapter 4 discussed on outcome level indicator and output level indicators are discussed in chapter 5. Each of the five objectives of NFNSP and the five pillars of CIP3 in turn, analysing their respective strategies and related programmes.

²⁵ IMF (2020). [World Economic Outlook, April 2020: The Great Lockdown](#). Washington, DC. International Monetary Fund.

²⁶ World Bank (2020) [Public Banks](#). South Asia Economic Focus. April. Washington, DC. World Bank.

²⁷ Schmidhuber, J., Pound, J. & Qiao, B. (2020) [COVID-19: Channels of transmission to food and agriculture](#). Rome. FAO.

2. Approach to monitoring

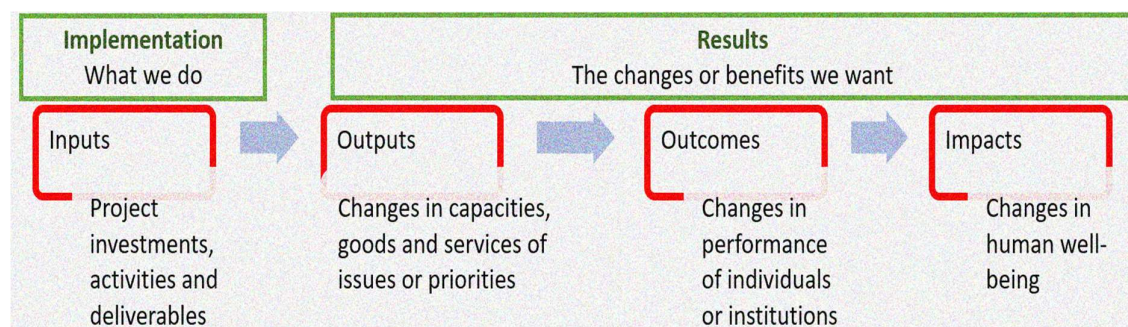
The PoA contains the FNS situation analysis as of 2022-23, proposed actions and the desired results by 2030. Actions in the PoA are believed to be linked to the NFNSP Goal through a “results chain”. The “results chain” outlines what sorts of changes are expected to happen as a result of implementing the PoA. The monitoring framework identifies three points along the “results chain” for the annual measurement of progress. This structured approach will help identify the specific aspects of the food system that are improved as a result of implementing the PoA, as well as lagging aspects that need further attention. This can guide more effective programming, resource use and accountability when implementing the PoA. It can encourage multiple actors to work together to create meaningful change.

This section summarises the results-based monitoring approach, then describes what points in the PoA “results chain” will be monitored, and finally describes the monitoring framework.

Results-based monitoring approach

Results-based monitoring aims to inform policymakers and decision makers about real-world progress so that they can adjust their programme designs and demonstrate policy impact. It involves a shift in emphasis from “what is being done” (projects) to “progress being made” (results). This aims to track results realized on the ground for food producers, food consumers and the food system.

Figure 1: From project monitoring to results-based monitoring



Source: Adapted from UNICEF (2017) Results-Based Management, UNICEF and J.Z. Ksek, J.Z. and R.C. Rist (2004) Results-Based Monitoring and Evaluation, World Bank

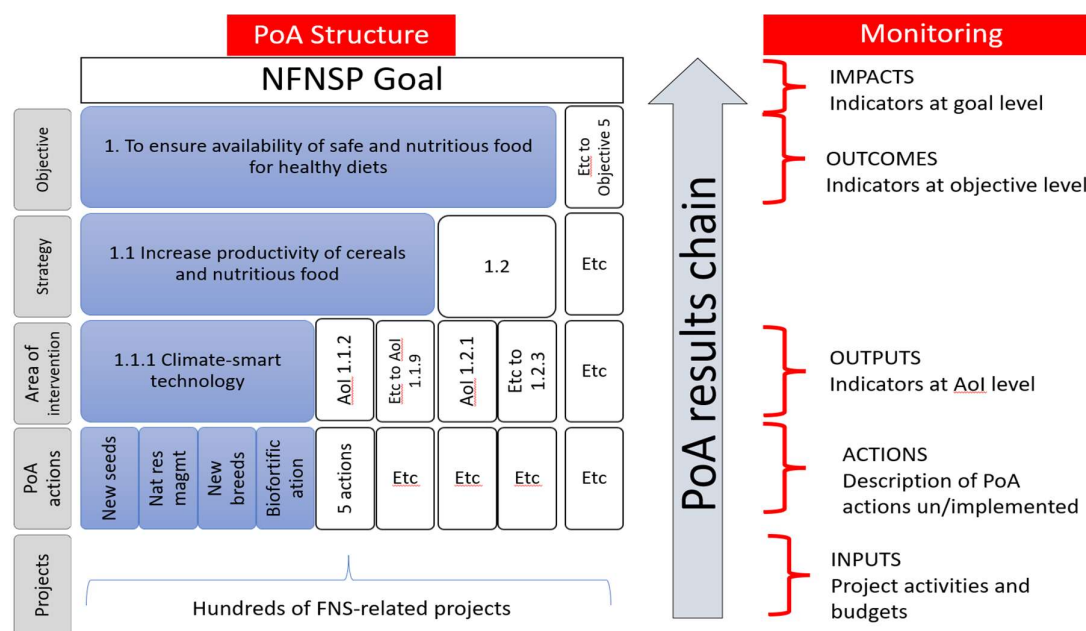
This is why results-based monitoring goes beyond the activities of individual projects, and instead the focus is on indicators of “outputs”, “outcomes” and “impacts”. This is shown in **Error! Reference source not found..** These are conceptualised as three specific points along a “results chain”, as explained below, that links the projects to the NFNSP Goal. The outputs, outcomes and impacts refer to increasingly complex and multidimensional results requiring the implementation of multiple projects. Financial spending and project execution, which will be monitored in the CIP3, are taken as “inputs” in the results-based monitoring approach.

Monitoring levels in the PoA’s expected “results chain”

The PoA, as approved, consists of at least 276 actions/ interventions to be undertaken by 2030 in order to realise Bangladesh’s NFNSP Goal. These actions are aligned to the policy directions and initiatives in the NFNSP, and are based on substantial analysis and consultations. As the PoA covers a whole decade, the exact content, definition, prioritisation, number of actions, etc. are open to adjustment and revision according to changing needs, priorities, financing, etc., and such changes to the PoA should be evidence-informed, including through the PoA monitoring process.

Error! Reference source not found. illustrates the PoA structure and its expected “results chain”. It shows the example of the PoA’s four proposed actions under AoI 1.1.1, which partly contributes to Strategy 1.1, which partly contributes to Objective 1, which partly contributes to the NFNSP Goal. The figure shows only abridged titles, and their rationale and justifications are in the Plan of Action.²⁸ Implementation of these four actions should result in new seeds, new breeds, strengthened biofortification and improved agricultural practices, and together these should lead to measurable improvements in diversified, sustainable nutrient-enhanced food production, thus contributing to measurable improvements in the availability of safe and nutritious food.

Figure 2: PoA structure, expected PoA results chain and PoA monitoring levels (example)



Error! Reference source not found. illustrates the way in which the PoA actions are logically and hierarchically structured into *complementary and related components*, as follows.

- Complementary and related actions, numbering between three to eight actions, are grouped into 64 Areas of Intervention (AoI), with an AoI being a key FNS issue that requires development and support – and **results at this level are defined as “outputs” for monitoring purposes.**
- Complementary and related AoIs, numbering up to nine AoIs, are grouped into 17 Strategies, with each Strategy representing a large section of the food system.
- Complementary and related Strategies are grouped together to lead to progress towards each of the five Objectives – and **results at this level are defined as “outcomes” for monitoring purposes.**
- Achievement of all five Objectives is necessary to fully realise the NFNSP Goal – and **this is defined as the “goal level” and monitored with human well-being indicators.**

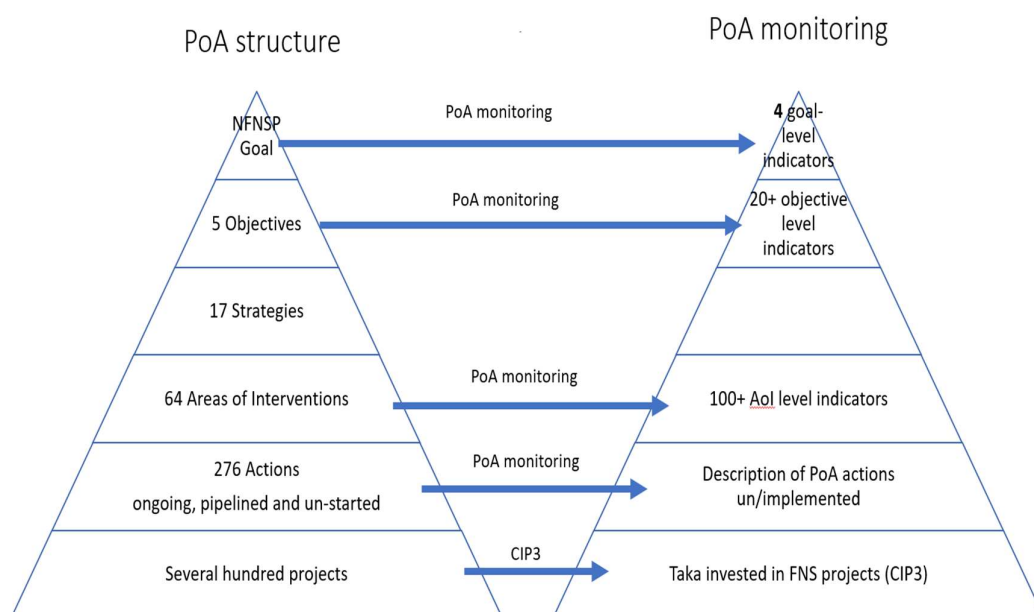
²⁸ The full titles are: Strategy 1.1. Increase productivity while ensuring sustainable production of cereals and nutritious food including horticulture, fisheries and livestock. Aol 1.1.1. Develop improved climate-smart technologies for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient-content. Action 1. Develop stress-tolerant high-yielding varieties of major cereals and nutrient-dense crops such as pulses, oilseeds, soybeans, fruits and vegetables. Action 2. Improve crop, soil and natural resources management practices including mechanization and “high tech” options to ensure high productivity and sustainability. Action 3. Develop improved breeds of livestock and fish and improved husbandry practices. Action 4. Develop biofortification to increase the nutrient-density of major food items.

The PoA actions will be implemented through projects that will be listed and annually updated in the NFNSP Country Investment Plan 3 (CIP3) – and these **investments are defined as “inputs” into the PoA**. The CIP3 will be monitored by taking an annual inventory of ongoing and pipelined FNS-related projects, estimation of each project’s execution, and for consistency, a subset of PoA monitoring indicators will be taken.

PoA monitoring indicators

The PoA’s monitoring indicators mirror the same hierarchical structure of the PoA itself. This is shown in **Error! Reference source not found..** Monitoring will involve: 1/ annual calculation of CIP3 investments, 2/ analytical description of the implementation of PoA actions and situations, and 3/ the measurement of results from CIP3 investments and implemented actions at AoI-level, Objective-level and Goal-level.

Figure 3: Link between PoA structure and PoA monitoring indicators



Definition of monitoring indicators

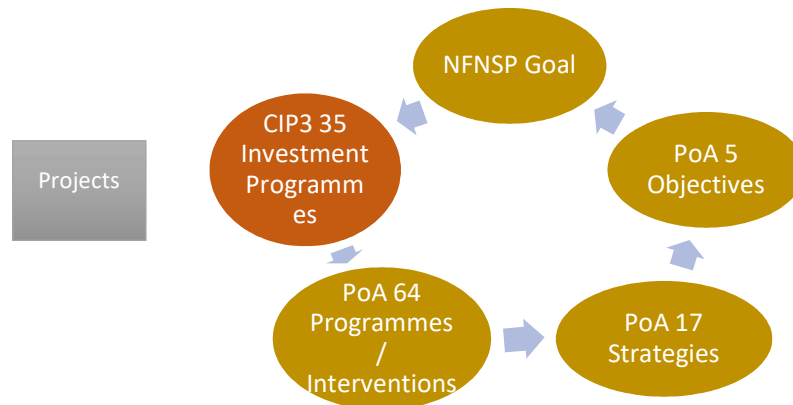
PoA monitoring indicators were defined by consulting FNS-related ministries/ agencies that would participate annually in the monitoring process. The selected indicators needed to be specific, measurable, attributable, relevant and timely (SMART). There were challenges in doing this in practice. For example, “specific” indicators ideally are narrowly defined and measure exactly what is intended to be measured, but sometimes it was hard to define indicators that fully meet this criterion given the available data. Or for example, the “measurable” criterion was sometimes difficult to fully satisfy, such as for some FNS-systemic issues under Objective 5. Elsewhere the “relevance” criterion was challenging to reflect the full contents of some AoIs, even when using multiple “specific” indicators for which data was available.

A practical balance was struck between “ideal indicators” based on technical criteria versus “feasible indicators” based on data that are (ideally) annually and officially available. An iterative process was followed, as outlined in **Error! Reference source not found.**, whereby potential indicators were proposed to FNS-related ministries/ agencies, which then stated the data they could supply, and on that basis, indicators were re-defined or alternative indicators were proposed, until eventually a final list of monitoring indicators was agreed upon by ministries/ agencies.

From interventions to investments: PoA-CIP3 building blocks

Figure 1 depicts the nexus NFNSP (2020) PoA (2021-2030) and CIP3 (2021-2025) which defines a coherent, time bound and results-oriented architecture. The PoA includes a 3-level result framework made of NFNSP overarching Goal of ensuring “*Adequate supply of safe & nutritious food; Increased purchasing power & access to food by all; & adequate nutrition for all individuals, especially women & children*”, and a coherent set of 5 Objectives, 17 Strategies and 64 Areas of intervention (AoIs).

Figure 4: NFNSP-PoA-CIP3 Nexus



The PoA was the result of several consultations at both national and district levels with the government, civil society organizations, the private sector and local stakeholders. GoB and DP allocate or commit financial resources to make the proposed interventions under the PoA AoIs actionable and these are clustered under the 5 pillars and 35 Investment programmes of the CIP3. The CIP3 introduces the concept of markers as detailed in Section 4. Figure 2 presents a detailed description of the building blocks of the PoA and the CIP3. To ensure that the PoA can be operationalized, investments are needed. This means transitioning from the PoA (2021-2030) -a 10-year plan- to the CIP3 (2021-2025) -a five-year investment plan. On one side, we have the desired interventions, on the other, the budgeted financing and commitments to ensure food systems in Bangladesh become sustainable and resilient. In both cases, there is a coherent results framework which is aligned to the Bangladesh National Nutrition and Food Security Policy (NFNSP, 2020) and its goal.

Figure 5: PoA-CIP3 Building Blocks

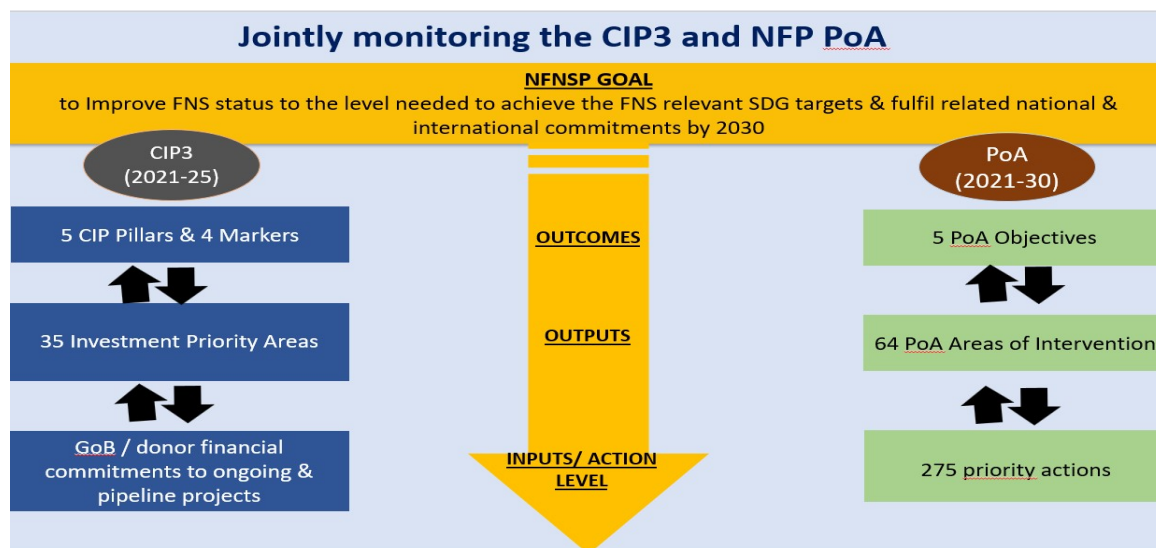
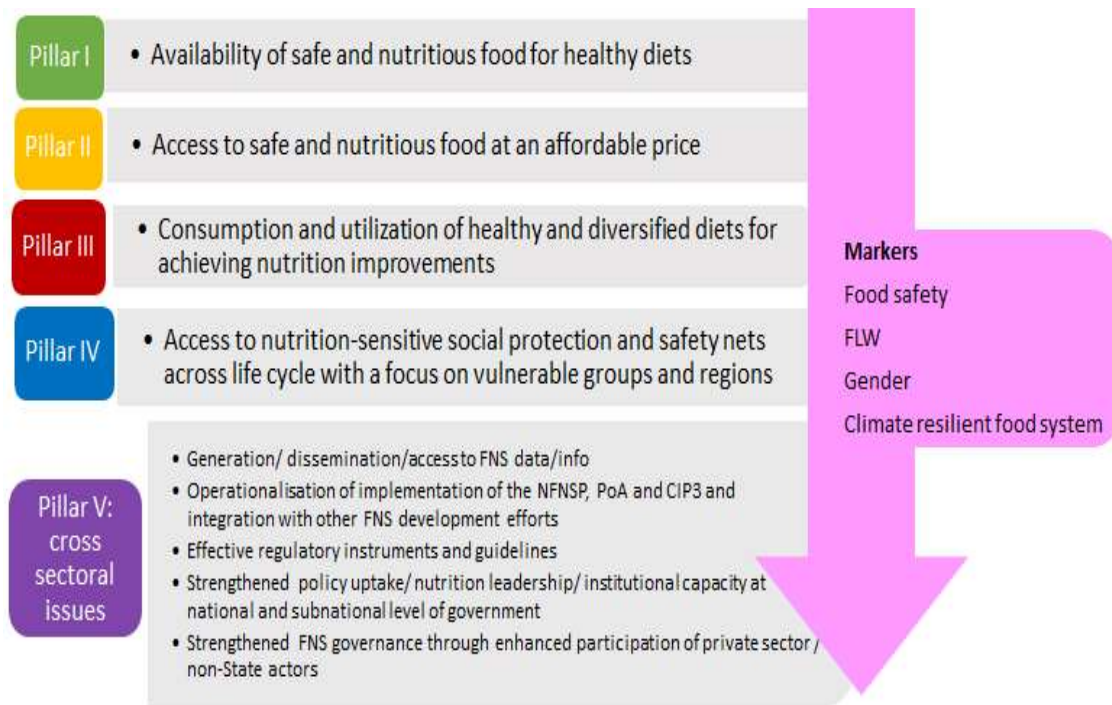


Figure 6. CIP3 Pillars



CIP3 structure

The PoA and CIP3 have five Objectives/Pillars:

- I. Availability of safe and nutritious food for healthy diets
- II. Access to safe and nutritious food at an affordable price
- III. Consumption and utilization of healthy and diversified diets for achieving nutrition improvements
- IV. Access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions
- V. Cross- sectoral/cross cutting issues which are relevant across the different elements of the food system.

Table 1 lists the Objectives, Strategies and Areas of Interventions of the PoA on the left and the CIP3 Pillars and Investment programmes and markers on the right, along with the correspondence between the two. The CIP3 Programmes are based on the Areas of Intervention (AoI) described in the PoA and have been designed to take into account the reality of investments. As such, CIP3 Programmes reduce overlaps that exist in the PoA to make a consistent investment framework.

3. Progress towards NFNSP goal

3.1 **NFNSP goal:** The Sustainable Development Goal to ‘*End hunger, achieve food security and improved nutrition and promote sustainable agriculture by 2030*’ (SDG2 – Zero hunger) - provides an opportunity to rethink the way food is grown, accessed, shared and consumed. Undernourished people in the world is increasing since 2018 due the COVID-19 pandemic and the conflicts between Russia and Ukraine. However, the number of undernourished people in the world has decreased to 735 million in 2022^{29,30} from 739 million in 2021. In some regions, natural resources to produce food are becoming scarce under competing uses and are threatened by natural calamities. It is measured through five proxy indicators (Table 1): Prevalence of Undernourishment (SDG 2.1.1); Food Insecurity Experience Scale (SDG 2.1.2); Prevalence of Stunting (SDG 2.2.1); and Prevalence of Wasting (SDG 2.2.2)

3.1.1 Assessment of progress towards achieving NFNSP goal

Table-1: NFNSP goal and 8FYP indicators relating to food and nutrition security

Goal: Improve the food and nutrition security status to the level needed to achieve the Food and Nutrition Security (FNS)-relevant SDG targets and fulfil related national and international commitments by 2030					
Proxy indicator	2019/20	2021/22	2022/23	Target	Verification source
Prevalence of Undernourishment (SDG indicator 2.1.1.)	13% (SOFI 2020)	11.4% (SOFI 2022)	11.2% (SOFI 2023)	12% by 2025 10% by 2030 (as per SDG Tracker)	SOFI, FAO SDG Tracker
Prevalence of moderate and severe food insecurity in the population, based on the Food Insecurity Experience Scale-FIES (SDG indicator 2.1.2)	31.5% (SOFI 2020)	31.7 (SOFI 2022)	31.1 (SOFI 2023)	Decreasing	SOFI, FAO SDG Tracker
Prevalence of stunting (height for age <-2 SD from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age (SDG indicator 2.2.1)	31.0 % (BDHS 2018)	24% (BDHS 2022)	24% (BDHS 2022)	20% by 2025 15.5% by 2030 (as per SDG Tracker)	BDHS, MICS-BBS, SDG Tracker
Prevalence of wasting among children under 5 years of age (<-2 SD of weight for height) (SDG indicator 2.2.2)	8% (BDHS 2018)	11% (BDHS 2022)	11% (BDHS 2022)	7% by 2025 5% by 2030	BDHS, MICS-BBS, SDG Tracker

Prevalence of Moderate and Severe Food Insecurity in the population and the Prevalence of Undernourishment (PoU) has decreased

Prevalence of Undernourishment (PoU) is an estimate of the proportion of the population that lacks enough dietary energy for a healthy, active life. It is FAO’s traditional indicator used to monitor hunger at the global and regional level, as well as SDG Indicator 2.1.1. It considers the mean food consumption and its variability and asymmetry against a normative requirement: the Minimum

²⁹ FAO, IFAD, UNICEF, WFP and WHO (2023) [The State of Food Security and Nutrition in the World 2022. Transforming food systems for affordable healthy diets](#). Rome. FAO.

³⁰ A number of updates have been made in the data for several countries in this year’s State of Food Security and Nutrition (SOFI) report in order to estimate world hunger with greater accuracy. This has resulted in a substantial downward shift of the number of undernourished series in the world, which explains the lower figures exposed here compared to MR19 for earlier years. The slow increasing trend in the number of people affected by hunger globally since 2014 is confirmed, however.

Figure 7 - Food Insecurity based on the FIES: what does it mean?



Source: *FAO, 2020*

Dietary Energy Requirements (MDER) of the average individual in a given sex and age group^{31,32}. In Bangladesh, PoU was 13.0% in 2019-20, 11.4% in 2021-22, and 11.2% in 2022-23, showing a slow decline since the CIP2 baseline. Despite this, achieving the 10% target set by the Planning Commission is still feasible. However, challenges such as the COVID-19 pandemic and the conflict between Ukraine and Russia may hinder progress. These crises are expected to reverse gains in nutrition, particularly affecting the most vulnerable groups. The link between inequity and malnutrition has become evident during the COVID-19 crisis⁵.

The Prevalence of Moderate or Severe Food Insecurity based on the Food Insecurity Experience Scale (FIES) provides an alternative household-level perspective by assessing people's perceptions and challenges in accessing nutritious and sufficient food.³³ On this scale, severe food insecurity, for example, indicates no food for a day or more (Figure 3). The three-year average of moderate food insecurity for 2022-23 has declined at 31.1% compared to 31.5% for 2019-20. Severe food insecurity, based on the FIES, has improved, falling steadily to 11.00 % in 2020-22 from 13.3% in 2014-16. These figures are noticeably below the South Asia averages, which stand at 19.7% for severe food insecurity and 41.3% for moderate food insecurity over 2020-22, respectively.³⁴ Given the potential impact of the COVID-19 crisis on food security, it is advisable to conduct the FIES survey, which has now been adapted to capture such effects³⁵.

Considering the Food Security Survey Statistics 2023 conducted by BBS, around 2.92 % people have been suffering from moderate and severe household food insecurity and 0.82% people have been suffering from severe food insecurity in national level.

³¹ FAO (2014) *Refinements to the FAO methodology for estimating the Prevalence of Undernourishment indicator*. FAO Statistics Division Working Paper Series. ESS/14-05. September.

³² Following the FAO methodological approach, normative requirements are based on the Basic Metabolism Rate (BMR) per kilogram of body mass, multiplied by the ideal weight of a healthy person given their height, and multiplied by a coefficient of Physical Activity Level which factors-in physical activity.

³³ During the last 12 months, was there a time when, because of lack of money or other resources: 1. You were worried you would not have enough food to eat? 2. You were unable to eat healthy and nutritious food? 3. You ate only a few kinds of foods? 4. You had to skip a meal? 5. You ate less than you thought you should? 6. Your household ran out of food? 7. You were hungry but did not eat? 8. You went without eating for a whole day?

³⁴ FAO, IFAD, UNICEF, WFP and WHO (2023) *The State of Food Security and Nutrition in the World 2023*. Rome, FAO.

³⁵ FAO (2020) *Using the Food Insecurity Experience Scale (FIES) to monitor the impact of COVID-19*. Rome.

Significant Progress in the reduction of child undernutrition

Bangladesh has made remarkable progress in addressing child undernutrition, particularly in reducing stunting (low height for age, SDG indicator 2.2.1), which is caused by inadequate nutrition and recurrent infections or chronic diseases. Stunting reflects poor environmental conditions and long-term growth restrictions, leading to reduced learning and productive capacity. The prevalence of stunting among children under 5 decreased to 24% in 2022 from 31% in 2018 and 60% in the mid-1990s. The Multiple Indicator Cluster Survey (MICS) 2019 data also indicates a decline to 28%.^{36,37} This trend makes reaching the 8FYP target of 20% by 2025 seem feasible.

The prevalence of wasting (or low weight for height, SDG indicator 2.2.2) among children under 5 reflects short-term undernutrition, typically caused by inadequate dietary intake, infections, and diseases such as diarrhoea. Wasting has declined to 9.4% in 2019 from 14% in 2014, aligning with the NPAN2 2025 target of 8%. However, recent data from BDHS-2022 indicates a prevalence of 11% in Bangladesh, attributed to factors such as price hikes and issues related to Water, Sanitation, and Hygiene (WASH). Similar to stunting rates, wasting is highest in Sylhet and lowest in Dhaka division.³⁸

Important role of mother's education and wealth accumulation on nutritional outcomes

Studies on the determinants of child growth using the Bangladesh Demographic and Health Surveys (BDHS) from 1997 to 2022 found that household wealth accumulation and parental education were the key drivers of the rapid reduction of undernutrition - especially in severe child stunting. 40% under 5 children has been suffering from stunting with 'no education of mother', whereas 16% under 5 children has been suffering from stunting with secondary education of mother (BDHS-2024). 15% under 5 children are severe stunted with no education of mother, whereas only 4% children are severe stunted with secondary education of mother.

Health, sanitation and demographic factors played significant but secondary roles.³⁹ The determinants of wealth accumulation include pro-poor economic growth and rapid agricultural growth, off-farm diversification, labour-intensive manufacturing, and overseas workers' remittances (15.5 billion USD in 2018, up 15% from 2017), which is much higher than foreign direct investment (about 3 billion USD in 2018⁴⁰). With regards to maternal education, the prevalence of stunting was 18% amongst children whose mother had secondary education compared to 47% whose mother had no formal education.⁴¹ Paternal education appears to be as

³⁶ While MICS data are not fully comparable with BDHS, they can be used as a proxy.

³⁷ BBS and UNICEF (2019) [Progotir Pathay, Bangladesh Multiple Indicator Cluster Survey 2019, Key Findings](#). Dhaka.

³⁸ Mohsena, M., Goto, R. & Mascie-Taylor, C.G.N. (2015) [Regional variation in maternal and childhood undernutrition in Bangladesh: evidence from demographic and health surveys](#). WHO South-East Asia Journal of Public Health. July–December; MICS (2019) [Nutritional Status of Children](#). Bangladesh 2019.

³⁹ Headey, D., Hoddinott, J., Ali, D., Tesfaye, R. & Dereje M. (2015) [The Other Asian Enigma: Explaining the Rapid Reduction of Undernutrition in Bangladesh](#). *World Development*. Volume 66. Saha, R. G. & Kayum Shikdar, Md. (2019) [Socio-economic Determinants Affecting Nutritional Outcomes of the Children in Bangladesh](#). *IOSR Journal of Humanity and Social Sciences*. Volume 24. Issue 1; Sultana, P., Rahman, Md. M. & Akter, J. (2019) [Correlates of stunting among under-five children in Bangladesh: a multilevel approach](#). *BMC Nutrition*. 5:41.

⁴⁰ [World Bank Data](#).

⁴¹ National Institute of Population Research and Training (NIPORT), Mitra and Associates & ICF International (2016) [Bangladesh Demographic and Health Survey 2014](#). Dhaka, Bangladesh and Rockville, Maryland, USA: NIPORT, Mitra and Associates, and ICF International.

important as maternal education, for lower child undernutrition, higher food security, improved toilet facilities and better nutritional status and awareness of child's undernutrition status.⁴²

Considering wealth quintile, 2.7% under five children has been suffering from severe chronic undernutrition or stunting with highest wealth quintile, whereas 9.5% children are stunted in the highest wealth quintile.

Thus, rapid and sustained nutritional improvements are achieved through a multidimensional and multi-sectoral approach, and not only through large nutrition-only programmes.⁴³ Persistent disparities by region and socio-economic group prevent a faster and more inclusive reduction in undernutrition. As a consequence, the prevalence of stunting remains higher in rural compared to urban areas and in particular highest in Sylhet, Mymensingh and Barisal for prevalence of stunting (43%, 36% and 33%, respectively) and wasting (10%, 9% and 9%, respectively)⁴⁴ as per BDHS 2018. Women in Sylhet have an average lower body weight than women in Chittagong, Rajshahi and Khulna.⁴⁵ As per the BDHS 2022, prevalence of stunting is also higher in Sylhet Division (34%).

Ukraine-Russia war situation, climate change and COVID-19 pandemic might negatively impact progress towards the CIP3 goal

Three C's i.e. i) Conflict (war between Ukraine-Russia), ii) Climate Change and iii) COVID-19 have been considered as the key drivers to deteriorate food and nutrition security situation.

The war in Ukraine has caused severe disruption to national and worldwide food supplies. Ukraine is a major exporter of wheat, maize, and oilseeds, staples that are now suffering a war-triggered supply risk. Evidence shows that this war is not only generating food insecurity in Ukraine, but also globally, due to the shortage in grain production and supply and the higher prices. (Walter L. F. et al., *Foods*, 2023, 12, 3996).

⁴² Hossain, M.B. & Khan, Md. H.R. (2018) [*Role of parental education in reduction of prevalence of childhood undernutrition in Bangladesh. Public Health Nutrition*](#). Volume 21. Issue 10. pp 1845-1854.

⁴³ Headey, D., Hoddinott, J., Ali, D., Tesfaye, R. & M. Dereje (2015) [*The Other Asian Enigma: Explaining the Rapid Reduction of Undernutrition in Bangladesh*](#). *World Development*. Volume 66.

⁴⁴ National Institute of Population Research and Training (NIPORT) & ICF (2019) [*Bangladesh Demographic and Health Survey 2017-18: Key Indicators*](#). Dhaka, Bangladesh, and Rockville, Maryland, USA.

⁴⁵ Mohsena, M., Goto, R. & Mascie-Taylor, C.G.N. (2015) [*Regional variation in maternal and childhood undernutrition in Bangladesh: evidence from demographic and health surveys*](#). *WHO South-East Asia Journal of Public Health*. July–December.

4. Progress towards NFNSP objectives level outcomes

4.1 Progress towards NFNSP objective-1: Diversified and sustainable agriculture, fisheries and livestock for healthy diets- Objective 1 comprises two strategies emphasizes on Increase productivity while ensuring sustainable production of nutritious foods and Scale up nutrition-sensitive diversification of food production. This objective also consists of 7 CIP3 programmes mainly emphasizes on R&D and improved technology for more productive nutrient-rich and sustainable agriculture in rural and urban areas, Gender, climate and nutrition sensitive extension services, Improved efficiency of agricultural inputs and Promotion of agricultural diversification into commodities with high nutrient and micronutrient content and market value including regional and ethnic foods.

4.1.1 Assessment of progress towards achieving objective-1

Table 2 – NFNSP objective-1: Selected outcome level performance indicators

CIP3 Outcome proxy indicators	2019/20	2020/21	2021/22	2022/23	Target	Source
Rice import dependency three years moving (import/availability in (three years moving average)	3.43%	1.35%	2.01%	2.88%	0%	FPMU/ MISM, BBS
Agricultural sector GDP ⁴⁶ growth rate (%)	3.42%	3.17%	3.05%	3.37%	3.9% 	BBS,DA E,DLS,D oF,BFD, BB
Crop and horticulture sector GDP growth	2.50%	2.29%	2.61%	3.15%	6.7%	
Fisheries sector GDP growth	4.40%	4.11%	2.64%	2.80%	3.8%	
Livestock sector GDP growth	3.19%	2.94%	3.10%	3.17%	2.7%	
Forestry sector GDP growth	5.34%	4.98%	5.08%	5.13%	2.2%	
Wage differential between males and females in agriculture	24.76%	25.63%	26.17%	26.9%	Decrease over time 	BBS

The colour indicator shows the progress achieved: target reached  on track ; off track .

Rice import dependency slightly increased from the previous year

Rice import dependency is measured as the quantity-ratio between imports and national availability, on a three-year moving average basis. Import dependency has gradually been increased to 2.88% in 2022/23 from 1.13% in 2020/21, but still below the CIP3 baseline. Rice import dependency was 3.43% in 2019/20 and next year it fell to 1.13% due to a record domestic rice production of 37.60 MMT in 2020/21 and a consequent waning of import demand. However, due to the government of the market controlling, the amount of imported (public and private) rice has increased in the last three years. Hence, it shows a gradual higher import dependency. Though the domestic production last year was higher (39.1 Million MT) than ever, imports in the last three years were slightly higher than previous year.

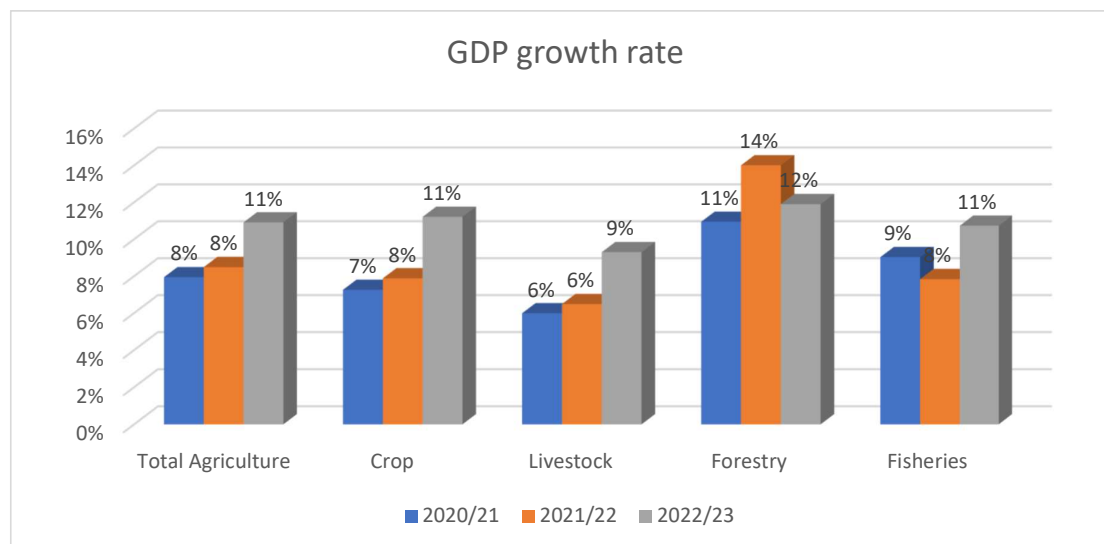
Diversification in production increased over time

As observed in Table 2, the overall agriculture sector GDP growth rate in 2022/23 was higher than those of 2020/21 and 2021/22. The GDP growth rate for crop and horticulture was the highest in 2022/23 over the 2020/21, 2021/22 and 2019/20 and a significant below to the 7FYP targets. Fisheries sector GDP growth rate was a slight higher than that of previous year (2021/22) but much lower than 2019/20 and 2020/21 as well as 7FYP targets. Livestock sector GDP growth rate slightly increased in 2022/23 gradually since 2020/21 but was below the base year 2019/20. However, Livestock sector GDP growth rate was higher than the target (2030). Forestry sector GDP growth rate was 5.13% in 2022/23 which was higher than the previous year but lower than the baseline year 2019/20. These happens due to global COVID-19 pandemic

⁴⁶ The agricultural sector includes crop and horticulture, livestock and related products, forestry and related services, and fisheries. The forestry sector has been included in MR20 for the first time in recognition of its role in food security, sustainable development and preserving agrobiodiversity.

and its influence in different activities of agriculture (Figure 5) as well as international conflict issue. However, the overall agricultural GDP growth has been sustained: from a 3.42% in the baseline year, it peaked at 3.17% in 2020/21 and slightly decreased but close to the seven Five-year plan's target (3.9%).

Figure 8 - Sectoral growth (at current price) in agriculture over the reference period (2020/21 – 2022/'; Base 2015/16)



Source: BBS

Diversification in agriculture remained sluggish over the reference period, driven mostly by forestry. Through their more dynamic performance, livestock, forestry crop and horticulture, and fisheries sectors increased their shares in total agriculture GDP respectively by 3.17, 5.13, 3.15 and 2.80 percentage points.

Figure 9 - Evolution of the agricultural GDP (at current price) composition by subsector



Source: BBS

The differential in wages between males and females in agriculture rebounded

According to ILO (2018)⁴⁷, Bangladesh has one of the lowest gender wage gaps in the world and first among South Asian countries.⁴⁸ This surprising result may in part be attributed to the garment sector where workers' organisations have contributed to reducing the gap. Concurrently, Bangladesh registered a 3.4% increase in wages over the period 2008-2017, against the South Asia average rise of 3.7%. In this context of record low gender wage gap and slow wage increases compared to other countries in South Asia, the agricultural wage differential⁴⁹ rebounded to 26.9% in 2022/23 from 26.17% in 2021/22 and from 24.76% in the baseline year (Table 1). This is due to a higher increase in agricultural male wages over female wages in the last financial year.

4.1.2 Policy challenges and recommendations for further actions

Accelerate agricultural growth and resilience through climate-smart investments

Over the past twenty years, agriculture has been one of the main contributors to poverty reduction in Bangladesh. It now needs to accelerate the shift towards high-value agriculture, including horticulture, livestock, and fisheries as well as greater value addition to improve farmers' income and household nutrition. More recently, the positive trend in agricultural GDP growth rate culminated in the attainment of rice self-sufficiency and allowed the start of a structural, but slow, transformation towards diversification in production-especially towards poultry, fisheries and aquaculture. This has partially translated into improved diets and nutritional outcomes. In spite of these past and current achievements, Bangladesh is increasingly facing the challenges of having to sustain agricultural productivity growth and to boost the production of nutrient-rich foods (both non-cereal crops, livestock and fish products) in a context of increased short-term climate variability (monsoon erratic patterns) and long-term climate change impacts (salinity intrusion, increasing temperatures), land scarcity and population pressure.

The FAO Climate-Smart Agriculture (CSA) approach is useful to reorient agriculture systems towards climate change resilience while maintaining the focus on productivity, sustainable food and nutrition security.⁵⁰ CSA interventions⁵¹ ensure increased productivity, strengthened climate resilience and reduced greenhouse gas emissions from agriculture. To this end, in April 2018, the GoB and the World Bank launched the Bangladesh Climate-Smart Agriculture Investment Plan (CSAIP) which aims at identifying climate-smart investment opportunities and accordingly, mobilise resources.

According to the CSAIP, the transition to a climate-resilient growth path is the only option to ensure that long term key agriculture development targets are met. By 2040, the current degree of sea-level rise may reduce available cropland by 24% in coastal divisions across growing seasons. Greater economic activity is expected to trigger +2% of greenhouse gas (GHG) emissions over the period 2015-2040 and to increased water consumption by 0.8-1.7 million litres per year, exacerbating water scarcity. CSA offers growth potential of more than 50% over 2015 levels for non-rice crops, livestock and fisheries. This would allow to maintain rice self-sufficiency, double the production of non-rice crops and meet the national demand for livestock and fish thereby meeting nutritional requirements after post-harvest losses, decrease income dependency on rice, decrease water use in irrigation, reduce nitrogen dioxide and other (Nationally Determined Contribution) emissions and increase the use of organic fertilisers.⁵²

A key factor in adequate CSA adoption is its mainstreaming into core policy frameworks, as various sectors in Bangladesh are affected by climate change. The Bangladesh Delta Plan 2100 approved in September

⁴⁷ ILO (2018) *Global Wage Report 2018/19 – What lies behind gender pay gaps*. Geneva. International Labour Office.

⁴⁸ World Economic Forum (2019) *Global Gender Gap Report 2020*. Geneva.

⁴⁹ The wage differential is calculated in terms of 'male premium': (male wage – female wage)/ female wage.

⁵⁰ More on Climate-Smart Agriculture can be found at <http://www.fao.org/climate-smart-agriculture/en/>.

⁵¹ See for instance Programme I.2 on Urea Deep Placement.

⁵² IBRD and World Bank (2019) *Climate Smart Agriculture Investment Plan Bangladesh – Investment opportunities in the agriculture sector's transition to a climate resilient growth path*. Washington, DC.

2018 represents the combination of long-term cross-sectoral strategies and subsequent interventions to ensure food and water security, economic growth and environmental sustainability while reducing vulnerability to natural disasters and building resilience to climate change. This, notwithstanding the effects of the COVID-19 crisis, should contribute to helping Bangladesh reach the upper-middle income country status by 2030 and the high-income country status by 2041, as stated in Vision 2041. While Bangladesh is not new to CSA and related interventions, it is essential that these are embedded in a more holistic approach in mid-term planning (the Eighth Five Year Plan for instance) to ensure CSA technological adoption. To this end, the CSAIP identifies Five CSA Investment Packages with a total volume of USD 809 million (USD 2 billion, PPP).^{53,54} Synergies and cooperation at the regional level, especially with South and South-East Asian countries, and in close collaboration with CGIAR centres, must be reinforced. This also needs to involve the operationalisation of technological adoptions and learning from best practices in the region.

Develop stress-tolerant high-yielding varieties of major cereals and nutrient-dense crops such as pulses, oilseeds, soybeans, fruits and vegetables

As the apex of the National Agricultural Research System (NARS) which is composed of 10 research institutes, the Bangladesh Agricultural Research Council (BARC) is responsible for strengthening the national agricultural research capability. These organizations have developed research collaborations with several international agricultural research centres, agricultural universities in Bangladesh, and with various local research entities. The PoA will support and leverage the work of these research institutes. The particular emphasis will be on the development of stress-tolerant rice varieties suited to coastal saline areas, drought-prone north-west region, and submergence-prone low-lying southern delta region. Several improved rice varieties with these characteristics have been developed and disseminated but this past effort needs to be further reinforced to increase the number of varieties suited to diverse farming conditions of Bangladesh⁵⁵. Similarly, improved maize and wheat varieties are being developed by Bangladesh Wheat and Maize Research Institute (BWMRI) in collaboration with the International Maize and Wheat Improvement Center (CIMMYT). In addition, the Bangladesh Agricultural Research Institute (BARI) is also developing improved varieties of various legume and pulses that are nutrient-rich in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) as well as orange fleshed sweet potato (*komola sundari*) which is a rich source of Vitamin A. Research by private firms will be encouraged.

Improve crop, soil and natural resources management practices including mechanization and “high tech” options to ensure high productivity and sustainability

Like with the development of improved varieties, the national research institutes are also developing crop, water, soil and natural resource management options adapted to different agro-ecology of Bangladesh. Examples of these improved technologies include the alternate wetting and drying method for irrigation, fertiliser application based on soil tests, balanced use of organic and inorganic fertilisers, integrated pest management approach to reduce pesticide application, improved methods of weed control, conservation tillage, *sorjan* farming⁵⁶ and mechanization options to overcome labour shortages during periods of peak-labour demand such as transplanting and harvesting of rice. Opportunities to increase the efficiency of input use through “high-tech” approaches will be exploited. Investments towards the development of agricultural machinery that is resource and energy efficient along with the training of farmers will be made. Efforts will be made to customise the equipment to the specific needs of Bangladeshi farmers (in line with NAP PoA 2020 Programme 2.2.1).

⁵³ PPP here means purchasing power parity.

⁵⁴ IBRD and World Bank (2019) [Climate Smart Agriculture Investment Plan Bangladesh – Investment opportunities in the agriculture sector's transition to a climate resilient growth path](#). Washington, DC.

⁵⁵ Food Planning and Monitoring Unit (FPMU).2020. *Op. cit*

⁵⁶ Sorjan farming method combines vegetable crops with fish farms and makes land that is waterlogged during the rainy season but faces drought and salinity in the dry season become productive.

Develop improved breeds of livestock and fish and improved husbandry practices

The livestock sector is the main source of high-quality protein in the form of meat, milk and eggs. However, the productivity of livestock in Bangladesh in terms of meat and milk production is extremely low due to their origin from a poor genetic base. In addition, the lack of proper veterinary services and poor-quality feeds keep their productivity low. So, opportunities exist to increase the productivity of livestock sector through the application of science-led modern methods of breed improvement complemented by the delivery of effective veterinary services, and improved feeding and management systems. Local adapted breeds of livestock could be developed into high-yielding breeds through suitable breeding approaches. Issues of illegal livestock germplasm need to be addressed. The PoA will support and leverage the Bangladesh Livestock Research Institute's (BLRI) research with particular emphasis on using science-based methods for breed improvement, development of effective veterinary services, feed quality assurance and improvements in feeding practices. A gene bank will be developed for indigenous fish to be conserved and multiplied.

Improve support to smallholder farmers by adapting it to their farming profile

Smallholder farmers in Bangladesh have been profiled by the Consultative Group to Assist the Poor (CGAP) through a nationally representative survey, according to their level of education, socio-economic status, access to emergency funds, mobile phone ownership, their attitude towards the future, and encountering unexpected life and farming events. The population of smallholder farmers is accordingly classified into four distinctive categories.⁵⁷

- Farming for sustenance (27% of all farmers). Vulnerable smallholders, largely living below the extreme poverty line, relying on their farm for survival, low level of education and limited financial inclusion (29% of this group);
- Battling the elements (31% of all farmers). Limited level of education, nearly universal mobile phone ownership; more financially included (the case for 38% of this group), access to mobile money and savings' modalities;
- Options for growth (31% of all farmers). Stable and resilient to shocks; largely living above the poverty line; relying on agricultural income, with the possibility to turn to off-farm income opportunities; universal mobile phone ownership; more financially included (59% of this group);
- Strategic agricultural entrepreneurship (11% of all farmers). Diversified and thriving farms, with multiple sources of income and access to several financial tools; 69% of financial inclusion.

The different groups continuously face climate and animal health-related challenges - such as floods and drought events, crop pests and animal diseases; market-related risks –fragmentation of the value chain, high intermediation fees, consequent lack of traceability; access to/poor quality of productive inputs; post-harvest losses due to lack of post-harvest storage facilities and modern reliable transports (cold chain for instance), market fluctuations; and cash constraints. This profiling could be used to ensure that tailored support is provided to smallholder farmers.

Promote sustainable use of forests to ensure the livelihood of local communities and agrobiodiversity preservation

The importance of forests for the sustainability of food and agricultural systems is widely recognised.⁵⁸ Forests and trees in Bangladesh are a rich source of building materials, food, medicine, fuel and other products (such as honey, wax and herbs), thereby providing livelihoods to local communities. They perform important ecosystem functions such as carbon sequestration

⁵⁷ Anderson J., Moler A. & Kretchun N. (2016) [National Survey and Segmentation of Smallholder Household in Bangladesh – Understanding Their Demand for Financial, Agricultural and Digital Solution](#). CGAP Working Paper. December.

⁵⁸ Powell, B., Ickowitz, A., McMullin, S., Jamnadass, R., Padoch, C., Pinedo-Vasquez, M. & Sunderland, T. (2013) [The Role of Forests, Trees and Wild Biodiversity for Nutrition-Sensitive Food Systems and Landscapes](#). ICN2 Second International Conference on Nutrition – better nutrition better lives. FAO – WHO.

and soil and water protection. They also support resilience as forest products are often consumed during periods of food scarcity and provide livelihood safety nets. Foods from forests, notably, leaves, seeds, nuts, fruits, mushrooms, honey, insects and animals, are rich in micronutrients and can make important contributions to diet diversity and nutrition.

While the country's forests are heavily utilised, the ability to restore forests is limited. Forests and tree resources are under constant pressure from urbanisation and practices which leave forested landscapes degraded. For instance, the increased population due to the massive influx of displaced Rohingya people since 2015 has put pressure on natural resources in Cox's Bazar (Box 2). Although overall tree canopy coverage increased modestly from 2000 to 2014, the natural forest area declined⁵⁹, and there is a persistent widening gap between the demand and supply of forest products.⁶⁰ A major challenge faced by Bangladesh in the near future will be the balance between sustainable use and conservation of these resources, and economic growth. Forest cover in the country was only 12.8% in 2015 (14.1% excluding water bodies) but sustainable development targets are currently being set to increase it. Fortunately, newly available tools such as the Bangladesh Forest Inventory and Land Cover Map 2015, and data sharing policies, can help reach these targets. Further work is being carried out under a large World Bank funded project (*Sustainable Forests and Livelihoods- SUFAL*), which aims to improve collaborative forest management approaches and to support the next national forest inventory, tree planting, and other initiatives. Finally, evidence shows that research on ecosystem services valuation is still insufficient in Bangladesh⁶¹: a better assessment of the socio-economic and environmental contribution of forestry to agriculture and the rest of the economy would provide more evidence to guide sound policymaking such as setting up carbon emission permits or payment for environmental services.

4.2 To ensure access to safe and nutritious food at an affordable price

Objective 2 comprises four strategies emphasizes on improvement and management of post-harvest marketing, setting up financial intermediation services, ensuring trade liberalisation, strengthen ICT-based market information system, promote the fortification and nutrition enhancement, building the capacity of the private sector to test food, promote inclusive cooperative/group-based processing etc. This objective also aligned with 9 programmes of CIP3 mainly emphasizes on efficient FVCs through transport infrastructure, innovation and improvements in post-harvest processing and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents, promotion of agriculture-driven employment.

⁵⁹Potapov, P., Siddiqui, B., Iqbal, Z., Aziz, T., Zaman, B., Islam, A., Pickens, A., Talero, Y., Tyukavina, A. & Turubanova, S. (2017) [Comprehensive monitoring of Bangladesh tree cover inside and outside of forests, 2000–2014](#). *Environmental Research Letters*.12(10).

⁶⁰ Rahman, L.M. (2016) [Bangladesh National Conservation Strategy- Forest Resources](#). Dhaka. IUCN and Bangladesh Forest Department.

⁶¹Barua, S.K., Boscolo, M. & Animon, I. (2020) [Valuing forest-based ecosystem services in Bangladesh: Implication for research and policies](#). *Ecosystem Services*. Volume 42. April.

4.2.1 Assessment of progress towards achieving objective-2

Table 3 - NFNSP objective-2: Selected outcome level performance indicators

CIP2 outcome proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Target	Source
Average annual CPI inflation rate	5.65%	5.6%	6.2%	9.74%	4.6% by 2025 8FYP	Bangladesh Bank; National Account Statistics, BBS
Change in agricultural wage rate of male agricultural labourers (without food)	3.6%	3.32%	7.43%	7.66%	6.56% by 2021 8FYP (per capita real GDP growth rate + 0.5)	Bangladesh Bank/DAM/ BBS

The colour indicator shows the progress achieved: target reached ; on track ; off track .

The CPI inflation has increased and far-off to the target

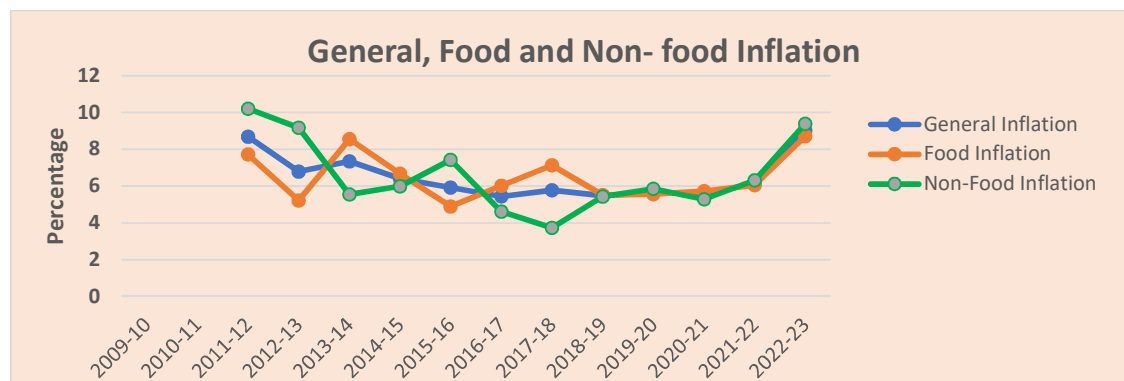
The average annual CPI inflation rate in 2019-20 the base year period was 5.65% which was relatively a moderate level of inflation. Despite the onset of the COVID-19 pandemic in 2020, Bangladesh managed to keep inflation at 5.6%. This could be attributed to the government's economic measures and interventions to stabilize prices during the crisis. In 2021-22, the inflation rate increased to 6.2%. This might be a consequence of both global and domestic factors. The pandemic continued to impact global supply chains, affecting prices of imported goods. In 2022-23 the inflation rate saw a significant jump to 9.74%. This sharp increase could be a result of multiple factors, including the lingering effects of the COVID-19 pandemic, global supply chain disruptions, and potentially rising costs due to geopolitical unrest and conflicts in different parts of the world.

The government sets target of CPI inflation rate for 2025 is 4.6%. Achieving this target might pose a challenge, given the recent trend of increasing inflation. It would require effective economic policies, including measures to control the impacts of global events on domestic prices. Actually, covid-19 has broken the entire economy of the world, disrupted global supply chains, affecting the availability and cost of goods. On the other hand, geopolitical tensions and conflicts can disrupt international trade, affecting the prices of commodities, rising energy prices can contribute to inflation.

While Bangladesh has navigated the challenges reasonably well, the recent surge in inflation demands careful economic management. Achieving the 2025 target requires a comprehensive approach that considers both domestic and global factors, particularly the ongoing effects of the COVID-19 pandemic and geopolitical uncertainties. The government may need to implement measures to stabilize prices, including targeted fiscal and monetary policies. Diversifying and securing supply chains can help mitigate the impact of global events on inflation

In 2022-23, general inflation reached an all-time high, primarily driven by a surge in food prices sparked by the international increase in food prices. Despite this, food inflation during this period stayed below both general inflation and non-food inflation. Notably, over the past few years, there have been instances where food inflation surpassed non-food inflation, and vice versa, reflecting fluctuations in the relative rates of these two categories.

Figure-10: General, Food and Non- food Inflation



The price of various food commodities witnessed point to point a significant surge between December 31, 2022, and December 31, 2023. According to the table below, there is a notable escalation in the prices of onion (137%), garlic (112%), potato (288%), pumpkin (146%), brinjal (93%) pulses (123%).

Table 4: Price of various Food Commodities.

No.	Commodities	31-Dec-22		31-Dec-23		Wholesale Price Increase (%)
		Retail price	Wholesale price	Retail price	Wholesale price	
1	Coarse rice (Tk/kg)	44.50	42.00		44.00	4.76
2	Atta (open) (Tk/kg)	60.50	56.00		40.50	-27.68
3	Lentil (Tk/kg)	138.50	128.50		127.50	-0.78
4	Edible Oil (Tk/Liter)	167.00		154.00	147.50	
5	Sugar (imported) (Tk/kg)	102.00		134.00	130.50	31 _(retail)
6	Onion (Tk/kg)	33.00	29.50		70.00	137.29
7	Garlic (Tk/kg)	112.00	100.00		212.50	112.50
8	Zinger (Tk/kg)	140.00	125.00		160.00	28.00
9	Potato (Tk/kg)	16.00	13.50	36.00	52.50	288.89
10	Brinjal (Tk/kg)	24.50	19.50		48.00	146.15
11	Pumpkin (Tk/kg)	19.00	15.00		29.00	93.33
12	Tomato (Tk/kg)	44.00	35.00		42.50	21.43
13	Bottle gourd (Each)	43.00	34.50		48.50	40.58
14	Pulses (Tk/kg)	27.00	21.50		48.00	123.26
15	Cauliflower (Each)	23.50	18.50		32.00	72.97
16	Cabbage (Each)	29.00	23.00		27.50	19.57
17	Banana (4 pitches)	26.50	24.00		25.00	4.17
18	Egg (4 pitches)	37.50	33.50	48.00	37.80	12.84
19	Chicken (Tk/kg)	148.50	132.50		185.00	39.62

Source: DAM

The above table discloses that the prices of coarse rice saw a relatively modest increase of 4% during December 2022 to December 2023. In contrast, potato price has increased by 289%, onion

137% pulse 123%, chicken 39% during the same period. This indicates that the primary driver behind the substantial food inflation is the marked rise in prices of these other food commodities.

The agricultural wage rate advanced and achieved the target

The average agricultural wage rate for male agricultural laborers (without food) in 2019-20 was 423.58 Tk/capita/day which increased to 532.00 Tk./capita/day. The change in the average wage rate from 2019-20 was continuously increasing up to 2022-23 except a small drop in 2020-21.

The notable rise in the wage rate could be influenced by several factors, including increased demand for agricultural labor, and potentially a shortage of labor in the agricultural sector, inflationary pressures impacting the cost of living, and rapid urbanization that influences agricultural labors to sale their high-value handicrafts in urban areas.

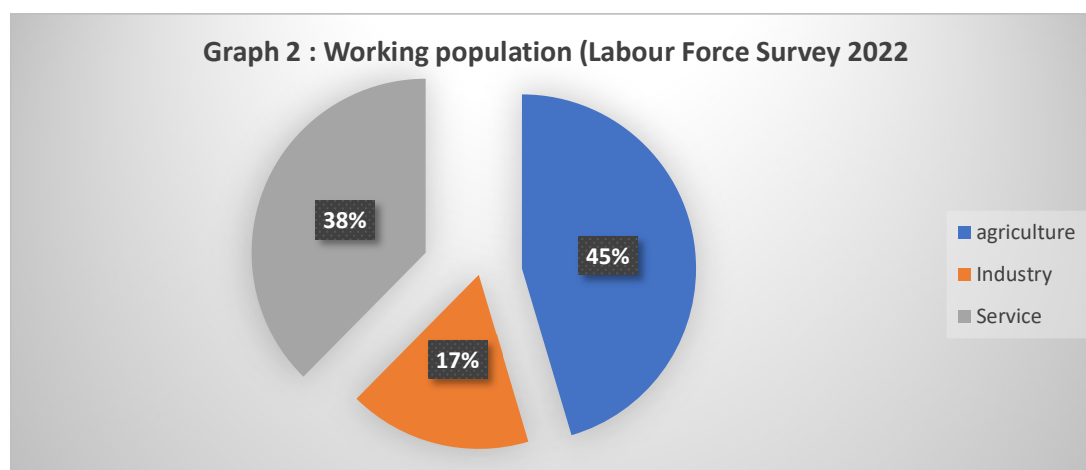
The increase in agricultural wage rates can have positive effects on the rural economy, contributing to improved living standards for those engaged in agricultural activities. However, sustained increases in wage rates could also impact the cost structure of agricultural production, potentially affecting the competitiveness of agricultural products.

Table- 5: Wage Rate Index: Economic Review 2023

Year	General	Agriculture	Industry	Service
2019-20	170.39	170.28	168.24	175.33
2020-21	180/83	181.16	177.52	185.99
2021-22	191.80	192.21	187.83	199.42
2022-23	202.68	203.03	198.60	209.40

The increase in agricultural wage rates, attributed to a shortage of labor, reflects the dynamics of the labor market in Bangladesh.

Figure-11: Working population (Labour Force Survey 2022)



This trend underscores the importance of understanding and addressing the factors influencing labour supply in the agricultural sector to ensure its sustainability and the well-being of those dependent on it.

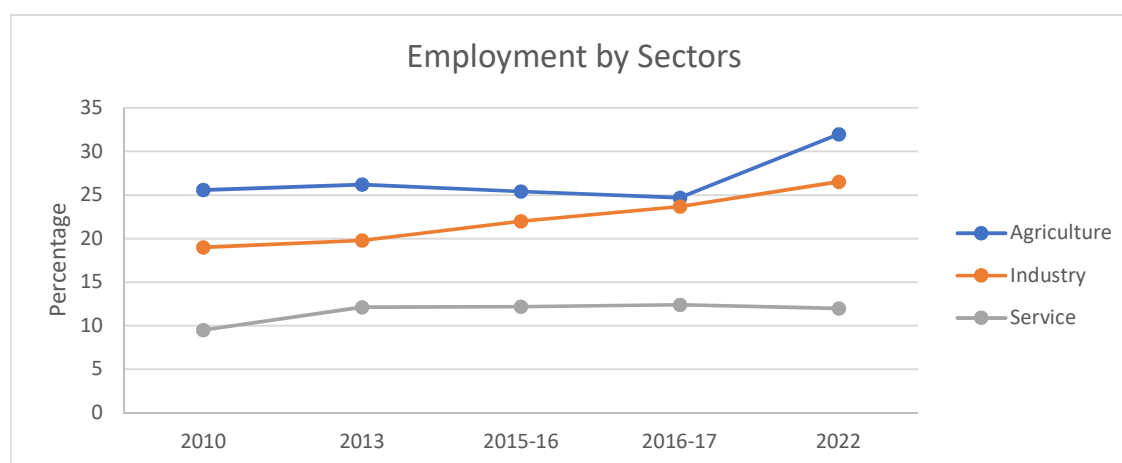
The findings from the Labour Force Survey of 2022 shed light on a notable shift in employment dynamics, particularly evident in the contrasting trends observed between the agriculture and industry sectors. While the agriculture sector has experienced a steady increase in employment, the industry sector has witnessed a decline. This divergence may be attributed to the compounded economic impact stemming from both the Covid-19 pandemic and the conflict between Ukraine and Russia.

The dual shocks of the pandemic and geopolitical tensions have reverberated through the industrial landscape, precipitating substantial layoffs and, in some cases, the closure of numerous small and medium-sized enterprises. Consequently, a significant portion of the industrial workforce has found themselves displaced, grappling with the loss of livelihoods and seeking alternative means of sustenance.

A visible consequence of this upheaval has been the migration of displaced industrial workers back to rural areas, where opportunities within the agriculture sector beckon. Faced with limited employment prospects in their former industries, many have chosen to leverage their labor in agricultural endeavors, thereby contributing to the observed uptick in agricultural employment.

This phenomenon underscores the interconnectedness of economic forces and the resilience of certain sectors in the face of adversity. While the industrial sector grapples with the fallout of external shocks, the agriculture sector emerges as a refuge for displaced workers seeking stability and opportunity. As such, understanding these dynamics becomes imperative for policymakers and stakeholders alike as they navigate the path towards economic recovery and resilience.

Figure-12: Employment by Sector



Policymakers may need to adopt a multifaceted approach to balance the needs of laborers with the overall goals of the agricultural sector; decent works or measures to enhance the attractiveness of agricultural employment, could be considered.

4.2.2 Policy challenges and recommendations for further actions

The UN Food Systems Summit (UNFSS) and Bangladesh Food Systems Transformation

The United Nations Food Systems Summit (UNFSS), held in New York City on September 23, 2021, aimed to tackle global food system challenges, including hunger, malnutrition, climate change, and sustainability. It brought together stakeholders from governments, civil society, businesses, and academia to discuss strategies for transforming food systems to be more equitable, resilient, and sustainable. Convened by UN Secretary-General António Guterres, the summit mobilized action to achieve Sustainable Development Goals related to food security, nutrition, and agriculture. Guterres called for transformative action, emphasizing the interconnectedness of food systems with global challenges and the need for concerted efforts from all sectors to build resilient, inclusive, and sustainable food systems. Key themes included ensuring access to nutritious food, shifting to sustainable consumption, boosting nature-positive production, advancing equitable livelihoods, building resilience, and strengthening governance. The UNFSS provided a platform for global collaboration and action to address complex food system challenges.

Bangladesh played a proactive role in the United Nations Food Systems Summit (UNFSS), actively engaging in discussions and initiatives aimed at reshaping global food systems. Organizing three national and six sub-national dialogues, Bangladesh brought together diverse stakeholders from government, civil society, academia, and the private sector to address challenges and opportunities in improving local food systems. With a focus on sustainable intensification, livelihood transformation, and investment in rural areas, Bangladesh prioritized initiatives to reduce food loss, ensure safe and nutritious diets for all, and combat hunger and malnutrition. During the summit, Bangladesh committed to action, engaged a wide array of stakeholders, showcased successful practices, and advocated for global cooperation to address interconnected food system challenges. Prime Minister Sheikh Hasina emphasized the importance of research, investment, and collaboration to achieve sustainable food security, urging developed countries to support developing nations in this endeavor. Bangladesh's participation underscored its commitment to building resilient and inclusive food systems for a better future.

Bangladesh reported its significant strides in implementing food systems transformation for the UNFSS+2 STM (Stocktaking Moment) held in Rome, Italy during 3-5 July 2024. Key initiatives include adopting the National Plan of Action for National Agriculture Policy 2018, the National Food and Nutrition Security Policy 2020 with its Plan of Action 2021-2030, and the 3rd Country Investment Plan (CIP3) for Sustainable, Nutrition-sensitive, and Resilient Food Systems (2021-2025). Additionally, the Mujib Climate Prosperity Plan 2021 and the National Adaptation Plan (2023-2050) have been embraced. Other notable achievements include the introduction of Biofortified Zinc Rice in public procurement, the establishment of integrated access to financial services and digital transactions under social protection, and the development of the Food Systems Dashboard (FSD) established in the Ministry of Food. Initiatives such as the Dhaka Food Agenda 2041, aimed at aligning with UNFSS commitments, highlight Bangladesh's dedication to sustainability. Moreover, the country has implemented measures to prevent illegal fishing, promote marine conservation, and ensure universal COVID vaccination, demonstrating a One Health approach. Alignment with CODEX Alimentarius food safety standards, increased social protection budget allocations, and initiatives like the Vulnerable Women Benefit and Mother Child Benefit Programmes underscore Bangladesh's commitment to social welfare. The launch of the Workforce Nutrition Alliance and the development of a document linking UNFSS commitments with other forums further illustrate Bangladesh's holistic approach to food systems transformation.

Progress has been made across key action areas aimed at transforming Bangladesh's food systems. In the realm of nourishment for all, significant steps have been taken, including the adoption of

action plans aligned with the National Food and Nutrition Security Policy 2020 and the implementation of Transfat Control Regulations and household-level Safe Food guidelines. Efforts to combat child wasting have seen the rollout of fortified rice provisions in 271 sub-districts under safety-net programs. In boosting nature-based solutions, initiatives such as aligning cropping patterns with agroecological zones, producing biofertilizers, and promoting crop diversification and rotation have been undertaken. Additionally, steps like rainwater harvesting and mangrove plantations aim to protect coastal land. Action on advancing equitable livelihoods and empowered communities, with projects like "Amar Gram Amar Shahar" being piloted to enhance infrastructure and employment generation in rural areas. In order to building resilience to vulnerabilities, with policies like the National Adaptation Plan, Mujib Climate Prosperity Plan, and CIP3 playing pivotal roles. Implementation strategies for the country's food systems transformation pathway involve integrating plans into national strategies, enhancing investment strategies, and fostering capacity development. Efforts to accelerate implementation means include increasing social safety net budgets and launching projects with World Bank support. Moreover, initiatives like the Bangladesh Food Systems Dashboard and efforts to address climate impact through research demonstrate Bangladesh's commitment to transformative action in its food systems.

Invest in conservation of nutrients during post-harvest storage, transformation and distribution

Nutrition-sensitive value chains is crucial for transforming food systems to ensure that nutritious food is accessible and available to all. This involves implementing various strategies and technologies throughout the production, processing, and distribution stages to enhance the nutritional quality and safety of food.

The nutrition-sensitive value chain in the agricultural and food sectors faces considerable challenges, notably due to inadequate infrastructure and outdated technologies leading to significant losses during harvest and postharvest stages. Establishing reliable storage facilities, crucial for preserving nutritional quality, often exceeds the financial means of individual smallholder farmers. This necessitates collaborative efforts between the public and private sectors to invest in upgrading storage infrastructure.

Various factors contribute to food waste within this value chain, including spoilage, expiration, improper handling, and suboptimal consumption practices, along with inadequate waste management. Addressing these issues is imperative to improve nutritional outcomes and ensure the efficient utilization of food resources.

Reducing Food Loss and Waste (FLW) is a critical target within the Sustainable Development Goals (SDG), particularly SDG 12.3, and is highlighted as a priority agenda in the National Food and Nutrition Security Plan (NFNSP) of 2020. To tackle FLW effectively, strategic investments are needed, guided by recommendations from both the 8th Five-Year Plan (FYP) and the NFNSP (2020).

A comprehensive National Strategy on FLW has been established, emphasizing investments in resource recovery and reuse. Additionally, Bangladesh aims to finalize a sustainable consumption and production national action plan aligned with SDG 12, target 12.1, spanning a decade.

Critical investments will include promoting mechanization, introducing affordable climate-smart technologies to reduce losses, and implementing on-site food processing and waste management

solutions. These initiatives will contribute to building a more resilient and nutrition-sensitive value chain.

Efforts to raise awareness, streamline supply chains, and encourage the consumption of locally sourced and indigenous foods will further aid in reducing FLW and enhancing nutritional outcomes.

Furthermore, ensuring reliable and sustainable access to energy, alongside the adoption of optimal food safety protocols within the private sector, and the reinforcement of regulatory frameworks for food safety, are essential components of enhancing off-farm value addition and the commercialization of food products within the nutrition-sensitive value chain.

Despite notable advancements in the agriculture sector, the transition to commercial agriculture has not gained momentum as anticipated. Many smallholder farmers lack access to credit and financial services, making it difficult for them to invest in modern farming techniques, inputs, and equipment necessary for commercialization. Climate impact with frequent natural disasters such as floods, cyclones, and droughts affecting agricultural productivity. Climate variability and extreme weather events pose significant challenges to agricultural commercialization efforts. Fluctuations in market prices, inadequate market information, and lack of market linkages can expose farmers to price volatility and uncertainty, affecting their profitability and willingness to invest in commercial agriculture. Furthermore, land degradation, pest and diseases, policy and institution constraints can impede the development of a conducive environment for agricultural commercialization. Therefore modern post-harvest storage, transformation and distribution systems are not so progressing.

However some initiatives in this area have been started. Cold Chain Bangladesh Limited (CCBL), jointly owned by Golden Harvest Ice Cream Limited and Golden Harvest Foods Limited, and co-financed by the International Finance Corporation (IFC), aims to invest in a network of temperature-controlled warehouses and logistics assets across Bangladesh. These investments are intended to establish storage facilities with controlled temperatures suitable for preserving perishable goods such as food, pharmaceuticals, and other temperature-sensitive products. The project aims to improve the efficiency and effectiveness of the country's cold chain logistics infrastructure, thereby enhancing food safety, reducing post-harvest losses, and promoting economic growth in the agriculture and healthcare sectors. Golden Harvest Agro Industries Ltd. distributes nationwide and exports to USA, Canada, Australia, Middle East and the European countries, maintaining a temperature of -18° C through its cold chain network.

2. CP Bangladesh: CP Bangladesh, a subsidiary of CP Group, offers cold chain logistics services in Bangladesh, including storage and transportation for perishable goods. Since 2010, CP Food has introduced frozen and chilled processed foods and fresh eggs in modern trade channels. Aftab, Kazi Farms, have also developed processing and marketing of livestock products. Their range includes Chicken Ball, Sausage, Nuggets, and more, available in major super stores like Swapno and Meena Bazar. CP Bangladesh rears chickens with their own feed and chicks, slaughters them at their EU-standard slaughterhouse, and serves various channels including hotels, super shops, cafes, and restaurants. Besides, some other companies as, 1. Bengal Cold Storage: Bengal Cold Storage, Agrani Cold Storage, Modern Food Storage Limited, IFAD Multi-Purpose Disaster Shelter Project, have storage facilities for various perishable goods, preserving agricultural produce during emergencies and reducing post-harvest losses.

These initiatives, along with CCBL, play a crucial role in enhancing the efficiency of Bangladesh's cold chain infrastructure, promoting food security, reducing wastage, and supporting the growth of various sectors such as agriculture, fisheries, and healthcare.

Addressing these challenges requires coordinated efforts from the government, private sector, civil society, and development partners to invest in infrastructure development, provide access to finance and technology, strengthen climate resilience, improve market access, and reform agricultural policies and institutions.

In the government sector Bangladesh Agricultural Development Corporation (BADC) has developed storage facilities. Department of Agriculture Marketing established 60 Growers Market in 60 northern districts and a central market in Gabtoly, Dhaka where farmers can sell their products at fair price. Training on crop harvest, grading, packaging, processing are continuously being provided there.

For the development of storage facilities in household level the Directorate General of Food (DG Food), under the Modern Food Storage Facilities Project (MFSP), distributed 70-litre waterproof food-grade plastic silos among 500,000 households in 63 upazilas of 19 disaster-prone districts. More over 3 lakh food grain plastic silos have been planned distribution during 'Mujib Borsho'. The project has been approved on 16/07/2020 for implementation from July 2020 to December 2021. DG food has taken 2 projects for repairing food godawns through the country. In Mohadebpur Upazilla of Naogaon district a project has been undertaken to establish a modern steel silo for rice with capacity 48,000 MT. In the eastern-western region of Dhaka, 80,000 metric tons capacity 02 new CSD construction projects have been undertaken with integrated and associated facilities. Another similar project has been undertaken for 4 new CSD in Rangpur, Kurigram, Kustia and Sylhet. Another food godown with 1.10 lakh MT capacity has been planned to establish in the northern part of the country. "Pilot projects for the construction of 30 modern paddy silos with drying, storage, and other ancillary facilities are underway in various locations across the country. Upon successful completion of these projects, steps will be taken to construct 200 rice silos all over the country. With the World Bank support, the government continues to establish large-scale rice silos in Ashuganj, Madhupur, and Mymensingh that include six on-site food-testing laboratories under the project titled 'Construction of Modern Food Storage.' Under this project 8 silos will be established where there will be 2 for wheat and 6 for rice. The duration of the project is from January/2014 to October/2023. The progress of these 3 silos is on average 84.90%. Individually progress for these 3 silos are 85.46%, 96.55% and 97.60% respectively.

Promote nutrition-sensitive value chain through quality and safety certifications

The government's introduction of the Good Agricultural Practices (GAP) policy aims to ensure the production of safe foods for both domestic consumption and international markets. This initiative is expected to enhance the competitiveness of Bangladeshi farm and processed products globally. The Hortex Foundation, a government-run entity, collaborates with farmers and private sector entrepreneurs to promote the export of agricultural products, particularly vegetables, fruits, and horticultural items. In 2022-23 a total of 0.66 million ton agricultural product were exported Asia, Europe, middle East and some other countries. Total export earnings was 84.30 crore USD (MoA Annual Report 2022-23)

The implementation of the GAP policy since 2016 is seen as a significant step towards achieving the country's goal of transforming its agriculture into good agriculture by 2025. Nomination of GAP Certificate Awarding Body “Bangladesh Agriculture Certification Body” with approval of the Technical and certification Committee.

Despite challenges like infrastructure shortages and slow progress in implementing Good Agricultural Practices (GAP), standards are crucial for safe and sustainable agricultural production. In Bangladesh, agricultural MSMEs play a vital role, employing 40% of the population and contributing significantly to the sector's turnover. Strengthening practices from harvesting to distribution is key to ensuring nutrition-sensitive value chains. Certification programs like GLOBAL G.A.P. are valuable, but they should be complemented by nutrition labelling and awareness campaigns to fetch premium prices for quality and safety.

Decent Work for the Youth and Entrepreneurship Development

Encouraging job opportunities all along the product chain and making sure young people get good work are really important for making economies better, especially in places like Bangladesh where there are a lot of young people who can work. Out of Bangladesh's 169.87 million people, about 119.39 million are workable force, which is approximately 70% of the total population, and this includes almost similar proportion of both male and female. Notably, 2.3 million young professionals enter workforce every year (BIDA).

Looking at young people aged 15 to 29, there are about 26.82 million (80%) of them, and live in rural areas where there are very limited scopes of employment beyond the agriculture sector. That's why a lot of folks end up working in farming as a last resort to make a living. This also includes, fisheries, livestock's and forestry. In this sectors there are lots of different jobs in farming that young people could do to earn money, like processing food. However, one big problem is that educated young people don't want to work in farming because they think the jobs aren't not so decent. Providing decent work for youth involves ensuring that employment opportunities are accompanied by fair wages, safe working conditions, and opportunities for skill development and career advancement. Agriculture transformation should consider these things. Encouraging entrepreneurship among youth by providing access to finance, mentorship, and business development services. Organizations such as the Bangladesh Youth Enterprise Advice and Help center (B'YEAH) provide support to young entrepreneurs, helping them start and grow their businesses.

National Association of Small and Cottage Industries of Bangladesh (NASCIB), a trade association formed to highlight MSME (Micro, Small, and Medium) and Cottage Industries issues and work for the development of the MSME sector of the country.

Small and Medium Enterprises Owners Association of Bangladesh is another private initiative promised to make the SMEs a vibrant sector for the economic development through supporting the entrepreneurs for importing and exporting of SME goods and services.

Bangladesh Investment Development Authority (BIDA), Bangladesh Small and Cottage Industries Corporation (BSCIC) National Council for Industrial Development (NCID) have been working for supporting SMEs development.

Promote financial inclusion to support the resilience of agro-food MSMEs in rural areas

Improving MSMEs' financial inclusion is a fundamental challenge at the heart of a country's financial and economic development. Access to formal finance by MSMEs in Bangladesh is limited compared to the average for the South Asia region, with an estimated financing gap of BDT 237 billion (USD 2.8 billion). As of 2018, 47% of adults were financially included mainly through microfinance institutions, mobile money accounts, banks or non-banking financial institutions. Rural users show a preference for non-banks financial institutions over banks. Informal lenders are predominant in the agro-food sector. They are mostly actors involved in these value-chains whose core business is not finance-related but who have promptly responded to a growing demand for financial products in rural areas, exploiting, information advantages, lower transaction costs, and closer proximity with rural clientele compared to the formal and institutional counterparts. A key driver of financial inclusion is achieving 'Digital Bangladesh' through mobile money and digital payment platforms in rural areas. The agro-processing sector has been declared as an important sector by the government and to facilitate that the Bangladesh Krishi Bank provides finance for seven priority sectors. Similarly, the Rajshahi Krishi Unnayan Bank (RAKUB) has also introduced a special credit programme titled *RAKUB-Small Enterprise Credit Programme (SECP)* to promote the entrepreneurship in small agro-enterprises. Several innovative and alternative financing options can be further explored, including risk-sharing facilities, factoring, warehouse receipt finance, and/or start-up capital policies. Mainstreaming rural financial inclusion is essential for resilient rural economies which are undermined by a structural lack of cash and liquidity which has been exacerbated by the COVID-19 pandemic (Box 3). To that end, SME received an initial stimulus package from GoB of BDT 20,000 crore as a credit line facility at a subsidized interest rate of 2%, which was a timely response to the COVID-19 situation.

Improve access to service, information and markets across food chains

The government is committed to using technology to eliminate poverty by ensuring digital inclusion for all, in line with Vision 2021 of a 'Digital Bangladesh' and with the a2i programme. This initiative can create an enabling environment that will improve smallholder farmers' integration into value chains and markets. In addition, the *National Agriculture Technology Programme – Phase II Project (NATP-2)* aims to improve market access by strengthening value chains. Marketing arrangements allowed marketing 8,025 MT through collaboration between the Project Implementing Unit - DAE and Hortex Foundation. The project reached more than one million beneficiaries organised in 40,514 common interest groups, which contributed to the development of micro plans subsequently aggregated into Union extension plans, as an approach to strengthen the responsiveness of extension services towards beneficiary needs. Key elements to speed up the implementation status are accelerating extension services' support for common interest groups and filling the gap between technology generation and adoption to ensure technology reaches farmers more rapidly. Also, to avoid distress crop sales by farmers, the Department of Agricultural Marketing (DAM) provided crop warehouse loans to 4,596 farmers in 2020/21. Under the USAID-funded *Agricultural Value Chain (AVC) Project*, to increase sales up to 60%, several partners such as Ispahani, Partex, and NAAFCO Pharma provided training on input management to some 39,000 lead farmers. Joikko Agro Ltd is a social enterprise with the goal of supporting farmers to improve their livelihoods by connecting them with a variety of local and international service providers -such as agronomic training, crop advisory, access to quality inputs, farm machinery rental, agri-loans - and by improving market access through crop aggregation and contract farming. Joikko works with over 10,000 farmers and its cornerstone

component is six for-profit farmer centres which provide services and facilitate contracts with national and international buyers. By growing and selling together, farmers have improved their yields and are able to negotiate better prices for their collective crops. The project's objective is to form a social franchise that holds a growing network of farmer centres to account through a standard catalogue of fee and no fee-based service provision. The government needs to support such demand-driven initiatives by making rural Bangladesh thoroughly digital, by creating an enabling business environment that appeals to the younger sections of the population, in rural areas with improved physical infrastructure and communication networks to guarantee connectivity, an essential enabler to these farmers' networks.

Reduce feed and health management costs in intensive farming

Low profit margins prevail in intensive livestock farming in Bangladesh. This can be attributed mainly to high feed costs (60-70% of total production cost) and herd health management costs. Import dependency for feed ingredients contributes to feed price hikes, and the occurrence of emerging and re-emerging diseases including transboundary diseases gives rise to important treatment costs, especially in high yielding livestock farms because of poor adaptability. Policies to pre-negotiate imports and increase the production of local feed ingredients, to develop local vaccines and medicines, and to boost disease control capacities may contribute to the transformation of existing family farms into commercial farming. In the wake of the COVID-19 pandemic, guaranteeing affordable feed will be paramount especially as many farmers will need to recover from important losses and rebuild their business. Indeed, shortages in imported feed or medical supplies such as vaccines for example or limited services from veterinaries will have set back the industry on a large scale.

Enabling the cooperative and farmer centre systems

Bangladesh Milk Producers' Cooperative Union Limited (Milk Vita) has been a successful model of dairy producer's cooperative since 1965. Further expansion of this model throughout the country has the potential to sustain the livelihood of milk producers and to boost the country's dairy production towards self-sufficiency. Alternatively, farmer centre systems could be a viable option for dairy farmers to rent a space for their cows, cold chain storage facilities, access to inputs, veterinary services, machinery, market, price information and other services. To successfully support the establishment of these models it would be essential to ensure reaching out to successful cases applied globally of farmers organisations and farmers' social networks, for instance, We Farm and Producers Direct.

4.3 Progress towards NFNSP objective 3: Improved diversity, consumption and utilisation

The objective of Outcome 3 is to improve diet quality and diversity as well as utilization through integrated short and long-term interventions for better nutrition and health. These interventions include promoting healthy diets, dietary diversity and food safety through evidence-based Nutrition Behaviour Change Communication (NBCC) and ensuring safe water, improved hygiene and sanitation (WASH) to prevent the risk of infections including food borne illness that can affect food utilisation and nutrient absorption. Outcome III comprises of two programmes namely (III.1) Enhanced nutrition knowledge, promotion of good practices and consumption of safe and nutritious diets and (III.2) Optimised food utilisation through the provision of safe water, improved food hygiene and sanitation along with six associated sub-programmes. Table-4 presents the progress towards achieving objective-3.

4.3.1 Assessment of progress towards achieving objective-3

Table 6 – NFNSP objective-3: Selected outcome level performance indicators

Outcome III: Consumption and utilization of healthy and diversified diets for achieving nutrition improvements					
Proxy indicator	Baseline 2019/20	2021/22	2022/23	Target	Verification source
% of Dietary Energy Intake (DEI) from cereals	64% (2016)		58% (2022)	60% by 2025 (NPAN2)	HIES, BBS
% of households consuming iodized salt (>15 ppm) (NPAN2)	58.5% (MICS 2019)	N/A	N/A	90% by 2025 (NPAN2)	MICS, MoHFW, BBS
% of women with minimum dietary diversity (MDD-W) (NPAN2)	46% (FSNSP 2015)	39% (2 nd National Micronutrient Survey)	N/A	75% by 2025 (NPAN2)	BBS
% of children aged 6-23 months receiving Minimum Acceptable Diet	35% BDHS 2018	28.8% (2 nd National Micronutrient Survey)	29% BDHS 2022	>40% by 2025 (NPAN2)	BDHS, BBS
% of population with safely managed drinking water services (Percentage of household members with an improved drinking water source located on premises, free of <i>E. coli</i> and available when needed) (SDG 6.1.1 and 8FYP)	47.9% (MICS 2019)	64% (DPHE)	N/A	75% by 2025 (8FYP)	MICS, BBS, DPHE

The target of dietary energy intake (DEI) from cereals was on track until 2016,

In Bangladesh, cereals and rice in particular, continue to be the main source of dietary energy, even though the proportion of cereal energy in the diet is gradually declining. The proportion of dietary energy from cereals is 64% in 2016, above to the recommended 60% target (NPAN2). As per the preliminary report of BBS-HIES-2022, the daily per capita intake of rice decreased from 367gm in 2016 to 328.9 gm in 2022 that is the right direction to reach the desirable norm of 350gm. Consumption of protein and micronutrient rich foods, including animal source foods and pulses, remained low. Animal source foods are rich in good quality protein and bioavailable micronutrients, especially iron, zinc and calcium. Even though the intake of these foods slightly increased between 2016 and 2022, it was below the desirable intake for meat, egg and milk.

Fish consumption has increased from 62.6 gm to 67.8gm while that of pulses consumption has increased to 17.1gm per capita daily, still less than a third of the desirable intake. Similarly, over the same time period, vegetable consumption increased to 201.9 gm and fruit consumption has also increased to 95.4 gm, both remaining slightly lower than the recommended intakes. In 2016, vegetable intake was only 167 gm, just above half of the recommended intake of 300gm. Similarly, in 2016, fruit intake was only 36 gm, about a third of the desirable intake of 100gm. A small gaps between actual consumption and the Desirable Dietary Pattern⁶² call for urgent attention to be given to promoting dietary guidelines for enhancing the demand for healthy food choices and diets.

⁶² Quamrun, N., Choudhury, S., Faruque, Md. O., Saliheen Sultana, S.S. & Siddiquee, M.A. (2013) *Desirable Dietary Pattern for Bangladesh*. Final Research Results. NFPCSP Research Grant Initiative. Dhaka. FAO.

Issues related to the nutrient density of foods and total diet studies need to be given the highest policy attention. The supply and affordability of nutrient-dense⁶³ foods need to be enhanced in order to bridge the nutrient gap that prevails in consumption. While data is needed to assess the changes in dietary intake that have occurred since the 2016 Household Income Expenditure Survey (HIES), it is likely that any progress made will have been reversed, at least temporarily by the COVID-19 crisis. In Bangladesh, where most families' ability to eat depends on daily wages and where 87% of employment is generated by the informal sector, access to diversified foods and healthy diets will be markedly reduced. Street vendors and food sellers, especially in urban areas, face huge losses as panic-stricken city dwellers stayed at home and foods remained unsold during the lockdown phase.

Concerning Trends in Child Nutrition: Decline in Minimum Acceptable Diet (MAD)

Recent data from the National Micronutrient Survey 2019-2020 highlights concerning trends in the Minimum Acceptable Diet (MAD), a critical indicator for assessing infant and young child feeding (IYCF) practices. According to this data, the prevalence of children aged 6-23 months meeting the MAD criteria has declined to 28.8% in 2019-2020 from 35% reported in the 2018 Bangladesh Demographic and Health Survey (BDHS).

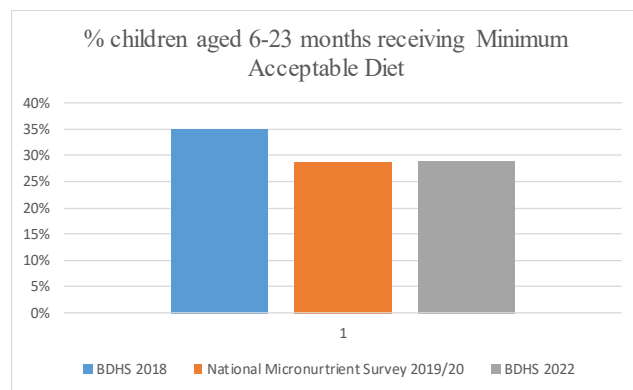
In light of the BDHS-2022 Survey findings, only 29% of children aged 6-23 months are currently receiving the Minimum Acceptable Diet (MAD). This figure falls short of the target set for 2025 under the National Plan of Action for Nutrition 2 (NPAN2), which aims for a MAD prevalence of 40%.

It's important to note that the MAD comprises two key components: Minimum Dietary Diversity (MDD) and Minimum Meal Frequency (MMF). MDD serves as a proxy indicator for nutrient density and micronutrient adequacy, while MMF indicates the energy density in a child's diet.

Analysis of the data suggests fluctuations in MDD among children aged 6-23 months from the BDHS-2018 to the National Micronutrient Survey 2019-2020. This fluctuation may be attributed to various factors, including the impact of the COVID-19 pandemic. The initial lockdown and subsequent restrictions on movement have disrupted employment and incomes, thereby reducing access to a diversified range of foods necessary for healthy diets, particularly among women and young children.

Poor IYCF practices can lead to growth retardation and micronutrient deficiencies in children, particularly when associated with low diet diversification and nutrient inadequacy in complementary feeding. To address these challenges, it is imperative to promote appropriate

Figure 13 - Trend in minimum acceptable diet for children 6-23 months (Source: BDHS and MICS)



⁶³ Nutrient density is defined as the amount of different nutrients per 100 kcal of preparation.

complementary feeding guidelines and enhance the quality, quantity, diversity, and safety of complementary foods through initiatives such as the National Nutrition Services (NNS). These efforts are crucial for improving child nutrition during the critical first 1,000 days of life.

Iodized Salt Consumption in Bangladesh Falls Short of Recommended Targets

Recent data from the Multiple Indicator Cluster Surveys (MICS) 2019 reveals concerning statistics regarding the iodization of salt in households. Adequately iodized salt, defined as fortified with potassium iodate at a concentration of at least 15 parts per million (ppm), is a crucial measure for ensuring sufficient iodine intake. However, the MICS 2019 data indicates that only 58.5% of households are consuming adequately iodized salt, falling significantly short of the target set by the National Plan of Action for Nutrition 2 (NPAN2), which aims for 90% coverage of adequately iodized salt among the population.

Bangladesh's current status in iodized salt consumption underscores a substantial gap between actual consumption rates and recommended targets. To bridge this gap, it is imperative to implement quality assurance measures at the production level and conduct routine chemical analysis in laboratories and markets to ensure iodine adequacy in salt. Additionally, nutrition messaging emphasizing appropriate cooking and storage practices of iodized salt plays a crucial role in promoting its consumption.

Minimum Dietary Diversity for Women (MDD-W) was inadequate as of the preliminary findings of Second National Micronutrient Survey 2019-20

The minimum dietary diversity for women (MDD-W) is a proxy indicator of micronutrient adequacy in their diet indicating the consumption of at least five or more out of ten food groups. The NPAN2 has a target of 75% for MDD-W by 2025. Yet, less than half (39%) of the women had a minimum dietary diversity in 2019-20. Although regular data on MDD-W are not available, nationally representative food consumption and dietary assessment in 2017-2018 showed that 53.3 % of women in the reproductive age had a MDD-W mean score of 5 out of 10 food groups.⁶⁴ These findings corroborate earlier findings of FSNP-2015 (46%) and highlight the need to accelerate the diversification of diets for women. Scaling up the use of dietary guidelines for improved food diversity is essential to achieve this objective. Diet diversity tools validated with biomarkers of intake and micronutrient adequacy⁶⁵ need to be produced through the evidence to inform policy. The use of the updated 2015 Food Composition Tables (FCT) as an essential tool for food and agricultural planning can serve to orient and set nutrient targets in food production and guide diet planning for meeting consumption requirements and nutrient needs.

Percentage of Population with safely managed drinking water services has improved

Percentage of Population with safely managed drinking water services includes percentage of household members with an improved drinking water source located on premises, free E. Coli and available when needed is an important SDG indicator i.e. SDG 6.1.1 and 8FYP. Recent MICS-2019 show that 47.9% population can managed safely drinking water services in 2019. However, there is an improvement in this indicator. From the APA report of DPHE shows that 59%

⁶⁴ INFS /MUCH FAO (2018) [Food Consumption and Dietary Assessment Survey](#). Dhaka.

⁶⁵ Nair, M.K., Augustine, L.F. & Konapur, A. (2015) [Food-Based Interventions to Modify Diet Quality and Diversity to Address Multiple Micronutrient Deficiency](#). *Front Public Health*. 3: 277.

population and 64% population can managed safely drinking water services in 2020-21 and 2021-22 respectively.

4.3.2 Policy challenges and recommendations for further actions

Improve Infant and Young Child feeding Practice

Improvement of Infant and Young Child feeding Practice is very essential for the reduction of undernutrition. Implementation of the existing Strategy on Infant and Young Child Feeding Practice is important. Research should be taken to find out the challenges or bottlenecks of the existing implementation process.

Develop and implement long-term national food planning to ensure nutritious and healthy diets

Long term planning for ensuring nutritious and healthy diets from a sustainable food system is an immediate need considering Bangladesh's population growth, demographic composition, and changes in dietary patterns induced by urbanization and income growth. This is important to estimate the gaps in availability, consumption and desirable intake and to take remedial actions through increased production, processing or trade. Food systems, especially in urban areas, are evolving to adapt to evolving food demands and transforming from traditional to modern with the increasing consumption of convenience/fast food. Desirable dietary pattern and nutrient targets should be used for diversified food planning, sensitize demand for healthy food and enhanced food supply.

Promote dietary diversity to enhance nutrient adequacy

Women during pregnancy, lactation and menstruation, and adolescent girls, who experience rapid physiological changes, require diets that are diversified, safe, adequate and rich in micronutrients. Government and non-government agencies have carried out numerous advocacy and awareness programmes on the promotion of dietary diversity. Targeted programmes must be scaled up to improve the diets of adolescent girls, pregnant and lactating women during their antenatal care (ANC) and post-natal care (PNC) sessions. The prolonged COVID-19 pandemic is likely to impact maternal and child nutrition, given the potential reduction in access to income and food, decrease in breastfeeding and possible increase in the use of breastmilk substitutes, exacerbated by COVID-19 related concerns (Box 4).⁶⁶ Higher incomes also do not automatically translate into a healthier diet. Contextual drivers that shape food systems also influence food choices, preferences and consumption behaviour. Implementation of dietary guidelines, nutrition education programmes and behaviour change communications (BCC) need to be integrated to every step of the food system including in nutrition-sensitive interventions to inform and influence food demand and promote healthy dietary behaviour and consumption.

Improve the consumption of fortified foods and its monitoring

Fortification of staple foods with essential micronutrients is a cost-effective intervention. This has been prioritised in the National Strategy on Prevention and Control of Micronutrient Deficiencies (NSPCMD 2015-2024). However, outreach, coverage and access to fortified foods by the targeted populations remain inadequate. The effectiveness of fortified rice in addressing anaemia and zinc deficiency was demonstrated among Vulnerable Group Development (VGD) beneficiaries in five districts of Bangladesh before and after 12 months of fortified rice distribution.⁶⁷ Particular attention needs to be given to identifying potential barriers to equitable access for all population

⁶⁶<https://www.who.int/news-room/commentaries/detail/breastfeeding-and-covid-19>

⁶⁷ Ara G., Khanam M., Rahman A., Ahmed T. et al (2019) [Effectiveness of micronutrient-fortified rice consumption on anaemia and zinc status among vulnerable women in Bangladesh](#). Plos ONE 14 (1): e0210501.

groups needing adequately iodine-fortified salt. Strengthening the existing monitoring system, in line with the NSPCMD, is fundamental to track the consumption of adequately fortified foods to inform policy and programmes. It is also important to regularly assess the distribution of key micronutrient deficiencies such as iodine, vitamin A and zinc across regions and population groups to inform policy update. To this purpose, a National Micronutrient Survey and a specific National Iodine Deficiency Disorders Survey are indispensable.

Strengthen National Nutrition Services delivery through community clinics

The NNS is an operational plan under the Health Population and Nutrition Sector Development Program, implemented by the Institute of Public Health and Nutrition (IPHN) and includes several programmes to control micronutrient deficiencies. NNS promotes food-based approaches through BCC to control anaemia and enhance the production of bioavailable micronutrient-rich foods to enhance diets and improve nutritional status in general. Other interventions including breastfeeding, appropriate complementary feeding, increased intake of animal food, green leafy vegetables are being encouraged. Anti-helminths are procured routinely and distributed nationwide by NNS to control worm infestation.

Lack of coordination in implementing multiple interventions using public health curative care facilities, limited preventive outreach platforms, inadequate logistics and supplies for nutrition-related services, inadequate training coverage of service providers at community clinics (i.e. Community Health Care Promoter) and poor outreach of services (i.e. Health Assistant) have been identified as the major challenges for NNS.⁶⁸ Despite the availability of ANC services at the community and outreach level, the rate of compliance to iron folic acid supplements is very low with only one-fourth of the pregnant and lactating women attending these services.

It is recommended to strengthen the implementation of ANC, PNC, growth monitoring and promotion, NNS delivery involving community clinics targeted to children and women suffering from anaemia and micronutrient deficiencies. Within the multi-sectoral nature of NNS, linkages with nutrition-sensitive interventions under the Ministry of Agriculture (MoA) and the Ministry of Fisheries and Livestock (MoFL) also need to be strengthened.

4.4 To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions

Objective IV focuses on enhancing the management of public food stocks and distribution systems, bolstering disaster preparedness, refining responses to disasters, facilitating rehabilitation and mitigation efforts, and reinforcing social protection for marginalized and vulnerable populations, such as the disabled and displaced. Objective IV is in harmony with the 7 programs outlined in Pillar-4 of CIP-3. These programs primarily concentrate on the effective upkeep of public food stocks and distribution systems, heightened resilience of agricultural systems, facilitation and coordination during both pre and post-disaster periods, fortification of social protection in disadvantaged regions and groups. There is also a specific emphasis on nutrition sensitivity, addressing seasonal crises, fostering income generation, and promoting the development of agriculture and micro-entrepreneurship.

⁶⁸ Shaha K.K., Billah M., Menon P., Arefin, S.E. & Mbuya, N.V.N. (2015) [Bangladesh National Nutrition Services: assessment of improvement status](#). World Bank Technical Report.

4.4.1 Assessment of progress towards achieving objective-4

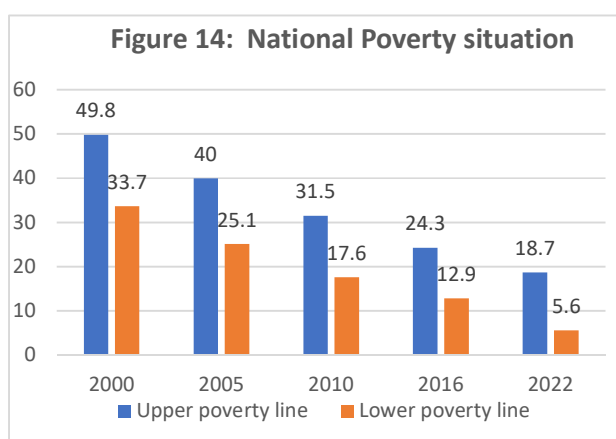
Table 7: NFNSP objective-4: Selected outcome level performance indicators

CIP2 outcome proxy indicators	2016/17 SDG Baseline	2019/20 Baseline	2021/22	2022/23	Target	Source
Proportion of population living below national poverty line (SDG 1.2.1)	24.3% (2016)	20.5* % (2018/19)		18.7% (2022)	8FYP: National: 15.6% by 2025 SDG:7.2 by 2030 ●	HIES reports, BBS, GED
Proportion of population under national extreme poverty line	12.9% (2016)	10.5*% (2018/19)		5.6% (2022)	8FYP National: 7.4% by 2025 SDG:2.55 by 2030 ●	HIES reports, BBS, GED
Safety net programmes budget (excluding gov. Pensions) as % of GDP	2.09%	2.10%	2.22%	2.15 %	8FYP: 2% of GDP by 2025 ●	MoF/ GED

*: estimated: The colour indicator shows the progress achieved: target reached ● ; on track ● ; off track ●

Addressing Poverty and Promoting Sustainable Development in Bangladesh is on-track

Poverty is a crucial indicator in SDGs due to its impact on well-being, inequality, economic growth, health, education, environmental sustainability, and the global development agenda. It reflects broader issues and is essential for building inclusive, equitable, and sustainable societies. Sustainable Development Goal-1 (SDG), which aims to "End Poverty in all its forms, everywhere." The Bangladesh Bureau of Statistics (BBS) has reported a national decline in the upper poverty lines, from 24.3% in 2016 to 18.7% in 2022, according to



the Household Income and Expenditure Survey (HIES-2022), employing the Head Count Rate (HCR) method which is a vital measure used to estimate the percentage of individuals living below the poverty line. The Household Income and Expenditure Survey (HIES) data for 2022 reveals upper poverty lines of 20.5% in rural areas and 14.7% in urban areas, indicating a downward trend compared to the figures reported in the 2016 survey. Furthermore, the HIES 2022 indicates an overall extreme poverty rate of 5.6% for the country, with 6.5% in rural areas and 3.8% in urban areas. These statistics underscore a positive trajectory towards poverty reduction, albeit with disparities between rural and urban regions. From 2000 to 2022, there has been an average annual reduction rate of approximately 1.37% for the upper poverty lines and 1.3% for the lower poverty lines. This indicates a consistent and gradual decrease in poverty levels over the specified period. Between 2016 and 2022, the annual average decline rates for both upper and lower poverty lines were lower compared to the trend observed from 2000 onwards. This suggests a slowdown in the pace of poverty reduction during the specified period, indicating potential challenges or shifts in socioeconomic dynamics impacting poverty alleviation efforts. Between 2000 and 2022, the upper poverty lines and lower poverty lines in rural areas experienced a notable decline, decreasing by 31.8% and 33% respectively. This indicates substantial progress in poverty alleviation efforts within rural communities over the specified period. Despite a slower rate of decline post-2010, Bangladesh remains on track to achieve Sustainable Development Goal (SDG) 1 Target 1.2.1, aiming to halve the proportion of men, women, and children living in poverty by 2030.

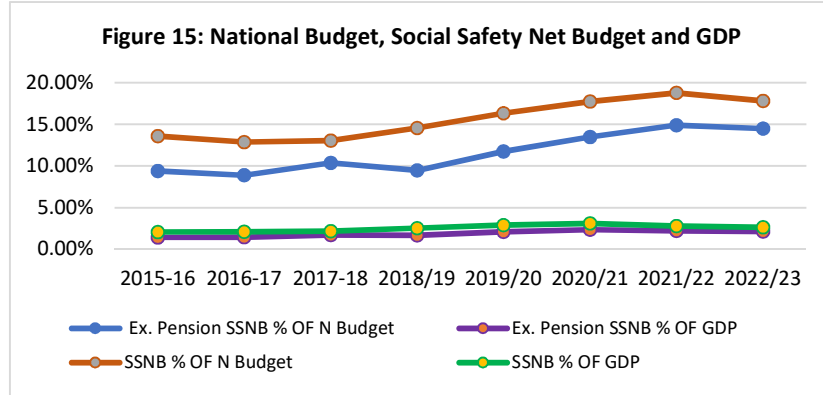
Bangladesh has made notable strides in expanding social safety net coverage. Social safety net coverage in Bangladesh is critical for poverty alleviation, inequality reduction, human capital development, resilience building, and social stability. By providing targeted assistance, essential resources, and services, social safety nets help improve living standards and promote inclusive socio-economic development, ensuring the well-being of vulnerable populations. The proportion of population covered by social protections is one of indicator of SDG (1.3.1). The coverage of beneficiaries in social safety net programs in Bangladesh exhibited remarkable progress, increasing from 28.7% in 2016 to 50% in 2022, as reported by the Household Income and Expenditure Survey (HIES) in 2022. Specifically, the rural area saw a substantial rise to 59.1% from 35.7%, while the urban area experienced a modest increase to 30.7% from 10.9% during the same period. Conversely, there was a substantial increase in the coverage of beneficiaries at the household level within social safety net programs, rising to 37.6% in 2022 from 27.8% in 2016. This increase underscores notable progress in ensuring social protection for households across Bangladesh. Particularly noteworthy is the significant escalation observed in rural areas, where coverage surged to 44% from 34.5%, indicating improved access to social safety nets among rural households. In contrast, while urban areas experienced a more modest increase, with coverage rising to 23.9% from 10.6% over the same period, this still signifies progress in extending social safety net benefits to urban households.

Bangladesh has made remarkable progress in recent decades, evident in its economic growth, poverty reduction, and advancements in food and nutrition security (FNS). However, the country faces persistent challenges, including its large population and high density, environmental degradation, climate change, and the escalating frequency of natural disasters. Additionally, rapid rural-to-urban migration has led to a concentration of poverty and malnutrition in urban slums, exacerbating social inequalities. The compounding issue of the "triple burden of malnutrition" further complicates efforts to address nutritional needs effectively. Furthermore, the post-COVID-19 impact, coupled with global economic crises and price shocks, present additional hurdles for Bangladesh to overcome on its path to sustainable development.

However, the onset of the COVID-19 pandemic in 2020 disrupted this trajectory, resulting in a significant increase in the depth of poverty among those already vulnerable. While many were anticipated to rebound with the resumption of economic activities, some individuals faced prolonged poverty due to factors such as the sale of productive assets, accruing unmanageable debts, and encountering difficulties in accessing migrant work opportunities. In response to the post-COVID-19 impact, the government swiftly implemented numerous measures aimed at alleviating poverty, thus contributing to the observed decline. Recognizing the multifaceted challenges, the government has accorded top priority to ensuring food and nutrition security, alongside implementing employment generation programs, as part of its broader strategy for poverty alleviation. These initiatives underscore a holistic approach towards addressing the complex interplay of factors contributing to poverty in Bangladesh

Despite an increased budget allocation for safety net programs, its proportion relative to total GDP has slightly decreased..

The current fiscal year has witnessed a commendable 5.5% increase in the government's allocation to the Social Safety Nets Budget (SSNB) compared to the previous fiscal year's revised budget. At the same time excluding government pensions SafetyNet programs budget has increased 8.1%. But, the exclusion of government pensions resulted in a slight downturn in overall government spending on safety nets, settling



at 2.15% of GDP in 2022/23, a marginal decrease from 2.22% in the preceding year. Nevertheless, the nation prides itself on an extensive array of social safety net programs crucial for supporting individuals grappling with economic challenges. These programs constitute a significant portion of the government budget, underscoring their indispensable role in societal well-being. Despite minor fluctuations, the safety net budget has consistently demonstrated growth. In 2019/20, it accounted for 16.32% of the total budget, escalating to 17.81% by 2022/23, albeit slightly lower than the preceding year's 18.78%. The government meticulously categorizes safety net spending into social empowerment and social protection. Social empowerment initiatives prioritize human development and livelihood improvement, aiding vulnerable communities. Conversely, social protection mechanisms encompass transfers and safeguards, incorporating expenses like civil servant pensions and benefits for groups such as Freedom Fighters. While not directly targeting poverty alleviation, these allocations remain pivotal in providing essential support and acknowledgment to specific societal segments. In essence, the government's commitment to the Social Safety Nets Budget underscores its dedication to mitigating socio-economic challenges and enhancing citizen well-being. Despite nuanced fluctuations and exclusions, the importance of these programs in fostering inclusive growth and societal resilience remains paramount.

4.4.2 Policy challenges and recommendations for further actions

Empowering vulnerable Communities through Employment Generation Program

An employment generation program for food security aims to address the intertwined challenges of unemployment and food insecurity by creating job opportunities within the agricultural sector. By providing employment opportunities in farming, food processing, distribution, and related industries, this program not only ensures a stable income for participants but also contributes to the production and accessibility of nutritious food. Through training initiatives and capacity-building efforts, individuals are equipped with the skills and knowledge needed to engage in agricultural activities effectively. Additionally, the program may incorporate support mechanisms such as access to land, inputs, and market linkages, enabling participants to sustainably produce food for themselves and their communities. By prioritizing employment generation in the food sector, this program not only enhances livelihoods but also strengthens food security at both the household and national levels.

Expansion of open market sale of essential food commodity as a positive response

In Bangladesh, where price hikes and economic volatility are prevalent, the open market sale (OMS) of food grain emerges as a vital tool. Its significance lies in its ability to stabilize food prices, making essential food items affordable, especially for low-income segments. The country often grapples with natural disasters, seasonal price fluctuations, and economic shocks. These challenges exacerbate food availability shortages in disaster-prone areas and lead to sudden spikes in prices, particularly as a consequence of the post-COVID impact and global crises. OMS steps in to mitigate these impacts by providing subsidized food grains through authorized channels. Beyond immediate affordability, this program plays a pivotal role in broader social security initiatives, shielding vulnerable communities from the repercussions of food insecurity and economic instability. In the fiscal year 2022-23, both general inflation and food inflation stood at 9.02% and 8.71%, respectively, marking a notable increase compared to recent years. Particularly alarming were the price hikes in main staple food items such as coarse rice and wheat flour (atta), which surged by 9.06% and 64.28%, respectively. Furthermore, the prices of other essential food items also witnessed significant upticks. Given this concerning scenario, the expansion of the Open Market Sale (OMS) program for essential food grains emerges as a crucial response to ensure continued access to food for all segments of the population. The ongoing program should be scaled up.

Aligning PFDS with National Social Security Strategy (NSSS) Priorities and Evolving Social Safety Net Program Approaches

To align the Public Food Distribution System (PFDS) with the National Social Security Strategy (NSSS), adjustments will be made to ensure coherence with the overarching objectives of the NSSS. The NSSS outlines the government's vision for enhancing social safety net programs to address evolving socio-economic challenges effectively. Recognizing the need for flexibility and adaptability in responding to changing circumstances, the PFDS will undergo a process of adaptation and refinement. This alignment process will involve a thorough review of the current structure and functioning of the PFDS to identify areas where improvements can be made to better align with the NSSS priorities. One key consideration will be the potential transition towards cash-based assistance programs within the PFDS framework. Cash-based assistance offers several advantages, including greater flexibility for beneficiaries to purchase food items according to their preferences and dietary needs, as well as reduced administrative costs associated with food procurement and distribution. However, any transition towards cash-based assistance will be gradual and carefully managed to minimize disruptions and ensure that vulnerable populations continue to receive essential support. Comprehensive assessments will be conducted to evaluate the feasibility and implications of such a transition, taking into account factors such as accessibility to financial services, market dynamics, and the nutritional needs of beneficiaries. Additionally, efforts will be made to enhance the efficiency and effectiveness of the PFDS through the adoption of innovative approaches and technologies. This may include the introduction of digital payment systems, targeted interventions based on data analytics, and improved monitoring and evaluation mechanisms to track the impact of the program. Overall, aligning the PFDS with the NSSS priorities represents a strategic shift towards a more adaptive and responsive social safety net system. By incorporating cash-based assistance and leveraging technological advancements, the PFDS will be better positioned to address the evolving needs of vulnerable populations and contribute to the overarching goals of poverty reduction and social inclusion outlined in the NSSS.

Prioritizing Social Safety Nets for Disaster-Vulnerable Communities

Ensuring a social safety net for disaster-vulnerable communities is imperative to mitigate the devastating impacts of natural disasters and uphold the well-being of affected populations. These safety nets encompass a spectrum of measures, spanning pre-disaster preparedness, immediate crisis response, and long-term recovery and resilience-building efforts. Pre-disaster measures, such as early warning systems, evacuation plans, and community-based disaster preparedness training, empower vulnerable groups to effectively respond to emergencies. During disasters, essential support such as emergency shelters, food aid, medical assistance, and psychological counselling is provided to those affected. Post-disaster recovery efforts focus on infrastructure rebuilding, livelihood restoration, and addressing long-term vulnerabilities to minimize the risk of future disasters. Inclusive social safety nets prioritize the needs of vulnerable demographics, including women, children, elderly individuals, and persons with disabilities, ensuring equitable access to resources and support services. In Bangladesh, the densely populated coastal region and frequent exposure to cyclones, floods, and erosion render millions susceptible to displacement, livelihood loss, and food insecurity. Rural communities, particularly in low-lying areas and char lands, endure disproportionate impacts compounded by poverty, inadequate infrastructure, and limited resources. Moreover, urban slum dwellers face heightened vulnerability due to overcrowded living conditions and lack of basic services. Vulnerable groups are at heightened risk during disasters, experiencing elevated levels of displacement, loss, and trauma. Addressing the needs of disaster-vulnerable populations in Bangladesh necessitates comprehensive approaches focusing on risk reduction, resilience-building, and inclusive strategies tailored to the unique challenges faced by different communities.

Expand the f Nutrition-Sensitive Social Protection to address Malnutrition

Nutrition-sensitive social protection programs are essential for addressing the complex interplay between poverty, food insecurity, and malnutrition among vulnerable populations. These initiatives integrate nutrition objectives into existing social protection mechanisms, aiming to improve the nutritional status and well-being of individuals and communities. By combining cash transfers, food assistance, and nutrition education, these programs ensure access to nutritious foods while promoting healthy eating practices and dietary diversity. Additionally, they may include interventions such as breastfeeding support, micronutrient supplementation, and nutrition counselling for pregnant women and young children. Furthermore, nutrition-sensitive social protection initiatives often target specific vulnerable groups, including pregnant and lactating women, infants, and children under five, who are particularly susceptible to malnutrition. By addressing the underlying determinants of poor nutrition, such as poverty, inadequate healthcare, and limited access to nutritious foods, these programs contribute to breaking the cycle of malnutrition and promoting long-term health and development outcomes among vulnerable populations. Overall, nutrition-sensitive social protection plays a critical role in ensuring the holistic well-being of vulnerable individuals and communities by addressing both immediate food needs and underlying nutritional deficiencies.

4.5 Progress towards NFNSP objective 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation

This objectives aim to improve food safety through the implementing all kinds of good, manufacturing and hygiene practices at all stages of the food supply chain complemented by create awareness, measures and monitoring to ensure that foods are safe and nutritious to be consumed.

Reduced food loss and waste, improved information and data for evidence-based monitoring and adjustment of policies, strengthened Food and Nutrition Security (FNS) governance, capacity development and leadership across FNS, strengthened regulatory management, climate resilient and gender roles. This objective 5 also covered 5 programme of pillar-5 under CIP-3 which are mainly focused on generation, dissemination and access to reliable and timely FNS data and information including big data, operationalization of the implementation of NFNSP, its Plan of Action and CIP and integration with other FNS development efforts, effective regulatory instruments and guidelines, strengthened policy uptake, nutrition leadership and institutional capacity at national and sub-national level of government, and strengthened FNS governance through enhanced participation of private sector and other non-state actors.

4.5.1 Assessment of progress towards achieving objective-5

Table 8 - NFNSP objective-5: Selected outcome level performance indicators

NFNSP & CIP3 output proxy indicators	2019/20 Baseline		2020/21		2021/22		2022/23		Target	Source
Number of annual high level FNS policy reports produced (e.g. NFNSP Monitoring Report, NPAN 2 Monitoring Report, SUN Annual Report)	2		3		3		3		At least 2 per year	FPMU
Number of certified foods/food products as per mandatory standards by BSTI	72		80		88		94		Increase	BSTI
Food Waste and Loss Index	-		Data not yet created. No national FLW survey planned yet. FLW strategy needed.		-		-		Decline	MoFo-od, BBS
Allocation for climate resilience and gender mainstreaming across ministries- a) MoA b) MoFL c) MoFood d) MoWCA e) Health Services Division	Gender a) 44.91 % b) 43.1 % c) 3.36 % d) 76.36 % e) 29.31 %	Climate a) 37.9% b) 27.42% c) 3.3% d) 4.9% e) 2.27%	Gender a) 41.46 % b) 13.1 % c) 0.8 % d) 69.93 % e) 10.7 %	Climate a) 37.1% b) 30.5% c) 2.9% d) 12.9% e) 2.7%	Gender a) 46.5 % b) 17.0 % c) 4.7 % d) 67.3 % e) 29.2 %	Climate a) 37.2% b) 33.54% c) 2.76 % d) 12.85% e) 2.71 %	Gender a) 51.6 % b) 45.4 % c) 11.4 % d) 69.0 % e) 24.1 %	Climate a) 37.44% b) 30.23% c) 2.5 % d) 12.56% e) 2.07 %	Increase	Climate and Gender Budget, MoF
Number of meetings of the LCGs on FNS (a) ARDFS b) DER and c) Health)	a) ARDFS-2 b) DER-2 c) Health-2		a) ARDFS-2 b) DER-2 c) Health-2		a) ARDFS-2 b) DER-2 c) Health-2		a) ARDFS-2 b) DER-2 c) Health-2		At least 3 per year for each relevant LCG	FPMU

The colour indicator shows the progress achieved: target reached ; on track ; off track .

Number of annual high level FNS policy produced

Inter-ministerial five Thematic Teams (TTs) - one for each CIP3 Pillar- continued to be a platform for FNS policy discussion and essential data gathering, validating, analysis and policy suggestions thereby supporting the NFNSP-PoA and CIP3 monitoring process and the drafting Monitoring

Report 2024. These teams have continued to meet regularly in 2022/23, providing technical and operational supports towards the production of the MR 2024. As in 2022/23, the target number of interactions through TT meetings and workshops was achieved.

The CIP3 results framework, with a total of 109 indicators at goal, outcome and output levels, brings together a prosperity of information on the country's FNS status and progress towards SDGs that relies on spirited efforts by FPMU and the TTs to obtain yearly Government official data and information to monitor the evolution compared to baseline and previous years. The CIP3 and NFPCSP-PoA monitoring process and methodology are now being effectively replicated and followed in the Bangladesh National Nutrition Council (BNNC) for monitoring the NPAN2 report, demonstrating a good example of cross-fertilisation of policy monitoring practices in the country. Policy challenges and recommendations for further actions.

The number certified foods/food Products standardized by BSTI under compulsory certification increasing

In fiscal year 2022/23, the mandatory food/foods under compulsory certification is 94, which was 88 in fiscal year 2021/22. Product standard setting, inspection and testing facilities are the basic requirements for certification of food products, and this is BSTI's mandatory responsibility. BSTI is also involved in market surveillance activities to ensure the quality and safety of BSTI's certified products.

Recent information on food loss and waste is not yet available in Bangladesh

Recent information on FLW is not yet available in Bangladesh. Although levels of postharvest losses of specific food commodities have been estimated over the years, there are no recent nationally representative data generated through an approved or widely recognized methodology on the magnitude of FLW in Bangladesh. FAO (2019)⁶⁹ recorded all FLW estimates for Bangladesh from grey literature to national and sectoral reports between 2000 and 2017. It identified 89 studies: the average FLW rate was 7.4% with a wide variation from a minimum of 0.5% to 35%. Such range provides little guidance as to what a realistic figure might be.

More recently, an IFPRI study under the MFSP assessing current grain losses showed a storage loss of less than 1% during the 12-month period, which meets the standard set by the government. However, this study only considered storage losses and did not cover other sources of losses in the rice supply chain. Champions 12.3 (2017)⁷⁰ have shown that in South Asia, food losses are mostly prevalent near production, handling and storage, and less at the consumption level. The estimated share of total food that is lost or wasted is 17% in the region compared to 42% in North America and Oceania. While the focus should, therefore, be on the lower end of the value chain, as value chains transform, waste associated with consumption and distribution will likely increase.

Budget allocation for climate resilience and gender mainstreaming across ministries is increasing

The budget allocation for climate resilience and gender across the Ministry of Agriculture (MoA), the ministry of Fisheries and livestock (MoFL), the Ministry of Food (MoFood), the ministry of Women and Children affairs (MoWCA), and Health Services Division (HSD, MoHFW) is

⁶⁹ FAO (2019) [The State of Food and Agriculture 2019. Moving forward on food loss and waste reduction](#). Rome.

⁷⁰ Champions 12.3 (2017) [SDG Target 12.3 on food loss and waste: 2017 Progress Report](#). An annual update on behalf of Champions 12.3.

increasing in trend. In base line year 2019/20 the budget of those Ministries follows in case of gender by 44.91%, 43.1%, 3.36%, 76.36% and 29.31% and in climate budget was 37.9%, 27.42%, 3.3%, 4.9% and 2.27% accordingly. In 2022-23 fiscal year, the allocation of gender budget are 51.6%, 45.4%, 11.4%, 69.0% and 24.1% and climate resilience budget are 37.44%, 30.23%, 2.5%, 12.56% and 2.074% accordingly. The current government emphasis on climate and gender mainstreaming for the development of the country.

Number of meeting of the LCGs on FNS (ARDFS, DER and Health) is increasing in Trend

The LCGs exist to foster coordination between Development Partners (DPs) and the Government. To ensure a stronger and wider participation in the LCG on ARDFS, the LCG on DER, and the Health and Nutrition Consortium which is a health related LCG. Wider and more active participation in the LCGs by the civil society and private sector will be sought. In fiscal year 2020/21, there are eight (8) meetings held on LCGs on FNS. This means that there is a strong coordination and collaboration between the government and the development partners. Both the parties agrees on the development of FNS sector. In 2022/23 fiscal year, LCG on ARDFS held two meetings, LCG on DER held two meeting and LCG on Health held two meetings.

4.5.2 Needs for further actions under this objective and Programme Harmonise laws, rules, regulations and standards, agree on a common strategy and define roles

Harmonisation of the many laws, rules, regulations and standards across ministries will improve the food safety framework in the country. Indeed, overlapping of regulatory bodies and lack of coordination among ministries creates a haphazard and confusing situation, diminishing the goal of food safety⁷¹. Eighteen ministries are involved in food safety and quality control, while ten ministries are directly involved in food inspection and enforcement⁷². The role of the BFSA which collaborates with government agencies such as the BSTI in the MoInd, MoF, Plant Quarantine Wing, DAE, MoA and Bangladesh Small and Cottage Industries Corporation (BSCIC) to harmonise food safety standards in compliance with WTO requirements must also be better defined. Harmonising standards will improve the government's role in food safety oversight. The BFSA Technical Committee will need to determine the food safety and nutrition standards and elaborate steps in improving coordination between ministries to implement a food safety strategy with clearly defined roles and responsibilities of different agencies/ministries. The food safety strategy developed by BFSA is expected to serve the purpose. Further, an assessment of resources and needs, ahead of the development of action plans will be conducted. Guidelines for the implementation of quarantine and import policy orders to ensure the safety of imported foods are also required. Legal provision of up to life-term imprisonment against the offense of adulterating food and medicinal products will be introduced.

Develop/introduce clear and implementable guidelines for food safety inspections

BFSA needs to develop strict guidelines/SoPs for food safety inspections and ensure strict compliance of the food inspection guidelines and manuals. Port teams should be trained to sample and then send the samples for testing in accredited laboratories which should ideally be located at the ports. The guidelines should include all the elements of inspection and certification systems

⁷¹ USDA. 2019. [Bangladesh Food and Agricultural Import Regulations and Standards Report FAIRS Annual Country Report](#).

GAIN Report Number: BG 1812

⁷² *Ibid*.

for the food production, processing, preparation, marketing and imported foods. Legislation should clearly establish the authorities required to implement control over non-compliant food (both local and imported). These include the power to suspend or revoke authorizations, to seize and detain non-compliant products, to destroy non-compliant food, to levy administrative fines or penalties, to prosecute and seek court-imposed penalties.

Strengthen existing capacities and build new technologies for food safety

Comprehensive analyst training programmes are required along with the introduction of standardized methods of analysis and the application of standardized laboratory quality assurance program. With the increased demand of food safety, Bangladesh Agricultural University (BAU) has launched a degree of Food Safety Management Systems (FSMS). The concerned authority needs to utilise the undergraduates as future food analysts and inspectors. The current manpower should be provided with a refresher training and efforts should be made to recruit more skilled manpower. An expanded network of duly accredited laboratories for food safety will be developed and services expanded. BSTI's capacities also need to be enhanced.

Strengthen the capacity of the Bangladesh Accreditation Board

The capacity of BAB to accredit inspection and certification bodies based on international standards (ISO 17020 and ISO 1702) must be strengthened, including by supporting its application for membership to the International Accreditation Forum. Its ability to accredit independent, third party inspection and certification systems will be promoted to help expand the certification and inspection ecosystem in Bangladesh beyond government-owned institutions.

5. Progress towards outputs for NFNSP objectives and CIP3 pillars

5.1 Progress towards outputs for NFNSP objective-1 and CIP3 pillar-1

Under this objective there are two strategies. These strategies mainly focus on nutrition sensitive, diversified, climate resilient agricultural production. This objective also covered the 7 programme of CIP3. These programme addressed the investment area on agricultural research and development, diversified and sustainable agricultural production and efficient use of puts.

5.1.1 Strategy 1.1 Increase productivity while ensuring sustainable production of cereals and nutritious foods including horticulture, fisheries and livestock

This strategy consists of 9 AoIs of NFNSP-PoA namely 1.1.1 Develop improved climate-smart technology for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient content, 1.1.2 Disseminate improved technologies and practices at farmer and farm level through effective and participatory extension services, 1.1.3 Expand and promote the use of water-efficient and environmentally friendly alternative irrigation technologies, including surface irrigation, 1.1.4 Improve timely access to credit including micro-scale producers through suitable institutional reforms, 1.1.5 Improve input use efficiency for productivity gains, sustainability, and health and environmental protection, 1.1.6. Promote the production of quality feed and fodder through appropriate support to feed and fodder industries for fisheries and livestock, 1.1.7. Stimulate the blue economy by promoting the sustainable development of marine fisheries and aquaculture in coordination with other non-agricultural uses and the private sector, 1.1.8. Develop and promote eco-friendly and responsible practices for animal health along the

principles of “One Health”, 1.1.9. Strengthen the role of POs and cooperatives to reduce the cost of production, improve market access, and increasing the prices received by producers.

It also covers 5 programmes of CIP3 namely Programme I.1. R&D and improved technology for more productive nutrient-rich and sustainable agriculture in rural and urban areas I.2. Gender, climate and nutrition sensitive extension services I.3 Efficient and environmentally friendly irrigation technology I.4. Improved efficiency of agricultural inputs I.5. Enhanced role of POs and cooperatives.

5.1.1. (a) Progress towards achievements

Table 9- Progress towards achievement Strategy 1.1 and CIP-3 programs (I.1-I.5)

CIP3 output indicator	proxy	Commodity / Item	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Number of improved new varieties		Rice	13	10	4	3	BARI, BINA,MoA
		Wheat	3	5	0	0	
		Maize	2	1	1	3	
		Potato	10	1	8	1	
		Pulses	1	2	1	1	
		Vegetables	10	6	1	3	
		Edible Oilseeds	2	2	2	1	
		Fruits	2	3	3	5	
		Spices	2	4	1	0	
		Jute	2	1	1	2	
		Sugarcane	1	1	0	0	
Annual change major production	in crops'	Rice	0.2%	2.7%	1.2%	2.8%	BBS (Statistical Yearbook
		Wheat	1.2%	5.4%	-0.2%	8.1%	
		Maize	12.5%	2.5%	3.5%	7.1%	
		Potato	-0.5%	2.9%	2.6%	2.8%	
		Pulses	1.3%	6.8%	1.8%	1.5%	
		Brinjal	5.1%	5.2%	5.4%	10.1%	
		Pumpkin	6.2%	4.7%	5.1%	2.4%	
		Beans	18.1%	00	0.0	34.1%	
		Lal Shak	-9.0%	6.6%	11.9%	-3.7%	
		Edible Oilseeds	7.3%	5.7%	4.7%	23.7%	
		Banana	-1.8%	1.0%	0.0	5.4%	
		Guava	-4.6%	8.0%	0.4%	4.6%	
		Mango	0.2%	-0.6%	-0.6%	22.8%	
		Pineapple	0.0%	-4.6%	-0.9%	-4.4%	
		Jackfruit	-3.5%	9.5%	-4.3%	1.2%	

CIP3 output proxy	Commodity / Item	2019/20 Baseline	2020/21	2021/22	2022/23	Source
0000ors	Coconut	-4.6%	-2.2%	2.3%	10.9%	
	Papaya	-3.8%	-3.8%	17.2%	-1.6%	
	Tomatoes	7.2%	7.7%	-1.3%	6.0%	
	Carrots	10.5%	33.3%	11.3%	12.4%	
	Lemon	3.5%	39.0%	16.4%	3.8%	
	Sweet potato	4.2%	13.8%	8.5%	-1.9%	
Number of new improved breeds released for livestock and fish	Livestock	1	0	0	1	MoFL , BLRI,DLS,DoFish
	Fish	3	5	10	4	
Number of artificial insemination of cattle (Lakh)		44.41	43.81	42.34	42.45	DLS, MoFL
Area under bio fortified crops (hac)		2054	3255	4196	5037	DAE
Area of land under organic farming under DAE initiative (hectare)		30425	40320	48930	61209	DAE
Number of farmers trained on sustainable agriculture practices	DAE	Male	1378750	1106252	1170252	DAE, MoA
		Female	326250	207269	232198	
	DLS		169,000	220,000	35560	DLS, MoFL
	DoF		221,000	132,554	287000	DoF, MoFL
Number female extension workers as % of extension workers	Male		87	84	80	DAE
	Female		13	16	20	DAE
Annual change in improved rice, wheat and maize seeds production		-2.5%	29.2%	-9.2%	17%	MoA
Production of rice seeds tolerant (MT)	Drought		5,210	23,451	26547	MoA APA Indicator 2.5
	Submergence		18,309	9,457	11230	
	Salinity		7,250	6,213	7521	
Annual Increased in arable land under surface irrigation coverage (thousand ha) ⁷³		30.05	35.42	37.54	39.21	MoA
Diesel pumps as % of all pumps		70%	71%	72%	74%	DAE,MoA
Agricultural credit disbursement in billion BDT		227.5	255.11	259.66	328.3	Bangladesh Bank
Number of formal banks providing direct agricultural credit services		54	55	56	58	BB/Krishi Bank
Proportion of loans for marginalized farmers		71.43%	69.15%	69.99%	68.24%	BB/Krishi Bank
Number of “Krishok Credit Card” provided	Male		17975490	17980520	18025379	DD DAE, MoA
	Female		2164641	2182502	2299120	
Urea		98.4%	91.8%	96%	96%	MoA
MoP		95.3%	91.6%	90%	99%	

⁷³ The figures are recalculated as: surface water irrigation land in a year minus that of previous year, based on data obtained from BADC.

CIP3 output proxy indicators	Commodity / Item	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Supply of fertilizers as % of estimated demand ⁷⁴	TSP	98.1%	95.6%	97%	96%	
	DAP	106.6%	101.9%	99%	99%	
Of the 30 Agro Ecological Zones (AEZs), n. of AEZs with "very low or low" (BARC) status for: 2018 Data Ex	a) organic content	25	27	28	27	BARC
	b) Nitrogen (N)	19	16	15	15	
	c) Phosphorous (P)	28	28	26	27	
	d) Potassium (K)	29	29	28	28	
Number of feed producers registered by the MoFL	Livestock	250	278	290	315	DLS, Dofish
	Fisheries	---	1,164	243	252	
Number of commercial registered farm	Poultry	84,735	84829	86485	88006	MoFL, BBS
	Livestock	74,493	74801	78684	82522	MoFL, BBS
	Fish and shrimp	248,651	206399	2,08,000	207000	MoFL, BBS
Number of samples of fish feed tested for quality assurance		1,125	1,164	1,240	1024	MoFL
Number of doses of vaccines produced (million)		277.48	311.60	320.47	328.45	DLS
Number of disease surveillance		10,105	9,282	9147	10468	DLS
Number of free veterinary medical camps		3,664	4,397	4246	4380	DLS
Number of vaccinated animals (crores)		26.80	31.16	31.92	33.71	DLS
Number of institutions delivering nutrition training across core ministries		5	5	5	6	BIRTAN, IPHN, BIRDEM, BARC, DAE, FPMU
Number of agriculture-related cooperatives societies:	a) government sponsored	867	881	890	895	DAE, MoA
	b) self-initiated	1359	1373	1398	1434	

The release of new vegetables and fruits varieties accelerated

Three new rice varieties were released in 2022/23. This number compares to ten rice varieties were released in 2019/20, eight of which by the Bangladesh Rice Research Institute (BRRI), two by the Bangladesh Institute of Nuclear Agriculture (BINA). Eight rice varieties were released in 2018/19, five of which by the Bangladesh Rice Research Institute (BRRI), two by the Bangladesh Institute of Nuclear Agriculture (BINA) and one by Rajshahi University. Five new varieties of fruits were released in 2022/23. This number was three in 2021/22.

BRRI's new varieties are: *BRRI dhan 96, 97, 98, 99, 100, 101*, (submergence-tolerant) and *BRRI HYBRID-7, 8*. The varieties released from BINA are: *BINA dhan 24* and *25* (saline-and submergence-tolerant). Additionally, Rajshahi University released one variety named *Rabi dhan 1*. Since the beginning of the CIP2, a total of 35 new rice varieties have been released. In 30 June 2019, and since its inception, BRRI released 97 new varieties (91 inbred and six hybrid). By the first quarter of the following financial year, the seed certification agency had already approved

⁷⁴ For MR20, MoA made available the estimated demand for fertilisers which has replaced consumption previously used in MR19 as a proxy for requirements. Also, the change in stocks has been added to the calculation of supply for greater precision: production + import + change in stock (last-year minus current-year closing stock).

five new varieties, namely *BIRRI dhan 93, 94 and 95; BINA dhan 23; and BAU 3*, which looks promising for this year.

In June 2022, BARI invented total 108 high yielding varieties of Rice including seven hybrid and 101 inbred. Among these, 48 varieties for *Boro* (12 *Boro* varieties and *Aus* related), 9 varieties for *Bona Aus* and 17 varieties for *Ropa Aus*, 45 varieties for *Ropa Aman* and 1 varieties for *Bona Aman*. Among all these varieties, 12 varieties are salt tolerant, 4 varieties are water resistance, 5 varieties are cold resistance, 4 varieties are draught resistance, 7 varieties are zinc fortified, 11 varieties contain high protein and 1 variety contains iron. There are 11 varieties which are highly enriched and export quality.

The production of different crops showed mixed trends

Rice production grew year-on-year dramatically change in 2022/23 (+2.0%) in contrast to the previous year (+1.0%), but lower than in base year (2019/20).

Table 11- Average crop area growth rates

Crops	2019/20-2021/22 (%)	2019/20-2022/23 (%)
Rice	0.5	0.3
Wheat	-0.1	-1
Maize	2.5	3
Oilseeds	5	6
Spices	3	67
Pulses	2	0.2
Potato	-0.3	-1
Sugarcane	-4	-3.5
Fruits	-7	4.2
Vegetables	1	1.2
Jute	-1	-0.5

increased to 4.0% in 2022/23 but in 2021/22, it was (+2.0%). The production of maize decreased drastically from baseline 12.5% to 2.5% in the next year in 2020/21 and this year it also decreased to 6.0% in 2022/23. The production of potato significantly increased from baseline -0.5% to 2.9% in 2020/21, and remained same in 2021/22 and 2022/23 at 2%. The average growth of maize since the start of the CIP3 (2015/16 – 2022/23) was distinctively higher than in the period corresponding to the CIP1 (2007/08 - 2014/15). These trends suggest that maize is gradually replacing wheat which is explained by its higher yield, profitability and adaptability to Bangladesh's ecosystems.^{75,76} Consistently with these production trends, the area under maize cultivation slightly increasing, while for wheat, it reduced over the reference period (Table 11). Pulse production decreased by 2% to 0.2% over the previous year. Carrots, Brinjal and promoted respectively by 12.4% and 10.1% in 2022/23 year-on-year - reinforcing the positive trend of the previous year. Whereas and Lal Shak decreased to -3.7% in 2022/23. In 2019/20, it was negative trend for Lal Shak and potato. The areas under cultivation of oilseeds, and sugarcane have been

Table 10- Average crop production growth rates

Crops	2019/20-2021/22 (%)	2019/20-22/23 (%)
Rice	1	2
Wheat	2	4
Maize	6	6
Potato	2	2
Pulses	5	4
Brinjal	5	6
Pumpkin	7	5
Beans	6	13
Lal shak	3	1
Oilseeds	6	10
Banana	-0.27	0.2
Guava	1	2.1
Mango	-0.34	5
Pineapple	-2	-2
Jackfruit	1	0.7

⁷⁵ Islam, Md. S., Abid-Ul-Kabir, Md., Chakraborty, B. & Hossain, M. (2017) [Review of Agri-Food Chain Interventions Aimed at Enhancing Consumption of Nutritious Food by the Poor: Bangladesh](#). LANSa Working Paper Series, Volume 2017 No 12.

⁷⁶ Lightcastle Analytics Wing (2019) [Bangladesh Wheat Sector: Struggling with Demand-Supply Mismatch](#).

reducing since the start of the CIP3, which may be explained by the rapid expansion in the cereal production.⁷⁷ The low production of pulses and oilseeds represents a worrying signal given their importance as a source of protein and micronutrients and will have an adverse impact on micronutrient intake, especially for the poor.

The production of vegetables reported in Table 11 rose in the year under review, in particular that of *papaya* (1.2%). Fruit production, except for papaya, pineapple also accelerated.

The production growth rate of all selected vegetables continued to grow on average over the period since the beginning of the CIP3 compared to the CIP2 period. For fruits, however, the production of coconut witnessed significant growth. Others exhibited non-significant growth rates, meaning that their production either remained essentially unchanged or widely fluctuated. In terms of areas under cultivation, the amount of land dedicated to fruit decreasing yearly, on average, at a considerable rate since the beginning of the CIP3 (-7%), in contrast to the slight decline witnessed during the CIP2 period (-5.0%).

Production of most crops in the following seasons will most likely be affected by the COVID-19 crisis through disruption of normal planting, cultivating and harvesting activities during the extended lockdown, and the difficulties encountered in procuring inputs as required, although these effects will be mitigated by the measures promptly taken by the GoB to sustain food production.⁷⁸ Agriculture is working as one of the driving forces of the economy of Bangladesh as a result of the adoption of favourable agricultural policies and strategies by the government. Although food security is likely to be disrupted due to global corona disaster, food grains production and supply system may be disrupted, but Bangladesh did not have to face such problems due to timely decision of the government. The government is working tirelessly to build sustainable, safe and profitable agricultural systems to ensure food security. The government has been making all out efforts for the overall development of the agriculture sector in the light of Vision 2041, 8th Five Year Plan, National Agricultural Policy 2018, Sustainable Development Goals, Deltaplan-2100 and other planning documents. At present, the government has adopted short, medium and long term action plans to meet the future needs of the growing population, based on the agriculture sector's achievements in various emergencies, including the impact of COVID-19.

The new improved breeds for fish have been introduced significantly though lower than the previous year.

In the current year (FY 2022-23), four new improved breeds of fish have been introduced. The new improved breeds of fish were 10 and 4 in 2021-22 and baseline year 2019/20 respectively. This means that the new improved breeds of fish have developed significantly but less than the previous year. The development of new improved breeds of fish has been a significant breakthrough in the aquaculture industry. These new breeds are designed to grow faster, resist diseases, and have a higher yield, making them more profitable for fish farmers. The development of new breeds involves a combination of selective breeding and genetic engineering techniques

⁷⁷ *Ibid.*

⁷⁸ BBSnews.net (2020) [PM announces Tk 5,000cr package for agriculture over COVID-19](#). 28 April and BER and ERD report 2021-22.

that aim to improve the desirable traits of the fish. The new improved breeds of fish are contributing greatly to producing sufficient inland fish to meet the demands of the country.

The rate of artificial inseminations slightly increased but at a slower pace over the last year

After a steady decline from the base year 2019/20, artificial insemination has rebounded in the current (2022-23) year. The artificial insemination showed a negative growth (-1.35%) in 2020/21 and (-3.36%) in 2021/22. However, in 2022/23, it increased by 0.26% from 4.24 to 4.25 million. Production of liquid and frozen semen also increased by 4.4% in 2022/23 from 4.5 million doses in the previous year but remained the same as was in the reference 2019/20, which was 4.7 million doses. In 2021/22, the number of inseminated cows increased by 26.8% from the CIP3 baseline but decreased by 1.4 from the previous year (2020/21), up to 4.4 million, and crossbred calves slightly decreased by 0.5% from 1.66 million in the previous year (2021/22) but still 11.8% above the CIP3 baseline (2019/20)⁷⁹. A number of private companies such as American Dairy Limited, BRAC, and Lal Teer are producing raw and frozen semen in addition to the public sector.⁸⁰ A slight increase in semen production in 2022/23 than the previous year calls for further action for artificial insemination promotion.

Area under bio fortified crops expanded

The area under bio-fortified crops has expanded significantly in recent years, which is a positive development for food security and nutrition. Bio-fortified crops are those that have been bred to have higher levels of essential vitamins and minerals, such as iron, zinc, and vitamin A. These crops have the potential to address micronutrient deficiencies that can lead to malnutrition and other health problems. The expansion of bio-fortified crops has been driven by a combination of factors, including increased awareness of the importance of nutrition, technological advances in crop breeding, and partnerships between governments, research institutions, and the private sector. The area under bio fortified **crops** production under DAE initiative increase 32.52% in 2020/21 from base line 2019/20 and 20.04% in 2022/23 from 2021/22.

Area of land under organic farming under DAE initiative is increased

Area of land under organic farming was 30425 hectare in the base year 2019/20, it increased 32.5% in 2020/21 from the base year, 21.4% in 2021/22 and 25.10% in 2022/23 from the previous year under DAE initiative. Organic farming promotes environmental sustainability by reducing the use of synthetic chemicals, promoting soil health, and preserving biodiversity. This helps maintain ecosystem balance and contributes to long-term agricultural sustainability and the expansion of organic farming enhances food safety and quality.

The number of farmers trained on sustainable agricultural practices continued to grow except COVID19 situation year

⁷⁹ GoB (2024) [Annual Report 2022-23](#). Dhaka. Ministry of Fisheries and Livestock. In Bangla

⁸⁰ GoB (2015) [Bangladesh Delta Plan 2100 Formulation Project, Livestock Baseline Study](#). Dhaka. General Economic Division. Planning Commission

The operations of DAE - the largest provider of extension services - spreads over all the 64 districts of Bangladesh. In 2022/23, farmers trained by this agency on sustainable practices rose for the third year in a row, by 4.28% to 1.46 million individuals from 1.40 million in the previous financial year. It also trained 0.78 million farmers on modern technologies, of which 30% were female.

Number of farmers trained by DoF decreased while those trained by DLS increased

In 2022/23, the number of farmers trained by the Department of Fisheries (DoF) drastically decreased by 81% from 287000 to 53647 after a huge increase (117%) in the previous year (2021/22) from 132554 to 284000. On the other hand, those trainings given by the Department of Livestock Services (DLS) dramatically increased (1076%) from 35.6 thousand to 418.1 thousand in 2022/23. The training provided by the DoF was the lowest in 2022/23 since the baseline year (2019/20), and the training given by the DLS is increased intensely after a gigantic fall in the previous year and much higher than the base year. Nevertheless, it is obvious that the training of farmers is positively correlated with their production. To ensure new technological uptake and adoption by farmers, training programmes need to be strengthened.

Ongoing development projects in Livestock

With the aim of desirable and sustainable development of livestock, the present government has taken initiatives to increase investment from the very beginning. However, 13 development projects have been implemented in FY 2022/23 under the Annual Development Programme. In addition to ensuring sustainable production of animal meat under all these projects, initiatives have been taken to create employment, strengthen market systems, offer livestock products, and introduce animal insurance. By ensuring a sustainable production system, Bangabandhu's golden Bangladesh will achieve self-sufficiency in milk, meat and eggs and play an effective role in building a talented nation, and Hon'ble Prime Minister Sheikh Hasina's dream Bangladesh will become a developed country by 2041.

The number male extension worker decreased and female extension worker increase

According to the data, In the current year 2022/23, the number of female extension workers increased 10.0% and male extension worker decreased 2.5% respected to previous year. There has been a significant shift in the gender balance of extension workers in recent years, with the number of male workers decreasing and the number of female workers increasing. Extension workers play a critical role in supporting farmers by providing information, advice, and training on various aspects of agriculture and rural development. The decrease in the number of male extension workers and the increase in female extension workers can be attributed to several factors. One of the key drivers is the growing recognition of the important role that women play in agriculture and rural development. Women make up a significant proportion of the agricultural workforce, but they often face significant barriers to accessing extension services and other forms of support.

The production of improved seeds for wheat, pulses and vegetables slightly dropped

In 2022/23, the production of improved cereal seeds dramatically decreased 15.9%. But the year in 2021/22, the production of improved

Table 12 - Supply of formal seeds for selected crops ('000 MT)

Year	2021/22	2022/23	Change 21/22-22/23
Rice	232.59	219.5	-0.06%
Potato	128.89	98.25	-0.24%
Wheat	20.10	19.34	-0.04%
Maize	8.54	8.49	-0.01%
Pulses	3.37	3.02	-0.10%
Oilseeds	3.66	4.85	0.32%
Vegetables	3.41	2.82	-0.17%

Table 13 - Contribution of different actors to seed production in 2022/23

Crops	Contribution to total requirement (%)		
	Public	Private	Self
Rice	39.8	23.9	36.3
Wheat	41.7	1.7	56.6
Maize	2.3	64.5	33.2
Pulses	11.4	0.5	88.1
Oilseeds	18.5	2.5	79.0
Vegetables	14.0	88.5	-2.5
Potato	4.3	8.8	86.9

cereal seeds increased by 28.8% year-on-year, in the baseline year (2019/20) also dropped 2.5% from previous year. This number, however, conceals important variations as seen in Table 12. The supply of formal rice seeds, Bangladesh's staple, did decrease by -0.06% in 2022/23 but it grew by a sizeable 0.32% for Oilseeds and

lessen 0.24% for Potato. Other notable decreased have been the in the supply of pulses and vegetables seeds by -0.10% and -0.17%, respectively.

In 2022/23, the supply of seeds through the formal system (provided by DAE, BADC and the private sector) decreased for Rice, Potato, wheat, maize, pulses and vegetables, while it increased for oilseeds (Table 12). The public sector concentrated on responding to the requirements of Rice, wheat, pulses and oilseeds: 39.8%, 41.7%, 11.4% and 18.5% of needs were fulfilled by this sector. On the other hand, the private sector met 64.5% of the needs in maize seeds, 88.5% of the needs in vegetable seeds and 23.9% of the needs in rice seeds (Table 13). The lion's share of total seed requirements - in particular for rice (36.3%), wheat (56.6%), pulses (88.1%), oilseeds (79.0%), potato (86.9%) and Maize (33.2%) - continued to be met by farmers themselves.

The Production of seeds tolerant increased

The Production of seeds (drought, submergence, salinity) increased to (32401 MT, 15320 MT, 8215 MT) in 2022/23 from (26547 MT, 11230 MT, 5721 MT) in the year 2021/22. The increased production of seeds tolerant to certain conditions or factors can have significant implications for agriculture and crop productivity. These tolerant seeds are developed through breeding or genetic engineering techniques to withstand specific challenges such as drought, pests, diseases, or extreme temperatures. The increased frequency and erratic nature of crop submergence, saltwater intrusion and drought events are major causes of crop failure, consequent income volatility and persistent poverty among the small and marginal farmers in Bangladesh. Recent research findings from a field study⁸¹ revealed that on average, a 1% increase in drought-affected area reduces *aman*

⁸¹ Mottaleb, K.A., Gumma, M.K., Mishra, A.K. & Mohanty, S. (2015) [Quantifying production losses due to drought and submergence of rainfed rice at the household level using remotely sensed MODIS data](#). *Agricultural Systems*. Vol. 137.

and *aus* annual rice production per household by 1,382 and 693 kgs, respectively. To avoid this, submergence, drought-tolerant and short duration rice varieties must be developed and disseminated.⁸² In 2021/22, DAE successfully popularized the cultivation of saline-tolerant rice varieties (*BRRI dhan 47, 53, 54, 61 BINA dhan 8, and 10*) in the coastal area; of submergence-tolerant varieties (*BRRI dhan 51, 52*) in flood-prone areas; and of drought-tolerant varieties (*BRRI dhan 7, 33, 39, 56, and 57*) in drought-prone areas. Moreover, wheat yields increased thanks to the expansion of heat-tolerant varieties (*BARI gom 26, 27, 28, and 30*) and saline-tolerant varieties (*BARI gom 25*) by DAE.⁸³

The expansion of land under surface water irrigation slightly increased

If irrigation is to meet future crop water requirements, surface irrigation needs to be expanded to counter the problems associated with groundwater use such as declining water tables, deteriorating water quality, and increasing energy costs and carbon emissions. Yet, the annual increase in arable land under surface irrigation coverage increased slightly to 39.21 thousand hectares in 2022/23, from 37.54 thousand hectares in 2021/22, 35.42 thousand hectares in 2020/21 and 30.05 thousand hectares in 2019/20. In 2018/19, BADC re-excavated 560 km of canals, set up one rubber and one hydraulic elevator dam, and fielded 231 low lift pumps in order to make more surface water available for irrigation. Over the same period, the Barind Multipurpose Development Authority (BMDA) re-excavated 21.2 km of canals, constructed two cross dams and set up 202 low lift pumps.⁸⁴

The number of diesel pump slightly increased

The number of diesel pump comparing to the total number of pumps increased over the time. In the base line it was 70% but it now 74%. The number of diesel pumps has slightly increased, indicating a continued reliance on diesel fuel as an energy source. Diesel fuel is widely used in various sectors, including transportation, agriculture, and industry, due to its high energy density and versatility.

The rising trend in agricultural credit disbursement continued

Agricultural credit disbursement increased by 26.43% in the year under review, and by 44.31% compared to the baseline, up to 328.3 billion BDT. It exceeded the target set by Bangladesh Bank (BB) by 7.98% in 2021/22 up from 8.35% of a year earlier. Agriculture credit was distributed to the crop sub-sector followed by live-stock & poultry (18.4%), fisheries (12.5%), poverty alleviation (7.3%) and others (16.5%). On the other hand, the share of crop sub-sector was 52.2 percent, followed by live-stock & poultry (13.6%), fisheries (11.5%), poverty alleviation (7.6%) and others (15.1%), during the same period of previous year, signalling increased support to agriculture mechanisation.⁸⁵ Due to outbreak of the Novel Corona virus, BB are instructed through the ACD circulated April 2020 to provide agriculture lone at 4 percent concessional rate (maximum) for cultivating grain crops, cash crops, vegetables and tuber crops as mentioned in agricultural and rural credit policy program. Against the disbursement of these loans, banks will be reimbursed at 5.0 percent as interest loss from BB. Major policy changes in BB credit disbursement contributed to the provision of more credit to farmers and include a 10%-share of

⁸² *Ibid.*

⁸³ DAE (2021) [Annual report 2020/21](#). In Bangla.

⁸⁴ GoB (2019) [Ministry of Agriculture Annual Report 2018/19](#). Dhaka. Ministry of Agriculture.

⁸⁵ Bangladesh Bank (2019) [Annual Report 2019-2020](#). Dhaka.

credit reserved to the fishery sector; extension of the credit scheme to innovative and market-oriented systems such as floating agriculture, integrated farming, turkey rearing, and pen fish farming; and increased credit limit per acre of cultivated crops.⁸⁶ In the year under review, out of the 3.07 million farmers received agricultural and rural credit, 1.51 million were women who received an BDT 83.60 billions, BDT 6.76 billion was disbursed among about 0.102 million farmers through 15,522 open credit disbursement. Around 2.35 million small and marginal farmers received 163.00 billion BDT credit. Moreover, 0.21 billion BDT were disbursed to 7,179 farmers living in less developed areas, such as *haor* and *char* areas.⁸⁷

Number of formal banks providing direct agricultural credit services

In 2022/23 the number of formal banks providing direct agricultural credit services is 58 which was 56 in 2021/22 and 55 in 2020/201 and 54 in the baseline year 2019/20. So, the increase in the number of formal banks providing direct agricultural credit services has a significant positive impact on the agricultural sector. This expansion enhances access to financial resources for farmers, allowing them to secure loans and invest in their farming activities. With improved access to credit, farmers can modernize their operations, purchase high-quality inputs, and adopt advanced technologies, ultimately leading to enhanced agricultural productivity, increased yields, and improved livelihoods.

Proportion of loans for marginalized farmers increased

Loan for marginal farmers shows negative trends due to the covid-19 pandemic. In the baseline 2019/20, total 71.43% of the total marginal farmers got loan but in the 2022/23 total 68.24% of the total marginal farmers got loan. The scenario is decreasing comparing to the baseline 2019/20, 2020/21 and 2021/22. The proportion of loans granted to marginalized farmers has increased, which is a positive development for these communities. Historically, marginalized farmers have had limited access to credit, which has hindered their ability to invest in their farms and increase productivity. However, there has been a growing recognition of the importance of financial inclusion and providing equal opportunities for all farmers, regardless of their socioeconomic background.

The number of 'Krishok Credit Card' increased over time

In 2022/23, Male Krishok Credit Card is 18025980 and Female is 2301450. Comparing to the base line the total number of Krishok Credit Card increased due to the initiatives taken by the government. Bangladesh Bank circulated the money the specialized bank and commercial bank of Bangladesh. The 'Krishok Credit Card' is a credit facility that is provided to farmers in Bangladesh to enable them to access credit and invest in their farms. The number of 'Krishok Credit Cards' has increased over time, indicating that more farmers are availing themselves of this facility to improve their productivity and livelihoods. The 'Krishok Credit Card' was introduced by the government of Bangladesh to provide farmers with access to formal credit at a low interest rate. The credit card can be used to purchase inputs such as seeds, fertilizers, and machinery, as well as to cover other expenses related to farming. The increase in the number of 'Krishok Credit Cards' is a positive development for the agriculture sector in Bangladesh, as it indicates that more farmers are being included in the formal financial system. This can help to improve their financial stability and provide them with the resources they need to invest in their farms and increase their productivity.

⁸⁶ Bangladesh Bank (2019) [Agricultural and Rural Credit Policy Program for the FY 2018-2019 - Press Release](#). Dhaka.

⁸⁷ *Ibid.*

Urea and TSP supply was satisfactory, supported by increased fertiliser subsidies

In 2022/23, while the supply of urea, MoP, DAP and TSP (Triple Super Phosphate) was lower than their respective estimated demand. In 2021/22, while the supply of urea, MoP, DAP and TSP was lower. But in 2019/20, while the supply of urea and DAP was higher, that of MoP and TSP was lower than their respective estimated demand. In particular, urea supply⁸⁸ increased 96% in 2022/23 from 91.8% in 2020/21 and reached 96% of its estimated demand after growing steadily from 98.4% in 2019/20, at the beginning of the CIP3 (Table 11). Over the same period, for MoP, this figure increased to 99% from 90.0% in the previous year and 95.3% in the first years of the CIP3, while TSP supply down to 96% of its demand from 97.0% in the previous year. The supply as a percentage of estimated demand for DAP largely decreased by 2.9 percentage points to 101.9% over the year in 2020/21. It is lower than the baseline value of 106.36%.

In 2022/23 Fertiliser subsidies down by 72.4% up to BDT 257.66 billion, but in the same time urea increasing by 199.2%. Fertiliser subsidies increased by 1.1.3% in 2021/22, up to BDT 149.42 billion, with those for urea reducing the most: by 1.8%. While the share of fertiliser subsidies in the national budget rose to 3.80% in 2022/23 from 2.20% in the earlier year, it remained higher than 1.3% in the CIP3 baseline (Table 12). The GoB is encouraging DAP use which is a mixed fertiliser that includes MoP and urea. The government went on to lower the DAP price to BDT 21 per kg from BDT 25 per kg to reduce production costs. In the same month, it also launched a *Fertiliser Recommendation Guide (2018)* aiming to ensure proper and balanced use of fertiliser in cropland to enhance crop productivity and protect soil quality.

Table 14 - Urea and non-urea fertilisers' subsidies over the reference period

Year	Subsidies (billion BDT)			Change from previous year			% of fertilizer subsidies in national budget	% of urea subsidies in fertilizer budget
	Urea	Non-urea	Total	Urea	Non-urea	Total		
2016-17	11.82	22.59	34.41	-49.4%	-42.5%	-45.1%	1.0%	34%
2017-18	16.95	31.91	48.86	43.4%	41.3%	42.0%	1.2%	35%
2018-19	32.99	41.74	74.73	94.7%	30.8%	53.0%	1.7%	44%
2019-20	29.54	37.62	67.16	-10.4%	-9.9%	-10.1%	1.3%	44%
2020-21	24.86	49.35	74.21	-15.8%	31.2%	10.5%	1.31%	34%
2021-22	24.42	125.00	149.42	-1.8%	153.3%	101.3%	2.20%	16%
2022-23	73.06	184.6	257.66	199.2%	47.7%	72.4%	3.80%	28%

Number of agro Ecological zones increased over times

There has been a notable increase in the number of agro ecological zones, which has brought numerous advantages to agriculture and land management practices. Agro ecological zones refer to distinct geographic areas characterized by specific combinations of climate, soil types, and other environmental factors that influence agricultural production. The expansion of agro ecological zones allows for more targeted and customized approaches to farming. Farmers can tailor their agricultural practices, crop selection, and livestock management to suit the unique characteristics of each zone.

⁸⁸ Supply includes production, import and change in stock.

The number of feed producers registered by the MoFL increased

Feed producers of livestock services registered by the MoFL increased by 8.6% from 290 in 2021/22 to 315 in 2022/23. It was 4.3% increase in 2021/22 compared to 2020/21. The feed producers for Livestock registered by the Ministry of Fisheries and Livestock (MoFL) increased by 26% in 2023 from the baseline year 2019/2020. While the number of feed producers for the fisheries sector registered by MoFL has increased by 3.7% to 252 in 2022/23 from 243 in 2021/22 but is still quite less than in 2022/21. The positive development for the livestock sector in the last year (2022/23) indicates that more producers are complying with government regulations and standards for feed production. Feed producers play a critical role in the livestock industry by providing high-quality feed that is essential for the health and productivity of animals. However, the quality of feed can vary widely, and low-quality feed can lead to poor animal health and reduced productivity.

The number of registered poultry and livestock farms rallied

In the year (2022/23) under review, the number of registered farms for poultry and livestock rebounded to 88,006 and 82,522 from 86,485 and 78,684 in 2021/22 respectively. But, the registered shrimp and fish farmers decreased by 0.5% from 2.08 lac in 2021/22 to 2.07 lac in 2022/23 (Table 9). However, it is worth noting that only the relatively larger size farms are counted. For example, the farms having below 9 cows, 19 goats or sheep, and 1000 broilers or layers or ducks need no registration. Thus, there seems to be a gradual increase in the size of poultry and livestock farms.

Quality assurance for fish feed continues far behind the level witnessed at the beginning of the CIP3

The only way to ensure fish feed has the required balance of nutrients and no unwanted ingredients is to test the contents of a representative sample. Yet, the number of samples of fish feed tested rose gradually from 2016/17 to 2021/22 but decreased (17.4%) in 2022/23 than the previous year. More efforts are needed to boost these tests, especially in light of the existing issues with the quality of animal feed such as heavy metal contamination (see Programme V.1.). In January 2019, BFSA and the MoFL banned imports and sale of meat and bone meal (MBM) for fish and animal feed. Indeed, the latter may contain toxic chemicals such as chromium which can lead to cancer in humans. But a few months later, there was evidence of MBM in some imported fish and animal feed⁸⁹ which can only be detected through testing.

The number of doses of vaccine produced increased

The total number of doses of vaccine produced by DLS has increased gradually over the last four years of periods. It was 277.48 in the baseline 2019/20, 311.60 in 2020/21, 320.47 in 2021/22 and 328.45 in 2022/23. This increase in vaccine production is a positive development, as it helps to ensure that more people have access to life-saving vaccines. Vaccines are critical for preventing the spread of infectious diseases and reducing morbidity and mortality. However, vaccine production is a complex process that requires significant investments in research and development, manufacturing, and distribution. In recent years, advances in technology and manufacturing processes have enabled vaccine manufacturers to produce larger quantities of vaccines in a shorter period of time.

⁸⁹Ovi, I.H. & Hussain, A. (2019) [*Pork product detected in protein imported for use in fish and poultry feed*](#). Dhaka Tribune. 10 September.

Number of disease surveillance rebounded after a declining trend

With a gradual decline since 2019/20, the number of disease surveillance rebounded last year (2022/23). The increase in the number of disease surveillance activities over time can have significant consequences for public health and the effective management of diseases. The number of disease surveillance increased by 14.4% in 2022/23 from 2021/22 and 3.6% from the baseline 2019/20. Disease surveillance plays a vital role in monitoring and detecting the spread of diseases, identifying outbreaks, and implementing appropriate control measures. A decrease in surveillance efforts may lead to delayed or missed detection of emerging diseases, hinder early response measures, and impede the ability to track disease patterns and trends.

Number of free veterinary medical camps slightly increased over baseline

The number of free veterinary medical camps increased over the years since 2019/20 except 2021/22. These camps increased by 3.2% in 2022/2023 from 2021/22 and 19.5% (in 2022/23) from 2019/20. Free veterinary medical camps play a vital role in promoting animal welfare, preventing and treating diseases, and supporting livestock-dependent communities. Efforts should be made to sustain and potentially increase the number of such camps to ensure the availability of veterinary care and promote the well-being of animals in need.

Number of vaccinated animals increased steadily

The number of vaccinated animals increased by 5.6% from 31.92 crore in 2021/22 to 33.71 crore in 2022/23. However, this rate is much higher (25.8%) than the baseline year 2019/20. The number of vaccinated animals has shown a significant increase, reflecting a positive trend in animal health and disease prevention. Vaccination plays a crucial role in protecting animals from a wide range of infectious diseases, reducing illness and mortality rates, and contributing to overall herd health.

The number of institutions delivering nutrition training across core ministries remained unchanged

The number of institutions delivering nutrition training across core ministries remained unchanged comparing to the baseline year 2019/20. In the baseline it was 5 and it remains the same. Despite the growing recognition of the importance of nutrition training in various sectors, the number of institutions delivering nutrition training across core ministries has remained unchanged. This suggests that there is still a need to increase the integration of nutrition into various sectors and to strengthen the capacity of institutions to deliver effective nutrition training. Nutrition is a critical aspect of health and well-being, and its importance is increasingly being recognized in various sectors, including agriculture, education, health, and social protection.

Number of agriculture related cooperatives societies slightly increased

The number of agriculture-related cooperative societies has experienced a slight increase, indicating a positive trend towards collaboration and collective action within the agricultural sector. In the baseline year number of agriculture related government sponsored was 1359, which increased as 881,890 and 895 in the 2020/21, 2021/22 and 2022/23 respectively. On the other way, self-initiated cooperative societies was 1359 in 2019/20 and increased to 1373, 1398 and 1434 in 2020/21, 2021/22 and 2022/23 respectively. Cooperative societies play a vital role in fostering mutual support, knowledge sharing, and resource pooling among farmers and agricultural stakeholders. The slight increase suggests a growing recognition of the benefits of cooperative models in addressing common challenges, accessing markets, and improving livelihoods.

5.1.1.(b).Needs for further actions under this strategy

Provision of incentives for expanding *aus* rice cultivation

To counter the shift by farmers from *aus* rice cultivation to high yielding irrigated *boro* cultivation, the GoB has launched an incentive programme to revive *aus* rice cultivation. In doing so, it wants to minimize farmers' dependency on underground water thus arresting the fall in the water level in the aquifer since *aus* rice requires less irrigation. There are encouraging results with evidence of improved cropping intensity as well as profitability and productivity of *aus* rice through this programme.⁹⁰ In 2022/23, BDT 57.25 million was distributed to 1.00 lakh farmers as an incentive to cultivate *aus* paddy in kharif-1 season but in 2018/19, BDT 375.5 million was distributed to 429 thousand farmers as an incentive to cultivate *aus* paddy in kharif-1 season.⁹¹ The GoB has recently announced that it will provide seed and input support to farmers producing rice in the *aus* season in 2019/20. This BDT 41.8 million (USD 0.5 million) support package is expected to benefit close to half a million farmers across the country. Each farmer will receive a sum enabling him/her to buy five kilograms of seeds, 15 kg of DAP (diammonium phosphate) fertiliser, 10 kg of MoP (muriate of potash) fertiliser, BDT 90 for transportation, and BDT 20 for incidental expenses, for a maximum of 0.33 acre (one bigha) of land. It is estimated that this incentive will lead to the production of 156,452 MT of rice.⁹² Shortage of rainfall in the last year, no work has been done for increasing in *aus* production. Now, DAE planned that *aus* production will increase by providing irrigation support.

Project launched to strengthen capacity to fight fall armyworm

Fall armyworm is a fast-reproducing species that devastates crops. While the level of infestation in Bangladesh is still relatively minor, more than 80 varieties of crops have already been attacked in 22 districts within just a few months.⁹³ This pest's preferred host is maize whose acreage, as seen above, is fast expanding. It is in this context that the *Fighting Back Against Fall Armyworm Project* which is supported by USAID and the University of Michigan has been launched⁹⁴, to train and support agricultural professionals on fall armyworm management strategies. As part of the project, the spread of the pest was mapped. The project engages members of the private sector including pesticide and seed companies, as well as agricultural dealers to ensure they are able to best advise farmers and suggest sustainable and long-term solutions. The project has advised over 755 agricultural dealers operating in impacted areas of Bangladesh, with another 1,000 being trained in 2022/23.

New ways to disseminate nutrition-sensitive agricultural technology innovations

New ways to convey information on new agricultural technologies and nutrition to farmers are being explored. For example, in April 2019, *Farming Future Bangladesh (FFB)*, with technical assistance from the Islamic Foundation, organized a training of trainers session on agricultural innovations and their applications of agro-biotechnology for sustainable food security for imams.⁹⁵ Because religious leaders are powerful influencers, their role in social mobilisation can be very effective.

⁹⁰ Uddin, T.M. & A.R. Dhar (2018) [Government input on Aus rice production in Bangladesh: impact on farmers' food security and poverty situation](#). Agriculture and Food Security 7:14.

⁹¹ GoB (2019) *Ministry of Agriculture Annual Report 2018/19*. Dhaka. Ministry of Agriculture.

⁹² USDA (2019) [Gain report- Bangladesh Grain and Feed Annual 2019](#). BG 1903. USDA Foreign Agricultural Service.

⁹³ CIMMYT (2019) [Bangladesh increases efforts to fight fall armyworm](#). 30 May.

⁹⁴ CIMMYT (2020) [New project strengthens capacity to fight fall armyworm in Bangladesh](#). 22 January.

⁹⁵ Dhaka Tribune (2019) [Imams can play role in disseminating agricultural innovations](#). 27 April.

Expansion and popularisation of floating agriculture

In some parts of Bangladesh, most affected by flood and where water remains for a prolonged period of time, farmers are using their submerged lands for crop production by adopting scientific methods which are similar to hydroponic agriculture practices, i.e. floating agriculture, whereby plants can be grown on the water in a bio-land or floating bed of water hyacinth, algae or other plant residues. This practice has traditional roots in practices dating back to the country's forbearers. According to their needs, people in different parts of Bangladesh have adopted, modified and named this practice differently (baira, boor, dhap, gathua, gatoni, geto, kandi and vasoman chash and floating agriculture). Actually, this practice is most successful in the coastal areas that are adjacent to the sea-bank areas, which remain submerged for long periods, especially in the monsoon season, as well as the wetland Haor Areas. Floating gardens are age-old practice of crop cultivation in the Southern floodplains of Bangladesh (Barisal, Goplaganj and Pirojpur districts). Floating garden agricultural practices (locally known as Dhap) for growing vegetables and spices prevail in the wetlands of the south central coastal districts of Bangladesh since immemorial times. With the use of available water hyacinth (*Eichhornia crassipes*) and other aquatic weeds, local communities have developed a technique to construct reasonably-sized floating platforms or raft on which vegetables and other crops can be cultivated. The unique hydroponics production system was developed in the hands of the locals by using their traditional knowledge for agricultural practice and livelihood. The production system is the major livelihood option for about 60-90% of the locals. Bangladesh Agricultural Research Institute (BARI) very recently implementing a base research of floating agricultural production system. Department of Agricultural Extension (DAE) is also implementing a project to transfer the production system in the similar ecosystem. In 2022/23, approximately the surface area are 2500 square kilometer in Gopalganj, Pirojpur and Barishal.

In 2018/19, the GoB distributed BDT 10.72 million to 4,105 farmers in 46 districts as incentive under seed distribution, preparation of floating seedbeds and harvesting and distribution of seedlings programmes during the *aman* season.⁹⁶ Despite some limitations and challenges, floating gardening and subsequent winter vegetable cultivation have been useful for improving nutritional security and household income.⁹⁷ As part of its climate change adaptation, the GoB is promoting the expansion of floating agriculture, and various NGOs have set up projects to this end. The floating garden hydroponics system was recognized in December 2014 by FAO as a Globally Important Agricultural Heritage System (GIAHS) for innovation, sustainability, and adaptability. BARI assists farmers in cultivating vegetables in abandoned ponds and water bodies to make floating beds. Fertilisers and pesticides are not needed with this method which lowers production costs and increases profit since organic produce is sold to consumers at a higher price. The jointly implemented by DAE and BARI *Research, Extension and Popularization of Vegetables and Spices Cultivation on Floating Beds Project* has been developing and disseminating floating bed agricultural technologies.⁹⁸

Develop bio fortification to increase the nutrient-density of major food items

The Bangladesh Rice Research Institute (BRRI) and its partners are working to develop such rice and other crop varieties which are evaluated, some piloted and being fielded. Some of these

⁹⁶ *Ibid.*

⁹⁷ Irfanullah, Md. H., Azad, Md. A.K., Kamruzzaman K. A.K.M., & Ahsanul, Md. W. (2011) [Floating Gardening in Bangladesh: A means to rebuild lives after devastating flood](#) *Indian journal of traditional knowledge* 10(1):31-38.

⁹⁸ GoB (2019) *Ministry of Agriculture Annual Report 2018/19*. Dhaka. Ministry of Agriculture.

varieties are already in the seed pipeline. The PoA will support and leverage BRRI's work to make such varieties readily available to farmers. Modern breeding and selection methods permit bio-fortification through which the bioavailability and the concentration of nutrients in crops can be increased. In contrast to industrial fortification, bio-fortification genetically adds selected nutrients in crops. Examples are iron-rich rice, zinc-enriched rice and golden rice (with vitamin A) and orange fleshed sweet potato with high vitamin A content.

Increase surface water usage, enhance water conservation and increase water use efficiency

Surface water irrigation will be encouraged and rainwater harvested. Rainwater is free from arsenic contamination and salinity. While rainwater harvesting is mostly adapted to drinking, it can serve for irrigation for homestead gardens and in cases of drought. It can also be integrated with hydroponic cultivation instead of irrigation as suggested by the World Bank's CSAIP for Bangladesh. Construction of new reservoirs and repair of old ones for conservation of rainwater thus needs to be expanded throughout the country and suitable storage developed. Forests should be protected, and tree planting encouraged for their role in balancing the discharge and recharge of water tables. Irrigation methods that consume less water will continue to be disseminated. Alternate wetting and drying for example not only reduces water use but also limits methane emissions. Using buried pipes rather than using open channels minimises evaporation and spills. More focus should be put on rain fed *aus* and *aman* rather than irrigation intensive *boro* rice which accounts for almost 90% of the Consumptive Water Use. In water scarce areas, sprinklers, drips and micro-irrigation should be promoted. Different areas may warrant different approaches such as portable irrigation for vegetables in the *char* areas (see NAP PoA 2020 Key AoI 1.4.4). Reuse of wastewater, especially in peri-urban areas will be seriously looked into with the necessary adjustments to existing rules and regulations made in order to upkeep safety standards and infrastructure investments made.⁹⁹

To use surface water for irrigation BMDA has reexcavated 3,751 nos. khas ponds, 6 nos. water bodies, 2,215.07 km. khas canal and to preserve the water in the canal 750 nos. cross dam has been constructed across the canals. As a result, about 1.10 lakh hectares of land has been brought under supplementary irrigation. To increase the use of surface water for irrigation the Authority has introduced a system by which water is lifted from the Padma, Mohanonda and Atrai rivers and supplied to the canal through buried pipe line. About 22,500 hectares of land has brought under irrigation by using 673 nos Low Lift Pumps (LLP) beside the canal, river and other water bodies. Alternate Wetting and Drying (AWD) irrigation system is introduced for saving irrigation water. To motivate and encourage the farmers for cultivating profitable and less water consuming crop like, wheat, potato, bean and other pulse type crops, the authority undertook some training and motivational programme for the farmers. Area under irrigation continues to grow. The total area under irrigation in FY 2016-17 was 55.27 lakh hectares, which increased to 56.88 lakh hectares in FY 2021-22. The target area for irrigation in FY 2022-23 has been set at 57.20 lakh hectares (New).

Develop and promote new technologies and infrastructure

R&D will continue in collaboration with the private sector to develop new sustainable and energy efficient irrigation technologies learning from other countries' experience. For example, precision

⁹⁹ Haldar. K., K.Kujawa-Roeleveld, M. Schoenmakers, D.K. Datta, H.Rijnaarts & J. Vos. 2021. [Institutional challenges and stakeholder perception towards planned water reuse in peri-urban agriculture of the Bengal delta](#). Journal of

irrigation is being developed using sensors that guide the growers as to the exact irrigation needs of different crops. Innovative technologies will be disseminated. ICT-based and digital solutions for irrigation water management will contribute to achieving sustainable water availability for irrigation in the coming decades (PP2041). Concurrently, large infrastructure projects required to ensure country wide irrigation will continue, including those that upgrade and modernise existing systems. Rubber dams will be built and restored to prevent saltwater intrusion as well as sluice gates to control flood waters.

Excavation and re-excavation of canals and rivers have proved to provide good job opportunities for women and reclaimed *khas* land from irrigation projects has been distributed to destitute women, an initiative which should continue¹⁰⁰. Involvement of the private sector will be sought: The Bangladesh Delta Plan 2100 (BDP 2100) projects that on an average Bangladesh should be able to mobilize at least 0.5% of Gross Domestic Product (GDP) per year from private sector to finance projects of water resource management and related infrastructure. This is important for costly endeavours such as dredging which are not only needed to maintain river navigability and control floors but also for properly functioning irrigation systems.

Facilitate access to sustainable irrigation technology

Access to irrigation technology adapted to all size farms and geographies will be promoted by exposing producers to demonstrations, giving them access to finance for necessary investments and promoting the formation of groups and cooperatives which collectively, can secure better access to infrastructure and ensure its effective maintenance and management (PP2041). Particular attention will be given to increasing rural women's access and participation to irrigation schemes and water management initiatives which are proved to be determinants of improved household livelihood, nutrition and health¹⁰¹. Access to clean and sustainable technologies will be favoured with the promotion of solar powered irrigation pumps for example

Develop of agricultural credit service in a timely manner for the poor, marginalized and small-scale producers through the formal banking system

Bangladesh Bank (BB) along with its public and commercial banks are providing agricultural credit with over 10% growth rate in the recent years to almost three million borrowers where 41% are women. However, the credit disbursement is often not done in a timely manner resulting in underutilization of credit and economic losses. Timely disbursement of credit to the small-scale producers are crucial in this regard and actions need to be undertaken.

A recent profiling by CGAP⁹¹ defined the following smallholders farming groups: (i) farming for sustenance; (ii) battling the elements; (iii) option for growth; and (iv) strategic agriculture entrepreneurs. This profiling will be utilized to improve the targeting. The definition of farmer will also need to be reviewed to include farmers so far excluded such as those rearing livestock, honeybees, cultivating mushrooms etc., thus preventing them from availing credit from banks

¹⁰⁰ Ministry of Finance. 2019. [Medium-Term-Budget-Framework- Ministry of Water Resources 2019/20](#). Government of Bangladesh

¹⁰¹ Bryan, E. & El Didi, H. 2019 [Guest Commentary - Considering Gender in Irrigation: Technology Adoption for Women Farmers](#). Chicago Council on Global Affairs

Enable investment in sustainable fisheries

DoFish will strengthen fishery policies, regulatory frameworks and institutional capacity to reduce investment risks due to regulatory and enforcement gaps. DoF will conduct awareness-raising programmes. Different fishers' and boat owners' associations (both industrial and artisanal) and relevant government entities, such as the Coast Guard, Navy, Police, Bangladesh Land Port Authority, Chittagong Port Authority and Customs, and other stakeholders will be involved.

Conduct research on the optimum fish farming in the Haor, Cage culture in the river, and other open water.

A vast watery area (251717/hectare) of Haor of our country is being used for capturing a minimum amount of fish (457 Kg/Ha). Whereas, the amount of fish production in in pond was 5129 kg/hectare in 2020/21.¹⁰² No special cares are taken to improve the production of fish or any aquaculture production in the Haor. Similarly, a small amount of fish is captured in the bills, rivers and sea, which means that a huge water area remained almost unused for fish farming compared to possibility. There is huge potential for fish farming there, either by farming or by cage culture or a time-bound fishing ban. Research should be conducted to find out the challenges and way forward to develop in these cases.

Promote on-farm production and preservation of quality seeds for pulses, oils and spices

As the lion's share of the total seed requirement -particularly for pulses, oilseeds (see Table 13 above) and spices is still provided by farmers themselves, emphasis should be given to the production and preservation of quality seeds at farm level. Farmers' home-grown seeds are typically of poor quality in terms of purity, germination capacity, vigour, disease and insect resistance because knowledge about seed production technology, processing and storage is very limited.

DAE has implemented a project titled *Farmers' level Quality Seed of Pulse, Oilseed and Spice Production, Preservation and Distribution* but more needs to be done to provide training to farmers, especially for the enhancement of quality seeds of high-value crops, such as pulses, oilseeds and spices. Following the COVID-19 pandemic, however, it is likely that own seed production by farmers will have been severely affected and the focus may need to be on urgently supplying seeds to farmers to safeguard future production. In fact, at the time of writing this report, some 1.5 billion BDT had been allocated for the distribution of seeds and seedlings.¹⁰³ To this end, there is a need to promote healthy seeds to enhance the yield and nutritional quality of the produce.

Accelerate the use of organic fertiliser through better manure management

Bangladesh has the highest density of livestock in the world with 35.53 million households owning 48.15 million cattle¹⁰⁴ which results in a high concentration of livestock manure, responsible for methane and nitrous oxide GHGs emissions. Dried manure utilized for cooking and heating contributes to air pollution through carbon monoxide emissions and the discharge of both solid

¹⁰² BBS (2022). *Year book of agricultural statistics-2022*.

¹⁰³ BBSnews.net (2020) [PM announces Tk 5,000cr package for agriculture over COVID-19](#). 28 April.

¹⁰⁴ BBS (2019) [Preliminary report of agricultural census 2019](#). Dhaka. Ministry of Planning.

and liquid manure into water is responsible for the increase in the occurrence of illnesses such as diarrhoea.¹⁰⁵ Accordingly, the Integrated Livestock Manure Management (ILMM) Policy and Action Plan (2016-2030) aims to encourage livestock farmers to adopt improved manure management practices, such as the use of bio-digesters and the creation of value-added manure products, and to facilitate the development of a manure market. The policy encourages farmers to set up societies and to build ‘community’ bio-digester plants and/or environment-friendly manure storage and treatment facilities.¹⁰⁶

Bio digesters create conditions for the anaerobic decomposition of organic material such as cow dung and poultry litter and produce biogas and bio-slurry. The use of biogas reduces the burning of solid manure and other biomass fuels while the use of bio-slurry as fertiliser can increase crop yields and reduce costs.

While financing options for the installation of bio-digesters do exist through RDA under Ministry of Local Government, Rural Development and Cooperatives (MoLGRD), the BRAC and Grameen Shakti microfinance programmes and a government-owned financing agency, IDCOL (Infrastructure Development Company Limited) and Bangladesh Council of Scientific and Industrial Research (BCSIR), no digesters are collectively owned or managed by small-scale or landless farmers for lack of access to finance, technical knowledge, livestock and/or manure, and sufficient land.¹⁰⁷ Thus, the government, with assistance from local NGOs, should look into measures that may encourage farmers to install bio-digesters. Likewise, the usage of other organic fertilisers to improve soil health and land productivity should be encouraged. To this end, the government has provided registration to eight companies for marketing organic/ bio-fertilisers in 2021/22.

Expand the usage of bio-pesticides

Bio-pesticides are pest management agents based on living micro-organisms or natural products and their usage can contribute to preserving the safety and nutritional content of the food. The GoB has taken initiatives to develop and spread on-farm bio-pesticides usage under the project *Development and Dissemination of Bio-pesticides Technologies for Vegetables, Fruits and Pan Crops*. However, research and extension activities on bio-pesticide-based integrated pest management technologies remain limited and need to be developed and disseminated with a focus on effective and cheap bio-pesticides.

The government needs to develop a legal framework for commercialisation of bio-pesticide in order to make quality bio-pesticides available at a reasonable price. Involvement of the private sector may also be encouraged in the commercial production and distribution of bio-pesticides with strict quality control measures in place.¹⁰⁸ In the medium term, however, the GoB may need to focus its efforts on guaranteeing the availability of more traditional pesticides for farmers in cases where supply chains will have been affected by the measures taken to counter the COVID-19 pandemic.

¹⁰⁵GoB (2016) [Draft National Integrated Livestock Manure Management \(ILMM\) Policy](#). Dhaka. Ministry of Fisheries and Livestock.

¹⁰⁶ Biskupska, N., Pravalprukskul, P. & Osborne, M. (2019) [Why Do Farmers Take up Biodigesters? An Assessment from Bangladesh](#). SEI Discussion Brief. Stockholm Environment Institute. Stockholm.

¹⁰⁷ *Ibid*.

¹⁰⁸ SAARC Agriculture Centre (2013) [Extent and potential use of bio-pesticides for crop protection in SAARC countries](#). Dhaka.

Improve reservoirs system for rainwater harvesting

Groundwater extraction is increasingly higher than its recharge, thus depleting the groundwater table. For instance, groundwater in the Rajshahi district receded at a rate of 0.23 m/year over the period 2000 – 2014.¹⁰⁹ An alternative to groundwater extraction is rainwater harvesting in ponds and other reservoirs which may contribute cheaply and sustainably to improved water availability during the dry season. Furthermore, rainwater is free from arsenic contamination, salinity and other harmful infectious organisms and pathogens. Bangladesh is characterised by abundant rainfall averaging about 2,200 mm per year, 75% of which occurs between May and September, making this an appealing option. Under several projects, the government has constructed new reservoirs and repaired old ones for the conservation of rainwater but this has been limited in scale and may be expanded throughout the count.

Impact on Agriculture and Climate Change Adaptation and Mitigation

According to the Global Climate Risk Index 8, Bangladesh is the most climate change vulnerable country in the world [30]. Today, and in to the coming decades, the country is likely to be negatively affected by sea level rise and saltwater intrusion, mean temperature increases (1.7o C by 2050), rainfall variability, and an increase in the frequency and intensity of extreme weather events. Each of these factors will have considerable impacts on agricultural production in the country.

Situated in an alluvial delta plain, Bangladesh has five major river systems that often change locations, depending on siltation and flow. The country is thus highly vulnerable to sea level rise and salinization of inland water sources. Salinization is expected to advance 8 km further north in the country by 2030, further reducing land availability for farming. While infusion of salt water into the rivers and canals remains a challenge for crop production, it also brings opportunities for salt-water shrimp production, which has expanded recently due to its higher profitability compared to other crops (such as rice) [32].

Approximately 60% of Bangladesh's area is characterized by a tropical savanna climate, while another 30% is considered tropical monsoon [33]. Rainfall patterns vary from North to South and from East to West in the country, except during monsoon months (May through September). The hilly areas of north-western Bangladesh are prone to drought, for example, while the north-eastern freshwater wetland often faces delayed rainfall or early flash flooding. While the central floodplains experience flash floods and riverbank erosion, and the hilly areas experience landslides, urban areas in Bangladesh are plagued by rainwater drainage issues [3]. Most rainfall in Bangladesh occurs in the summer months between June and October, while the winter months (November to February) receive only 4% of the annual rainfall. Early monsoon rain is caused heavy flooding in north-eastern haor (vast low depression areas) that damaged pre-mature boro paddy. On the whole, rainfall is expected to increase in Bangladesh by 9-12% by 2050

Due to the impacts of climate change and the reduced navigability of rivers and canals, stagnant water remains in flood plains for extended periods after the rainy season. This leads to delays in the timely sowing of paddy and other seasonal crops. Consequently, early floods can cause

¹⁰⁹ Aziz, M.A, Majumder, Md. A.K., Kabir, Md. S., Hossain, Md. I., Rahman, Niaz Md. F., Rahman, F. & Hosen, S. (2015) [*Groundwater depletion with expansion of irrigation in Barind tract: a case study of Rajshahi district of Bangladesh*](#). *Int. J. Geol. Agric. Environ. Sci.* 3:32–38. **8 The Index analyses the extent to which countries have been affected by the impacts of weather-related events (e.g. losses related to storms, floods, heat waves etc.)**

significant damage to crops. However, the construction and repair of various structures, including irrigation canals, along with river dredging, will contribute to climate change adaptation in the upcoming years. Furthermore, as part of the canal excavation program, irrigation facilities have been provided to the land through the re-excavation of canals, as well as the construction, maintenance, and operation of water control infrastructure. In the fiscal year 2021-2022, these efforts resulted in the provision of irrigation facilities to 24.88 lakh hectares of cropland and 10.71 lakh hectares of land, benefiting three cropping seasons through major and minor irrigation projects. The availability of adequate irrigation facilities, coupled with crop diversification, has led to a continuous increase in crop production, playing a significant role in ensuring the country's food security.

5.1.2 Strategy 1.2 -Scale up nutrition-sensitive diversification of food production

This strategy consists of 3 AoIs of NFNSP-PoA namely 1.2.1 Promote diversification into horticulture, fisheries, livestock, poultry and dairy products with high nutrient and micronutrient content including regional and ethnic foods, 1.2.2. Increase funding and improve efficiency of R&D for sustainable agriculture, 1.2.3. Improve the availability of safe nutritious food through innovation and expansion of appropriate methods of urban-based food production. It also covers 2 programmes of CIP3 namely Programme I.6. Promotion of agricultural diversification into commodities with high nutrient content and market value including animal-source, regional and ethnic foods I.7. Developed blue economy.

5.1.2 (a) Progress towards achievement

Table 15: Progress towards achievement of NFNSP Strategy 1.2 and CIP-3 program(I.6-I.7)

CIP3 output proxy	Item	2019/20	2020/21	2021/22	2022/23	Source
Production of selected horticulture Products	Potato	96.06	98.89	101.45	104.32	BBS
	Pulses	3.98	4.25	4.32	4.39	
	Brinjal	5.58	5.87	6.19	6.81	
	Oilseeds	5.57	5.89	6.17	7.63	
	Lal shak	0.61	0.65	0.73	0.70	
	Pumpkin	3.40	3.56	3.74	3.83	
	Beans	1.70	1.70	1.70	2.28	
	Guava	2.26	2.44	2.45	2.56	
	Mango	12.22	12.15	12.07	14.82	
	Jackfruit	10.02	10.97	10.50	10.62	
	Coconut	4.12	4.03	4.12	4.57	
	Papaya	1.31	1.26	1.47	1.45	
	Pineapple	2.18	2.08	2.06	1.97	
	Banana	8.18	8.26	8.26	8.40	
	Jhur/tan	895	940	1089	1497	
GDP from crop sector as % of agriculture GDP, at constant prices 2015/16		47.64%	47.23%	47.02%	46.92%	BBS
Annual change in quantity of fish production		2.72%	2.62%	2.98%	3.28%	DoF, MoFL
Fishery exports value as % of total export value		1.39%	1.24%	1.06%	0.72%	DoF
Shrimp share in fishery exports (%)		74%	67%	70%	70%	DoF
Number of ponds		2,490,000	2,490,689	2,502,188	2,519,872	Fisheries Statistical Report
GDP from fishery sector as % of agriculture GDP, at constant prices 2005/06		21.46%	21.86%	21.78%	21.66%	BBS
Production of livestock, poultry and dairy products	Meat (million MT)	7.67	8.44	9.265	8.71	MoFL, BBS
	Eggs (million)	17,360	20576.4	23353.5	23376.3	MoFL, BBS
	Milk (million MT)	10.68	11.985	13.074	14.07	MoFL, BBS
Growth rate of livestock GDP (Constant price)		3.19%	2.94%	3.10%	3.23%	DLS
Production of selected ethnic and regional foods crops	Tara sabji	17,360	20576.4	23353.5	25109	MoFL, BBS
	Jhur/tan	10.68	11.985	13.074	14.97	MoFL, BBS
	Dhumur	7.67	8.44	9.265	10.12	MoFL, BBS

CIP3 indicators	output proxy Item	2019/20	2020/21	2021/22	2022/23	Source
Budget allocations for public sector R&D on agriculture (taka)		1037.61 Crore	1044.52 Crore	1112.51 Crore	4108.91 * Crore	MoA
Direct gender budgeting as % of MoA revised budget		3.91%	4.19%	8.99%	3.37%	MoF
Direct gender budgeting as % of MoFL revised budget		40.47%	32.96%	40.63%	36.42%	MoFL
Number of people trained in rooftop gardening		4997	5230	5498	5984	DAE
Coverage of marine protected areas (ha)			69,800	7367	1743 km2 (860.46 km2 waiting for declaration)	DLS, DoFish
Area of land affected by salinisation (hectare)		1030220	1045110	1056000	1056260	SRDI
Percentage of wetland and natural sanctuaries maintained		2.1%	2.1%	2.1%	2.1% excluding 432 km hilsa sanctuary	MoFL
Percentage of areas protected	Coastal areas	...*				DoF, MoFL
	Marine areas	4.73%	4.73%	6.02%	7.92%	DoF, MoFL

*Development budget 4100.41 crore & research budget 8.50 crore

Production of selected horticulture products increased over time

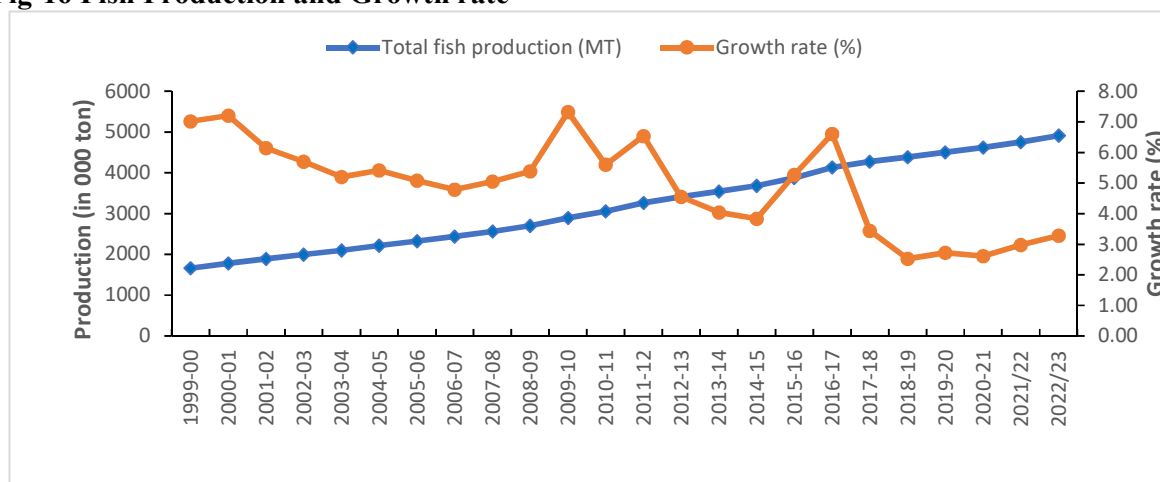
Horticulture encompasses the cultivation of fruits, vegetables, ornamental plants, and other high-value crops. The production of selected horticulture products has witnessed a substantial increase, highlighting positive growth and development in the horticultural sector. The rise in production indicates improved farming practices, increased investments in horticultural infrastructure, and enhanced market demand for these products. The growth in production contributes to food security, promotes agricultural diversification, and offers economic opportunities for farmers and related industries.

GDP from crop sector as % of agriculture GDP, at constant prices 2015/16 slightly decreased

The GDP from the crop sector as a percentage of the agriculture GDP, at constant prices 2015/16, has experienced a slight decrease, indicating a negative trend in the contribution of crop production to the overall agricultural economy. The GDP from crop sector as % of agriculture GDP decreased from the baseline year from 47.64% to 47.02% in 2021/22 and to 46.92% in 2022/23 from the previous year. The crop sector encompasses the cultivation of various crops, including food crops, cash crops, and industrial crops. The slight decrease suggests improved productivity, market demand, and favourable agricultural policies and practices. This growth in the crop sector contributes to food security, income generation for farmers, and overall economic development. It signifies the importance of crop production in driving agricultural GDP and underscores the

sector's resilience and potential for further expansion. Continued support for agricultural research, technological advancements, and farmer empowerment can further enhance the performance of the crop sector and foster sustainable agricultural growth.

Fig-16 Fish Production and Growth rate



Fish production growth slightly increased last year after a slowed growth trend

Fish production remains mainly driven by aquaculture (57%), followed by capture (28%) and marine fishing (15%) with these proportions remaining substantially unchanged year-on-year. Fish production increased by 2.6 times since 2001/02 up to 4.91 MMT in 2022/23, by 3.3% year-on-year (Figure 14) for the Government's active initiatives in this sector by implementing result-oriented specific programs for sustainable fisheries management through innovation and dissemination of environment-friendly new fisheries technologies. However, the growth trend has recently increased to 3.3% in 2022/23 from 2021/22 and the growth rate was 2.7 in CIP3 baseline 2019/20.

Nevertheless, per-capita consumption has increased. The increase in fish production was satisfactory as a result of the successful implementation of long-term expansion plans and development projects undertaken by the government in the fisheries sector¹¹⁰.

The value of fisheries in total export value declined

Fisheries' export value in total exports reduced to 0.72% in 2022/23 from 1.06% in the previous year (2021/22), and this export value is the lowest ever since the baseline 2019/20. This trend has several explanations: the ban on imports of fish treated with certain antibiotics by a number of countries (Southern Shrimp Alliance, 2018)¹¹¹; the low competitiveness of Bangladeshi Tiger and Galda shrimp against the cheaper Vannamei variety in a context of weaker prices; and an abundant international supply associated with a slower demand and global reduced economic

¹¹⁰ FAO (2020) *FAO COVID-19 Rapid Assessment of Food and Nutrition Security in Bangladesh*. Dhaka.

¹¹¹ Southern Shrimp Alliance (2018) [2018 Begins with Bangladeshi Shrimp Refused Entry for Banned Antibiotics and Indian Shrimp Refused Entry for Salmonella](#). 5 February.

growth.¹¹² This is worrying in that Tiger and Galda shrimp constitute Bangladesh's most important agriculture-based export, accounting for more than 70% of total overseas earnings.¹¹³

Shrimp share in fishery exports (%) remained unchanged

The shrimp share in fishery exports has remained static over the last two years but lower than the base year 2019/20, signalling a shift in the composition of fishery exports and potentially reflecting changing market dynamics. The Shrimp share in fishery exports decreased to 67% in 2020/21 from the baseline year 74% and increased to 70% in 2021/22 and remained unchanged in 2022/23. Shrimp, being a high-value seafood product, has traditionally been a significant contributor to fishery exports in many countries. The slight decrease in its share suggests various factors such as fluctuations in market demand, changes in consumer preferences, or challenges within the shrimp farming industry.

The number of ponds continues to rise

The number of ponds is seen a slightly increasing trend over the last three years. The rates of increasing the number of ponds were 0.03%, 0.46%, and 0.71% in 2020/21, 2021/22, and 2022/23 compared to their consequent previous years. However, the number of ponds was 1.20% higher compared to the base year 2019/20. This slow but steady expansion in the number of ponds is likely to have contributed to the observed increase in aquaculture production.

Fishery sector contribution to agricultural GDP slightly decreased

Fishery sector contribution to agricultural GDP increased from the baseline year from 21.46% to 21.86% in 2020/21 and decreased to 21.66% in 2022/23. The fishery sector's contribution to the agricultural GDP has experienced a downward trend, reflecting challenges and potential concerns within the sector. The fishery sector plays a vital role in food security, employment generation, and export earnings in many countries. However, factors such as overfishing, habitat degradation, climate change, and unsustainable fishing practices have put pressure on fish stocks and impacted production levels. This downward trend may indicate declining fishery yields, reduced economic output, and potential threats to the livelihoods of those dependent on the sector.

¹¹² FAO (2019) [Food Outlook – Biannual Report on Global Food Markets](#). May and November 2019. Rome.

¹¹³ Holland, J. (2019) [Bangladesh seeks more buck for its baqda](#). Global Aquaculture Alliance.

Egg, milk and meat production improved but milk production still remains largely insufficient

In line with the trend witnessed since the beginning of the CIP3, in 2022/23, the production of egg, milk and moderately increased by 1.47% to 23.38 billion, by 6.37% to 221.89 ml/day/head, and meat decreased by 7.08% to 137.38 gm/day/head, respectively (Table 16). Egg and meat production covered an estimated 132.77 % and 114.48% of domestic demand (Table 16), while

Table 16 - Eggs, milk and meat production, demand and per capita availability, demand and supply coverage in 2022/23

Products	Production	Demand	Coverage (%)
Egg	23.38 billion (134.58 number/year/head)	17.61 billion (104 number/year/head)	132.77
Milk	140.68 lakh MT 221.89 ml/day/head	250 ml/day/head	88.76
Meat	87.10 lakh MT 137.38 gm/day/head	120 gm/day/head	114.48

* population: on July, 2022: 17 Crore 37 Lakhs (MoFL 2022-23)

Source: Ministry of MoFL: Annual Report 2022-23 & Livestock Economy at a Glance 2022-23

milk production covered only 88.76% of estimated domestic demand.¹¹⁴ The Bangladesh Bank dairy loan scheme at a 5% interest rate has been contributing to the positive progress of the livestock sector since 2015. This USD 23.53 million refinancing fund is to encourage dairy farming and cut malnutrition and milk powder import bills.¹¹⁵

In spite of the world pandemic COVID-19 situation, Bangladesh earned self-sufficiency in egg and meat production, while Bangladesh is far behind to achieve self-sufficiency for milk production.

The introduction of world-renowned improved breeds of broiler and layer strains has played a vital role in increasing poultry productivity.¹¹⁶ Therefore, milk production needs further improvement to bridge the 20.4% gap between domestic production and demand. In particular, the growing modern dairy production value chain which currently covers only 15% of the dairy sector has a strong potential for adding value to the dairy industry.¹¹⁷

Livestock's contribution to agricultural GDP hardly varied but livestock growth rate progressed

Livestock's contribution to agricultural GDP was 3.23% (constant Prices) in 2022/23, which was the highest since the CIP base year 2019/20 and a slight higher (4.2%) than that of previous year (2021-22). However, the livestock GDP growth rate consistently reduce to 3.10% in 2021/22 at a slower pace from 3.19% in the baseline 2019/20, and then gradually dropped to 2.94% in 2020/21 which was the lowest over the last CIP2 period, especially for world pandemic COVID19 situation (Table 2). The slower and

¹¹⁴ GoB (2024) [Livestock Economy at a Glance 2022/23](#). Dhaka. Department of Fisheries. Ministry of Fisheries and Livestock.

¹¹⁵ Bangladesh Bank (2019) [Re-financing scheme](#). Dhaka. In Bangla.

¹¹⁶ Rahman, M. S., Jang, D. & Jum Y. C. (2017) [Poultry industry of Bangladesh: entering a new phase](#). Korean Journal of Agricultural Science. Volume 44 Issue 2.

¹¹⁷ FAO & UNIDO (2019) [The Dairy and Beef Value Chain in Bangladesh](#). Draft Report. May.

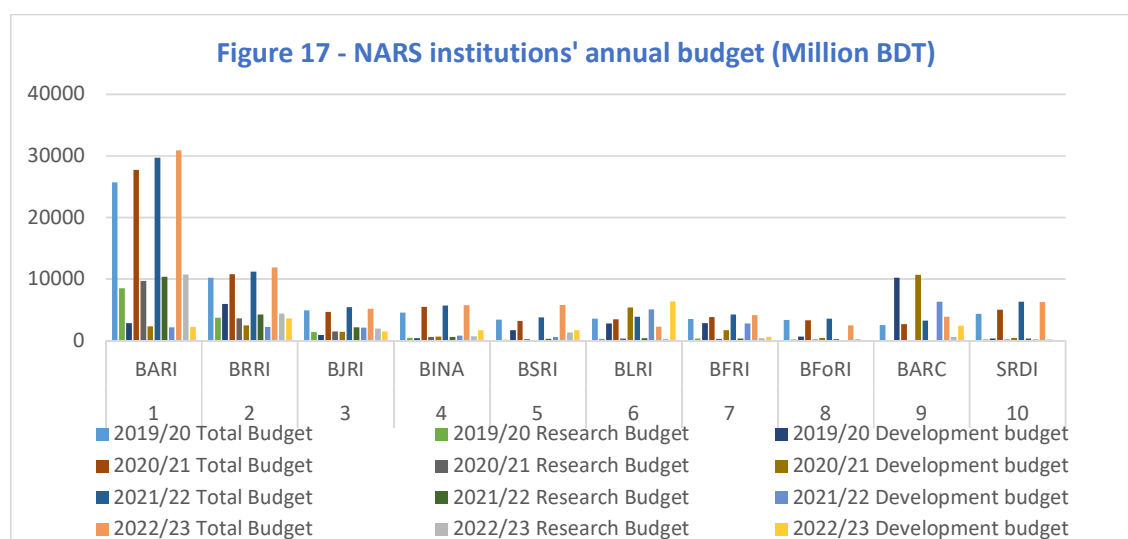
sometimes negative growth rate witnessed is likely to be explained by several factors: the drop in production of small-scale commercial poultry farms - accounting for 81% of commercial poultry farms - which were particularly affected by recurrent outbreaks of Highly Pathogenic Avian Influenza over the last 10 years¹¹⁸; and increase in feed prices which translated into higher production cost. For example, the cost of maize, which constitutes 55-60 % of poultry feed, rose from BDT 16.11 per kg in 2006 to BDT 19.46 per kg in 2018, although a 10% tax exemption in maize and soybean meal import helped dampen this rise in costs.¹¹⁹ The 500 million USD World Bank *Livestock and Dairy Development Project (LDDP, 2019-2023)* is likely to contribute to improving the productivity and sectoral value addition for this sector, especially for dairy and beef production.¹²⁰

Production of selected ethnic and regional foods crops increased

The production of selected ethnic and regional food crops has witnessed a significant increase, highlighting the growing popularity and demand for diverse culinary traditions and local food varieties. Tara sabji increased to 23353.5 to 25109 in 2022/23. Jhur/tan increased to 13.07 to 14.97 in 2022/23 and Dhumur increased to 9.27 to 10.12 in 2022/23. Ethnic and regional foods represent the rich cultural heritage and unique flavours of specific communities or geographical regions.

Budget allocations for public sector R&D on agriculture

The budget for agricultural research as a share of total agriculture budget increased slightly to 26.76% in 2022/23 from 26.27% in the previous year, and 23.07 in the baseline 2019/20. However, the annual budget for research institutes rose in the year under review BARC by 19.33%, BARI by 4.19%, BINA by 0.35%, BRRI by 5.90%, BSRI by 54.93%, whereas annual budget for research institutes declined in the year SRDI by 0.30%, BFRI by 29.50%, BLRI by 40.50%, BJRI by 4.74% and BForI by 29.50%. Since the onset of the CIP3 in 2019/20, the budgets of following institutes rose: BRRI (+19.67%), BINA (+39.64%), BSRI (+70.78%), BARI (+2.96%), BLRI (+18.79%) and the budgets of following institutes budget declined: BForI (-13.19%), BJRI (-21.88%), BFRI (-195.47%), BARC (-107.33%), and SRDI (-53.17%). The total budget of these institutions rose by 0.01%.



¹¹⁸Rimi, N.A., Hassan, M.Z., Chowdhury, S., Rahman, M., Sultana, R., Biswan, P.K., Debnath, N.C., Islam, S.K.S. & Ross, A.G. (2019) *A Decade of Avian Influenza in Bangladesh: Where Are We Now?* *Tropical Medicine and Infectious Disease*. 11.

¹¹⁹ The Financial Express (2018) *Poultry Feed Ingredients See Cut in Import Duty*. 8 June.

¹²⁰ World Bank (2018) *Project Appraisal Document Livestock and Dairy Development Project*. Report No: PAD2500.

The share of gender budget in the total Ministry of Agriculture (MoA) budget slightly increased

Gender budgeting, or gender-responsive budgeting, promotes gender equity by allocating specific budgets to women and men beneficiaries in projects/programmes. Bangladesh ranked 71 in the Global Gender Gap Report 2022, in 2020 Bangladesh ranked 120 leading by far the South Asian region where other countries' rank is beyond one hundred. The share of direct gender budget in the total MoA revised budget dramatically decreased to 3.37% in 2022/23 from previous year (8.99%) and it was the lowest ever since the CIP3 baseline period as direct gender budget. However, it was seen a gradual increase of the direct gender budget for MoA up to 2021/22 since 2019/20. Thus, several activities specifically targeted at recognizing and enhancing the role of women in agriculture was undertaken in the year under review. For example, credit facilities were provided to female farmers under the *Second Crop Diversification Project*. Concurrently, these beneficiaries were trained on how to manage their loan and become entrepreneurs. Under this same project, community groups were created comprising at least 30% of women and given the training to understand issues such as the functioning of commodity prices, to facilitate the marketing of their agricultural produce. The Department of Agricultural Extension (DAE) also trained over 300,000 women in technology of crop production, comprehensive pest management, post-harvest preservation and management of crops and marketing.¹²¹

The share of gender budget allocation over MoFL total budget tripled

The Direct Gender budget allocation in 2022-23 was the lowest since the CIP3 baseline 2019-20 except 2020/21. The share of the direct gender budget as of total MoFL revised budget reduced to 36.42% in 2022-23 from 40.63% in the previous year. This share was 40.47% in 2019-20 (CIP3 baseline). The government is playing a significant role for women empowerment through direct gender budgeting. In line with the efforts ministry MoFL is trying to uphold the recognize the role and potential of women in this field of agriculture. For example, the provision has been made in the national budget specific to this ministry to include at least a quarter of women as beneficiaries in various development projects as part of gender mainstreaming in fish cultivation and management.¹²² The increased participation of women empowers them and scales up their social position.

Number of people trained in rooftop gardening increased

Number of people trained in rooftop gardening increased to 5984 in 2022/23 that was 5498 in 2021/22. The number of people trained in rooftop gardening has experienced a significant increase, reflecting a growing interest in urban agriculture and sustainable food production. Rooftop gardening involves utilizing available rooftop spaces to cultivate plants, including vegetables, herbs, and fruits. The rise in training signifies a shift towards recognizing the potential of urban areas for food production, even in limited spaces. Training programs focus on equipping individuals with the knowledge and skills needed to set up and maintain rooftop gardens, including techniques for soil management, irrigation, and plant care.

The coverage of marine protected area are greatly decreased

Marine protected area are rapidly decreasing. The decreasing rate is 89.4%, which is a cause for concern for the conservation of marine ecosystems and biodiversity. Marine protected areas are

¹²¹ GoB (2020) [Budget 2020](#). Dhaka. Ministry of Finance.

¹²²GoB (2019) [Chapter 10: Ministry of Fisheries and Livestock](#). Bangladesh Budget. Dhaka. Ministry of Finance.

important tools for protecting marine habitats and species, and their decline threatens the health and sustainability of marine ecosystems. Marine protected areas are designated areas in which human activities are restricted or prohibited, with the aim of conserving and protecting marine ecosystems and biodiversity. However, the coverage of these areas has declined significantly in recent years, due to a range of factors including lack of political will, weak governance, and competing interests for marine resources.

Area of land affected by salinization slightly increased

Area of land affected by salinization increased to 1056260 hectare in 2022/23 from 105600 hectare in 2021/22 and in the baseline year 2019/20 it was 1030220. The area of land affected by salinization has witnessed a concerning increase, indicating a growing problem in agricultural and natural ecosystems. Salinization occurs when the salt content in soil and water accumulates to levels that are detrimental to plant growth and environmental health. Factors such as poor irrigation practices, excessive groundwater extraction, and climate change contribute to the expansion of salinized areas. The consequences of salinization include reduced crop productivity, loss of arable land, and damage to natural habitats. Efforts to mitigate salinization involve implementing sustainable irrigation techniques, improving drainage systems, and adopting salt-tolerant crop varieties. Addressing salinization is crucial for maintaining agricultural productivity, preserving ecosystems, and ensuring sustainable land use practices in affected regions.

Wetland and natural sanctuaries are also rare

Wetland areas and natural sanctuaries provide an ideal habitat for native species of animals and plants, and thereby contribute to preserving wildlife, biodiversity and the protection of endangered species. The limited expansion of such sanctuaries since before the CIP2 - by a mere 0.20 percentage points (in four years), to 2.1% in 2019/20, and the same amount of expansion (0.20 percentage points) caused in next year (2019/20), but remained unchanged (2.1%) in 2020/21 of all waterbodies- calls for renewed efforts in this regard.

The extent of coastal and marine area protection remains minimal

While relatively less developed than other regions of Bangladesh, disaster-prone coastal areas hold great potential in the access they have to marine and mangrove natural resources.¹²³ This could play a major role in supporting the livelihoods and food security of the relatively poorer local communities. Coastal areas' socio-economic systems are centred around fisheries. However, the scarcity of large-scale vessels restricts industrial fishing in the deep-sea area, consequently increasing the pressure of artisanal fishing operations in the continental near shore within 40m depth.¹²⁴ This has contributed to the deterioration of marine habitats, migratory routes, fish spawning and nurseries. **Out of the total 47,291 km² of the *coastal* zone in Bangladesh - or 32% of the country¹²⁵ - only 15.6% was marine protected area as of January 2022. This is still too low, as increased protection could contribute to sustainable coastal development which is essential to avoid over-exploitation of coastal ecosystems. As of 2021/22, out of the 118.8 thousand km² of

¹²³ IUCN (2015) [National Framework for Establishing and Managing Marine Protected Areas \(MPAs\) in Bangladesh](#). International Union for Conservation of Nature. Dhaka. Bangladesh Country Office.

¹²⁴ *Ibid.*

**UN (2022) *the government of Bangladesh announces new marine protected areas totalling about 8.8% of its Exclusive Economic Zone*

¹²⁵ Ahmad, H. (2019) [Bangladesh Coastal Zone Management Status and Future Trends](#). *Journal of Coastal Zone Management*.

marine areas of Bangladesh, only 6.02% was protected¹²⁶; this protected area is as same as was in previous two years, despite a 4.73% rise from 2019/20. The limited coastal and marine area protection reflects the emphasis on preserving the livelihoods of poor local fishermen communities over environmental conservation. However, protection of these areas falls within the preservation of the Bay of Bengal marine ecosystem and as such needs to be strengthened within a regional and transboundary perspective. To this end, the approval of the USD 15 million grant for the *Bay of Bengal Large Marine Ecosystem (BOBLME)* project by the Global Environmental Facility (GEF) and led by FAO (2018) was a positive achievement.¹²⁷ Bangladesh, fishermen often do not comply with the 65-days annual ban to protect spawning fish and rejuvenate fish stocks.¹²⁸

5.1.2.(b) Policy development, programmes and initiatives underway and further action

Assessment of current fish stocks and aquatic resources

The marine research vessel, Dr Fridtj of Nansen, carried out a survey in Bangladesh from 2 to 17 August 2018 to gather information on the current stock of fish and other aquatic resources which are feared to be overexploited. This supports the establishment of the maximum sustainable yield, the highest level at which a natural resource can be utilised up to its regeneration capacity. This vessel is a unique platform for knowledge generation and capacity development: it houses seven different laboratories packed with high tech equipment. This work was carried out as part of the EAF-Nansen programme titled *Supporting the Application of the Ecosystem Approach to Fisheries Management Considering Climate and Pollution Impacts* which is implemented by ERD, FAO and the Norwegian Institute for Marine Research (IMR).

Enhancing marine and coastal fisheries

The World Bank funded *Bangladesh Sustainable Coastal and Marine Fisheries Project (2019-2023)*, with a total budget of USD 281.60 million, aims to increase coastal and marine fisheries' contribution to the economy, poverty reduction, and environmental stability. This project has been revised with a closing date of June 30, 2025¹²⁹. It will achieve its target by enabling activities for sustainable fisheries sector investment and growth, improving infrastructure and production practices, empowering communities and developing livelihoods in 75 upazilas of 16 coastal districts spread over a geographical area of 43,291 km² inhabited by a total population of 33.77 million.¹³⁰ This piloting phase (2017-18) of this project successfully worked on enabling sustainable fisheries investment and growth and improvement of infrastructure and fisheries production practices.

¹²⁶ Chowdhury, H.A., Humayun, N.U.M. & Mondal, M.K. (2019) *Blue Economy: Department of Fisheries Initiatives in the Management of Marine Fisheries Resources*. National Fish Week 2019.

¹²⁷ thethirdpole.net (2018) *Eight countries come together to protect Bay of Bengal*. 4 July.

¹²⁸ thethirdpole.net (2020) *Lines on water cannot save Bay of Bengal fisheries*. 15 May.

¹²⁹ <https://projects.worldbank.org/en/projects-operations/project-detail/P161568>

¹³⁰ GoB (2018) *Sustainable Coastal and Marine Fisheries Program (SCMFP)*. Dhaka. Ministry of Fisheries and Livestock. In Bangla.

Incentivizing fish culture and capture

A 20-year master plan on *haor* development was approved in 2012, where 22 fishery projects were proposed accounting for USD 594 million to increase the culture and capture of fish production.¹³¹ To accelerate the achievement under this master plan, various ancillary initiatives have been taking place including the establishment of the *Haor and Char Development Institute* in 2018 to improve the individual capacities and thereby sustain *haor* agriculture development.¹³² To promote the production of capture fisheries, especially hilsa and shrimp, the government provides food incentives to around 0.4 million fishermen during the of 65 days fish harvesting ban. In addition, the government is continuing the waterbody re-excavation project accounting for USD 34.37 million in 229 *upazilas* under 53 districts to remove 7.66 million m³ soil. Further, the proposal for extension of this project until 2021 with an additional USD 51.56 million budget is underway in the Ministry of Planning.¹³³ The project was extended for the 2nd time up to June 2022 and the revised budget was fixed to Tk 4090 million (totally GoB funded) and the project area was extended to 349 *Upazilas* of 61 districts.

Promoting non-traditional aquaculture for export markets

Non-traditional forms of aquaculture are being developed in different parts of Bangladesh. For instance, the project on the *Adoption of Innovative Technology: Seed to fattening of mud crab (Scylla olivacea) and health management in Bangladesh condition (2018-2021)* explores the export market potential of crabs which offer good micronutrient density. Bangladesh Fisheries Research Institute (BFRI) also started the *Conservation, Propagation and Culture of Mussels and Snails (2017-2021) Project* aimed at developing an economically viable technology towards the culture of oysters and snails. A pearl culture development and extension project was conducted between 2012 and 2019, aiming to expand the technology to rural women, farmers and entrepreneurs. To promote emerging sectors with export potential including non-traditional aquaculture products such as eel and crab, since 2019, the GoB has started providing 10% cash incentive on selected items, in accordance with the export-led economic growth strategy of the country.¹³⁴ A sum of Tk 18.31 billion was released in favour of Bangladesh Bank to provide incentives/subsidies to the local exporters for the 1st quarter (July-September) of FY 2020-21.¹³⁵

Enhance management strategies associated with supplying quality fish seed

About 99% of the fish seeds are from the hatcheries. The fish seed value chain is multidirectional and interlinked, and intermediaries dominate the supply chain. Disease outbreaks and indiscriminate use of chemicals are major concerns in fish seed production¹³⁶. Management strategies such as the introduction of certification, training programs, technology transfer, access to credit, and implementation of the law could improve the quality and productivity of fish seed in Bangladesh.

¹³¹ DBHWD (2012) [Master Plan for Haor](#). Bangladesh Haor and Wetland Development Board. Bangladesh.

¹³² [Haor Institute](#), Bangladesh Agricultural University. Website under construction.

¹³³ GoB (2019) জলাশয় সংস্কারের মাধ্যমে মৎস্য উৎপাদন বৃদ্ধিপ্রকল্প

¹³⁴ Dhaka Tribune (2019) [What is cash incentives on exports](#). 17 June.

¹³⁵ Financial Express (2020). Tk 18.31b cash incentives for exporters. 22 July.

¹³⁶ Islam, M. R., Olowe, O. S., Mely, S. S., Hossain, M. A., Das, M., & Zaman, M. F. U. (2023). Review of the current situation, problems, and challenges in fish seed production and supply for Bangladesh's aquaculture development. *Aquatic Living Resources*, 36, 32.

Initiatives of overexploitation of marine fisheries

Marine culture is also at risk of increasing salinity and overfishing. According to FAO, globally, around a quarter of all fish stocks are overexploited and half of them are fully exploited. In Bangladesh, marine capture represents about 20% of total fish production. The floodplain and marine fisheries are under serious threat from overfishing. Overexploitation in the coastal region poses significant challenges on marine living resources and increases the dependency on distant water fishing in the long run. Already Bangladesh government imposes different fishing bans, such as Juvenile hilsa (Jatka) fishing ban, fishing ban on brood hilsa, fishing ban in the Bay of Bengal, Fishing ban in the Kaptai Lake, etc. Bangladesh is harvesting the positive result

Developing cluster models of shrimp farms

The Bangladesh Shrimp National Action Plan (BSNAP), which is underway, will enable DoF to promote modern production capabilities for black tiger shrimps (*bagda*) and advocate measures to ensure that export markets' safety and traceability requirements are met. To reach these objectives, this document proposes the introduction of a cluster farming model which consists in grouping shrimp farms who use common land resources for farming. By acting collectively, these clusters of farmers can receive a better price for their produce without the involvement of middlemen. DoF has planned three phases, the first ending in 2020 by which time 1,050 clusters comprising 26,250 farmers should be formed. By 2030, the end of the third phase, the number of clusters should be 2,075 clusters, with 51,875 farmers involved and 20,750 hectares of production sites.¹³⁷

Development of low-cost aquaculture feeding approaches

Keeping the price of fish feed low is a key challenge for cultured fish production in Bangladesh. Over the last decade, efforts have been made to develop a new low-cost feeding system that would allow farmers to profit while still guaranteeing consumer safety. The Wageningen University and World Fish have been trialling in Bangladesh (and Vietnam) a novel aquaculture feeding concept under the *Nutrition Pond Project (2014-2019)* that exploits pond ecosystems to encourage farmed fish and shrimp to ingest naturally occurring food (such as phytoplankton) alongside feed. While still a pilot, this system has the potential to reduce both production costs and environmental impacts.¹³⁸ The rice-fish system, which is promoted by some as a way around the scarcity of land and water resources, also allows farmers to use home waste and homemade feed such as waste rice as fish feed which can reduce the cost.¹³⁹

Registration of farmers and feed sellers

The feed industry has steadily grown because of increasing consumption of meat, eggs, and fish. Over 400 domestic mills are meeting up to 96% of annual poultry feed demand with the rest being met by imported feed or homemade feed-mix.¹⁴⁰ Half of these mills operate without registration which renders quality checks challenging. The DLS has therefore taken the initiative to bring all

¹³⁷ Holland, J. (2019) [Bangladesh seeks more buck for its 'bagda'](#). Global Aquaculture Alliance.

¹³⁸ Layzell, C. (2019) [Aquaculture in action: reducing the need for feed](#). *The Fish Site*. 24 January.

¹³⁹ Hayat, A. and Md. S. Islam (2017) [Integrated Rice-Fish Farming System in Bangladesh: An Ex-ante Value Chain Evaluation Framework](#). Integrated Rice-Fish Farming. In: Gatzweiler F., von Braun J. (eds) *Technological and Institutional Innovations for Marginalized Smallholders in Agricultural Development*. Springer, Cham.

¹⁴⁰ USDA (2019) [Gain report- Bangladesh Grain and Feed Annual 2019](#). BG 1903. USDA Foreign Agricultural Service.

poultry farmers and feed sellers under registration to try and ensure safe and good poultry farming practices for sound public health.¹⁴¹

Launching the largest livestock project in Bangladesh

The World Bank *Livestock and Dairy Development Project (LDDP)* was officially launched in December 2019 with the aim to improve climate-resilient productivity growth, enhance market access, and improve risk management among smallholder farmers and agro-entrepreneurs, by providing support for climate-smart production systems, farmer empowerment and commercialization.¹⁴² Under annual development programme, 19 development projects was implemented with a cost of 128.322¹⁴³ million USD to ensure the sustainable production of milk, meat and egg for achieving self-sufficiency along with creating employment opportunity, strengthening marketing system and value-addition of animal source products.

Conservation and improvement of livestock breeds

To enhance the climate resilience and sustainability in the livestock sector, a number of projects on the improvement of indigenous genetic stock (buffalo, goat and native cattle) were underway during 2018/19. In continuation with the first phase of *Buffalo Development Project (2010-2017)*, the second phase of the project was ended on 30 September 2023 with a total budget of 19.2 million USD to develop a highly productive and reproductive potential buffalo breed through insemination to increase milk and meat production. To the development of 25 suitable and effective technologies including new-generation vaccine seeds for identification and prevention and control of economically important zoonosis and transboundary zoonotic diseases, a BDT 150.42 crore project was initiated for the period of July 2019 to June 2024.

Livestock development in coastal areas

To increase the productivity of livestock in coastal and *char* areas bypassing the negative impacts of climate and utilizing the local genetic and feed resources, the government launched several development projects including the *Integrated Livestock Development Project in Char Land and the South-West region livestock development Project*.

Regulate fish-farming

Bangladesh is now the fifth-largest aquaculture producer in the world after the success in the introduction through state-run agricultural extension projects of intensive fish-farming in the early 1980s. This, however, has come at a price, and some blame intensive fish-farming such as the monoculture of tilapia or other carp species for the collapse of freshwater aquatic systems. Uncontrolled and extensive use of non-organic nutrients in agriculture and aquaculture threatens the quality of land and now also the Bay of Bengal, parts of which suffer from eutrophication¹⁴⁴ leaving ‘dead zones’ that affect marine fisheries too.¹⁴⁵ In addition to monitoring farming practices and the utilisation of land for fish farming, due attention needs to be paid on the assurance of the competitive quality of fish and feed, value addition and traceability of supply chain through updating the acts and rules in existing legislative documents.

¹⁴¹ The Independent (2019) [Steps taken to bring poultry farmers under registration. The Independent](#). 26 January.

¹⁴² World Bank (2018) *Livestock and Dairy Development Project*.

¹⁴³ GoB (2022) [Annual Report 2020-21](#). Dhaka. Department of Livestock Service. Ministry of Fisheries and Livestock

¹⁴⁴ Excessive richness of nutrients.

¹⁴⁵ Arju, Md. (2019) [Bangladesh's polluting fish farms](#). thethirdpole.net.

Promote intensive aquaculture production

Average pond aquaculture productivity is 5.3 ton/ha in Bangladesh¹⁴⁶, while Vietnam produces 20 ton/ha and 30 ton/ha without and with aeration, respectively.¹⁴⁷ There is, therefore, plenty of room for improving productivity in Bangladesh through mechanisation, for example, the use of RAS (Recirculating Aquaculture System), or biofloc technique of enhancing water quality through balancing carbon and nitrogen in the system. Intensive farming can further be promoted by ensuring low-cost and quality feed through increased domestic production of raw materials and/or bilateral import negotiations.

Finalise the policy framework for cage culture

Cage farming is gaining popularity with *rui*, *pangas*, *boal*, *magur*, *pholi*, butter catfish and *koi* now being farmed in nearly 10,000 cages in rivers. This is a recent phenomenon and there is much scope for further promoting cage culture in inland open and marine water in order to expand aquaculture production. However, in the absence of a legal framework defining user rights, this will be complicated. Thus, the DoF is drafting a policy to this effect which needs to be finalised.

Bring nutrient-dense and indigenous fish species into commercial culture

Conventional culture fisheries mostly grow the exotic (Indian carps, pangas, tilapia, etc.) and crossbred fishes. The preference for these fish species varies according to consumers, but the demand for nutrient-dense and indigenous species of fishes such as *gulsha*, *tengra*, *shing*, *koi*, *pabda*, *taki*, *shol*, eel, *mola*, *dhela*, *batasi*, *kachki*, *gutom* is constant and yields a premium price. These species are naturally rich in good quality protein, micronutrients and essential fatty acids, adaptive to local ecological conditions and respond to consumer preference with their traditional taste and flavour. Scaling up the production of these species and bringing them into processed and frozen forms could substantially boost the country's aquaculture production.

Research and development

R&D will be crucial to develop high yielding and resistant varieties of crops used as feeds such as maize and soybean. Helping to produce the raw materials used in feed will help Bangladesh become less reliant on imports and on fluctuations in international prices and changes in import and export policies. R&D will also help identify or further develop techniques of safe feed and fodder production at low cost and throughout the year thus minimising reliance on imports. This will include investigating the possibility and economic feasibility of using non-conventional feed resources and of recycling waste. Hydroponics fodder production may also be investigated as a way to respond to fodder needs during the rainy season, as well as salinity-resistant fodder. Methods to maximise the use of available feed resources such as agricultural and agro-industrial by-products, natural pastures and browse will be sought. Supplementation strategies to complement nutritional rapport of feed at affordable prices will also need to be developed. Research should also focus on improving the feed resources that many smallholders often produce themselves. Fodder conservation practices should be developed to enable a stable supply of feed throughout the year. Low-cost aquaculture feeding techniques that can also help to reduce environmental impacts will also be further developed.

¹⁴⁶GoB (2023) *Yearbook of Fisheries Statistics of Bangladesh*. Dhaka. Department of Fisheries. Ministry of Fisheries and Livestock.

¹⁴⁷ Seafood Trade (2014) [Intensive pond farming](#).

Reduce feed and health management costs in intensive farming

Low profit margins prevail in intensive livestock farming in Bangladesh. This can be attributed mainly to high feed costs (60-70% of total production cost) and herd health management costs.¹⁴⁸ Import dependency for feed ingredients contributes to feed price hikes, and the occurrence of emerging and re-emerging diseases including transboundary diseases gives rise to important treatment costs, especially in high yielding livestock farms because of poor adaptability. Policies to pre-negotiate imports and increase the production of local feed ingredients, to develop local vaccines and medicines, and to boost disease control capacities may contribute to the transformation of existing family farms into commercial farming. In the wake of the COVID-19 pandemic, guaranteeing affordable feed will be paramount especially as many farmers will need to recover from important losses and rebuild their business. Indeed, shortages in imported feed or medical supplies such as vaccines for example or limited services from veterinaries will have set back the industry on a large scale.¹⁴⁹ Collateral free loans with low interest rates may have to be adopted for several years, requiring a ‘specially subsidised input support allocation’ in annual government budgets.

Enabling the cooperative and farmer centre systems

Bangladesh Milk Producers’ Cooperative Union Limited (Milk Vita) has been a successful model of dairy producer’s cooperative since 1965. Further expansion of this model throughout the country has the potential to sustain the livelihood of milk producers and to boost the country’s dairy production towards self-sufficiency. Alternatively, farmer centre systems could be a viable option for dairy farmers to rent a space for their cows, cold chain storage facilities, access to inputs, veterinary services, machinery, market, price information and other services. To successfully support the establishment of these models it would be essential to ensure reaching out to successful cases applied globally of farmers organisations and farmers’ social networks, for instance, We Farm and Producers Direct.

Harness the opportunity of the Blue Economy

The verdict of the International Tribunal for the Law of the Sea on the Bangladesh-India-Myanmar maritime dispute in 2015 opened opportunities for the Blue Economy of Bangladesh with new rights of access on 200 nautical miles of deep-sea in the Bay of Bengal. Unfortunately, existing artisanal fishing is already over-exploited¹⁵⁰ with a presence of 68 thousand boats.¹⁵¹ Marine fishing in the artisanal area needs to be rationalised and the deep-sea area exploited to its full potential. Along with marine fishing, marine culture of seaweed and other macro-algae, mussels, oysters, marine pearls and sea cucumber are subsectors with potential for both growth and value addition. This can be achieved through due partnerships between the public and private sectors. Extending good practices is needed for the promotion of sustainable use of resources. The Blue Economy is a concept for the sustainable development of the ocean economy which requires a cross-sectoral approach for economic and sustainable development of the coastal region of Bangladesh. As such, the various ocean industries involved (tourism, ship breaking, fishing,

¹⁴⁸ UNIDO (2019) [The dairy and beef value chain in Bangladesh](#). Draft Report.

¹⁴⁹ FAO (2020) *FAO COVID-19 Rapid Assessment of Food and Nutrition Security in Bangladesh*. Dhaka.

¹⁵⁰ Islam, M.M., Shamsuzzaman, M.M., Mozumder, M.M.H., et al. (2017) [Exploitation and conservation of coastal and marine fisheries in Bangladesh: Do the fishery laws matter?](#) Marine Policy. Volume 76.

¹⁵¹ GoB (2019) *Yearbook of Fisheries Statistical of Bangladesh 2019*. Dhaka. Department of Fisheries. Ministry of Fisheries and Livestock.

marine agriculture, energy production) need to develop a holistic approach and common strategy for coastal and marine development.

Strengthening our blue economy

To maximise benefits from the vast sea, Bangladesh must take necessary pragmatic steps, backed by well-calibrated policy support defined jointly by close collaboration between public and private sectors to achieve a common goal of development and prosperity. This type of economy develops the ocean economy sustainably as its primary products are mining, ocean renewable energy, sea salt production, marine trade, shipping and transport, marine tourism, marine education and research, maritime surveillance, marine spatial planning, and many others.

To achieve a sustainable blue economy in Bangladesh, economic actors must establish an integrated business model that aligns with national and global developments. Investing in the ocean economy sectors and building capacity are crucial steps towards realising this potential. However, ensuring maritime security, preserving marine environments, conserving marine resources, and preventing marine pollution, piracy, trafficking and macro-terrorism are equally important. Luckily, modern combating systems have improved security. With extensive research, expert recruitment, investment and policy support, Bangladesh can leverage its existing marine science and biology institutions to achieve sustainable development goals and boost its economy¹⁵².

5.2 Progress towards outputs for NFNSP objective-2 and CIP3 pillar-2

5.2.1 Strategy 2.1 Improve market access and stabilize food markets

This strategy consists of 4 AoIs of NFNSP-PoA namely 2.1.1. Promote the establishment, improvement and management of post-harvest marketing infrastructure and processing facilities for horticultural products, pulses and legumes, livestock and fisheries, 2.1.2. Set up financial intermediation services with improved access to credit for rural markets along with other complementary services, 2.1.3. Maintain an orderly market management by securing property rights, regulating competition and stabilizing prices 2.1.4. Ensure trade liberalisation and facilitation to support the supply of quality food at all times.

It also covers 4 programmes of CIP3 namely Programme II.1. Efficient Food Value Chains (FVCs) through transport infrastructure, Programme II.2. Efficient FVCs through innovation and improvements in post-harvest management and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents, Programme II.3. Orderly market management by securing property rights, regulating competition and stabilizing prices, Programme II.4. Trade liberalisation and facilitation to support the supply of quality food at all times.

¹⁵² The Daily Star. (January 19, 2024). Blue economy for Bangladesh's sustainable development.

5.2.1 (a) Progress towards achievement

Table 17 - - Progress towards achievement of NFNSP Strategy 2.1 and CIP-3 program(II.1-II.4)

NFNSP-PoA & CIP3 Proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Upazilla and union road network in good and fair condition	38%	67%	75%	81%	LGED
Number of growth centres, rural markets, women market centres, and Union Parishad Complexes developed by LGED and DAM	335 LGED 93 DAM Total 428	205-LGED 96-DAM Total 301	180-LGED 96-DAM Total 276	180-LGED 93-DAM Total 273	LGED, DAM
Credit disbursed to agriculture as % of total credit	108.33%	97.03%	101.54%	106.55%	BBank
Number of markets regulated by DAM	949	977	977	977	DAM
Bangladesh's food trade (USD)		379,798,060			World Integrated Trade Solutions – Trade Statistics, Food
Bangladesh's food trade in South Asia (SAARC countries) as % of Bangladesh's total food trade		20%	45.11% Ex 43.90% Im		BBS
Food and beverages exported in million BDT	86099	104156	102856	56,31,729	BBS

The improvement of rural roads continued but is still off target

Improving rural road connectivity is crucial for fostering economic development. Recent advancements in this area have positively impacted both on-farm and off-farm rural income dynamics, facilitating employment generation and fostering small and medium business initiatives. Furthermore, enhanced rural road connectivity has simplified people's mobility to their destinations and goods transportation, playing a pivotal role in ensuring physical access to food and thereby supporting improved nutritional outcomes.

The development of rural markets and growth centers has led to improved marketing facilities for agricultural and non-agricultural products, offering farmers the opportunity to receive fair prices for their produce. While previously, the Local Government Engineering Department (LGED) primarily focused on constructing roads in rural areas, there has been a shift towards prioritizing road connectivity, which has significantly contributed to improved access to nutritious food. The condition of Upazilla and union road networks has shown improvement, reaching 81% in good and fair condition compared to the previous fiscal year and the reference period (Table 17). By the 2022/23 period, the Local Government Engineering Department (LGED) has successfully upgraded 34,131 kilometres of Upazilla roads, accounting for 92.96% of the total 36,712 kilometers, and 32,863 kilometers out of the total 41,880 kilometers of union roads have been paved across the country through various development projects. Furthermore, under the Gram Sorok-1 and Gram Sorok-2 projects, 39.51% and 21.25% respectively of the 133,681 kilometres of grameen road have been paved. Additionally, during the 2022-23 period, LGED has built a total of 603 bridges, with 60 of them spanning more than 100 kilometers in length, while the remaining bridges are shorter than 100 kilometers in length.

Development of growth centres and rural markets reduced over the previous year

In 2022-23, the number of growth centers, rural markets, women market centers, and Union Parishad complexes established by LGED remained unchanged from the previous year, matching the figures recorded in 2021-22. Conversely, the growth centers and rural markets developed by DAM decreased to 93 in 2022-23 from 96 in 2021-22, resulting in a reduction of three units compared to the previous year, bringing the total count to 273. While the establishment of new centers is undoubtedly significant, maintaining the quality of existing ones is equally crucial for ensuring the quality of perishable food products.

The development of growth centers and rural markets plays a pivotal role in securing food availability, particularly in developing nations. In these growth centers, farmers have the opportunity to access fair prices for a diverse range of food items. This improved access helps in stabilizing food prices and ensuring the availability of nutritious food for all. The establishment and maintenance of growth centers and rural markets are vital for enhancing market access, boosting farmers' incomes, constructing essential infrastructure, fostering economic diversification in rural areas, and supporting smallholder farmers. These initiatives collectively contribute to creating a more sustainable and resilient food system capable of withstanding various shocks while ensuring sufficient food availability and access for all segments of society.

Increased and more diversified food and beverage exports

Exporters of frozen and live fish, and agricultural food commodities registered a slump in their earnings in 2022-23 amid waning demand resulting from the economic slowdown in major markets such as Europe. The receipts from the shipment of frozen and live fish, including shrimp, fell 21 per cent year-on-year to \$422.28 million, according to data from the Bangladesh Bank. Shrimps accounted for three-fifths of export receipts from frozen and live fish in FY23.

Although Bangladesh posted a higher export growth in the just-concluded fiscal year on the back of garments and some non-traditional items, four major sectors as frozen and live fish, agricultural products, leather and leather footwear, and jute and jute goods suffered a fall, raising concerns for the economy and the employment sector.

Table-18: Export value (in million USD) of some food commodities

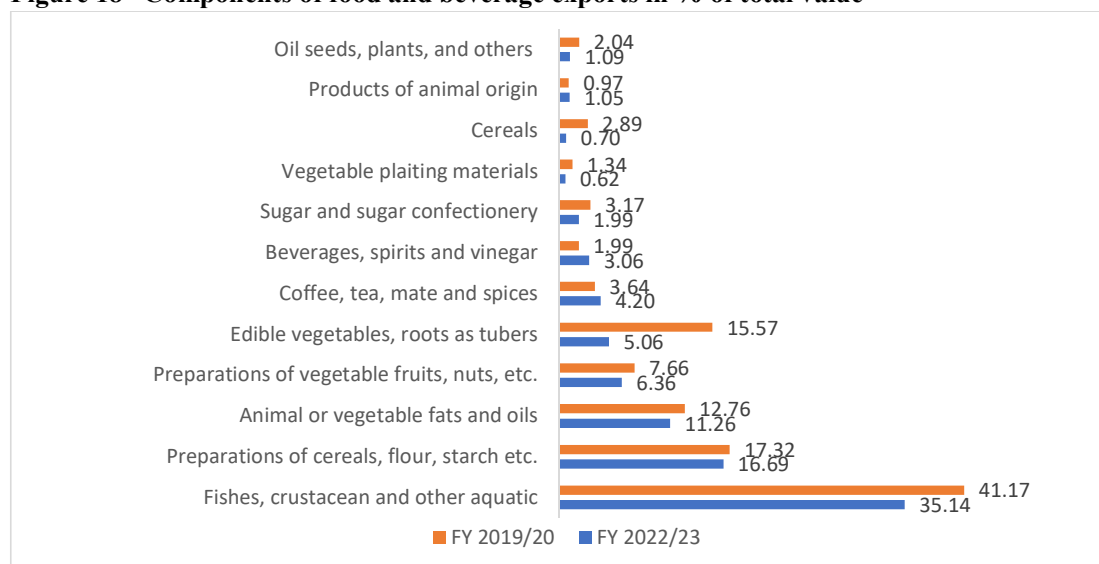
Food Items	2021-22	2022-23	Change (%)
Frozen and live fish	532.94	422.28	-21%
Fish	98.3	96.77	-2%
Shrimps	407.25	300.26	-26%
Others	27.39	25.28	-8%
Agricultural Products	1162.25	883.63	-24%
Vegetables	99.91	61.14	-39%
Tobacco	107.22	162.67	52%
Fruits and Flowers	5.37	1.05	-80%
Spices	39.66	42.38	7%
Dry Food	249.96	200.37	-20%
Others	660.13	375.42	-43%

Source: Bangladesh Bank, Commodity wise export shipments annual data

Food and beverage exports decreased by 14% from the previous year where the total export decrease was 16.93%. This was due to covid-19 pandemic. The decreased amount was BDT 16629.50 million. Fish, crustacean and other aquatic products continued to be the largest food group at 35.14% of total food and beverage exports down from 41.17% of the previous year (Figure 18). This was partially due to the waning international prices of shrimp and the weak competitive pricing of black shrimp – which registered a -7.89% in export earnings to USD 332.65 million in 2018/19, against the Vietnam shrimp.

In 2019/20, preparations of cereals, flour, and starch products represented the second largest exported food group (17.32%), followed by edible vegetables, roots, and tubers (BDT 13401.35 million, 15.57 %), which obese their share (from 7.5%) while increased in absolute value (up from BDT 8,375 million). The decline in the shares of the previous food groups was offset by an increased share of cereals (2.9%), animal and vegetable fat (12.76%), and sugar (3.17%) (Figure 18). The GoB plans to increase agro-processing exports to BDT 170 billion (5% of the total export value) by 2021 by creating a conducive environment of agro-processing exporters. However, reaching this target may be hampered as a result of the COVID-19 pandemic.

Figure 18– Components of food and beverage exports in % of total value



Source: Data from BBS Foreign Trade Statistics.

Among agricultural products, only three items -- tea, tobacco and spices -- posted growth in export earnings. Receipts from the rest, including dry foods, suffered a decline. Ban on the shipment of aromatic rice may has negatively affected the overall export earnings from agricultural products. On the other hand, higher air freight costs, and higher production costs defend agricultural production at competitive price.

Agriculture Credit Disburse Increased

The agriculture credit data provided in the table 15 shows an increasing trend with some fluctuations over the four-year period from 2019/20 to 2022/23.

In the base year in 2019/20, disbursed agriculture credit was much higher i.e. 108.33% than its targeted amount which decreased to 97% in the next fiscal year. In 2021/22, the percentage increased again and continued to 2022/23 at 106.55% of its target. This indicates a significant

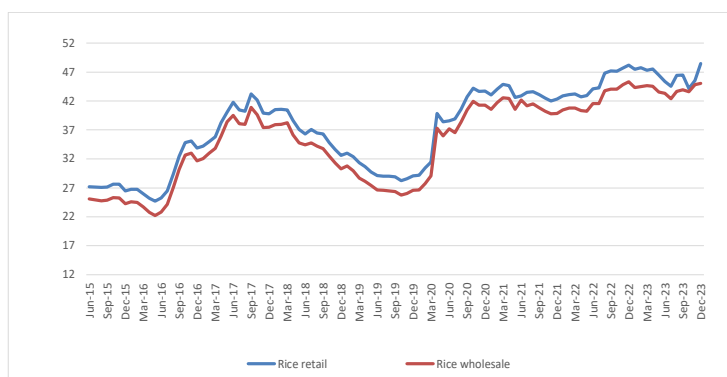
surge in credit provision, due to various factors such as government initiatives, increased demand, and improved accessibility to credit facilities.

Agricultural credit plays a crucial role in the economic development of Bangladesh. There a positive relationship between agriculture credit and agriculture productivity in which indicates that increased access to credit enables farmers to invest in better farming practices, such as purchasing high-quality seeds, fertilizers, and modern equipment, leading to higher yields and overall productivity in the agricultural sector. Thus, it has a significant positive impact on the gross domestic product (GDP). This implies that by providing sufficient credit to farmers, Bangladesh can stimulate growth in the agriculture sector, which in turn contributes to overall economic growth. Increased access to agricultural credit can facilitate rural development by enabling farmers to invest in infrastructure, such as irrigation systems and storage facilities, thereby improving agricultural practices and livelihoods in rural areas. This allows farmers, particularly smallholders and marginalized communities, to participate more actively in the formal financial system. This promotes financial inclusion and empowers farmers by providing them with resources to invest in their farms, increase productivity, and ultimately improve their socio-economic status.

Providing agricultural credit to smallholder farmers can help reduce income disparities by enabling them to expand their operations, increase productivity, and generate higher incomes. This can contribute to poverty alleviation and improve the overall standard of living in rural communities. It also helps farmers mitigate risks associated with agricultural production, such as crop failure due to adverse weather conditions or pest infestations. By providing financial resources, credit enables farmers to adopt risk management strategies, such as diversifying crops or investing in insurance, thereby enhancing resilience to external shocks. Policymakers should continue to prioritize initiatives aimed at increasing access to credit for farmers, particularly smallholders, to unlock the full potential of the agricultural sector and contribute to sustainable development goals.

Farm gate-retail price differences widened, except for green chilli (data need

Figure 19 - Retail and wholesale rice price (nominal)



The difference between farm gate and retail prices is a measure of the value addition which farmers are able to capture from the value chain in relation to the other agents operating along the value chains. From all the monitored food commodities, it increased for coarse rice, lentil and brinjal whereas decreased for onion, potato and green chilli in 2020/21. Year-on-year differences between

farm gate-retail prices widened for coarse rice (+12.49 percentage points), lentils (+ 11.34 percentage points), and brinjal (+ 1.95 percentage points) may be due to lockdown situation along with disrupted transportation system for covid pandemic. Onion registered a massive decrease from the previous FY by 96.92 percentage points, which was probably due to the surge in its domestic price transmitted from India (increasing since the end of the 2018/19 financial year). In the 2020/21 FY, this difference minimizes to 114.13 percentage points may be due to the current stable market situation.

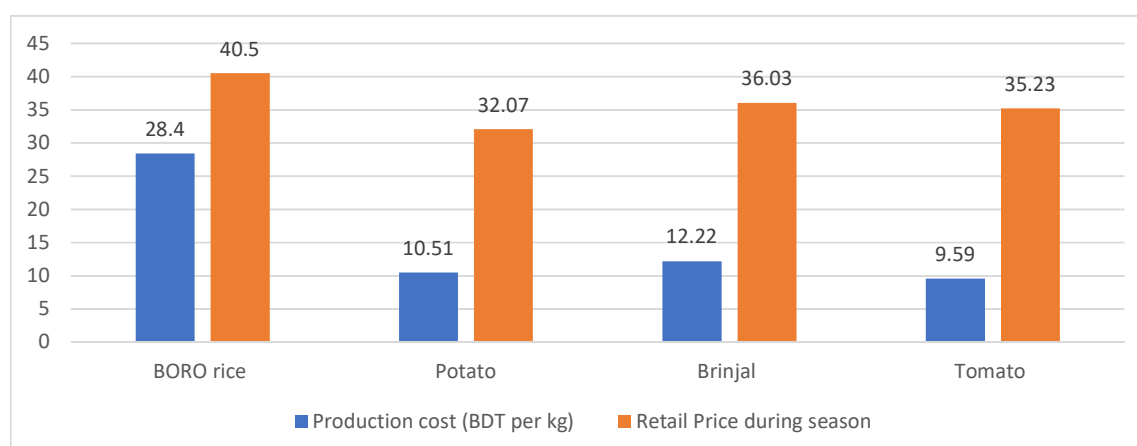
Farm gate-retail price difference for lentils also increased compared to the previous year due to high transportation cost. In the case of potato, the differences decreases in 2020/21. There was an increasing trend over the period of 2019/20 from the baseline year that suggests that farmers progressively lower margins compared to other agents, exacerbated by some inefficiencies in the marketing systems, such as growers' illiteracy and lack of information on price, and syndicate system of intermediaries. Besides, shortage of preservation and processing in facilities in local areas induced higher farmgate retail price gap. However, in 2020/21, the differences decrease significantly to 19.59%, which is 27.85 percentage points lower from the FY 2019/20. Over 11 million tons of potatoes production due to the cultivation in more lands in 2021 might contribute to this. For coarse rice, the increase in wholesale-retail price gap over the period from the baseline year to 2020/21 may be due to production, import decisions and rice procurement volume at the government level and Syndicate of rice market intermediaries (Figure-19).

Table 18 presents the price transmission dynamics in the value chains of brinjal, potato and tomato. Among the various agents, farmers obtain the lowest profit while retailers receive the highest. In 2022, Tomato value chain has been producing the largest margins, closely followed by brinjal with potato lagging behind. The production cost of some agricultural commodities is calculated by DAM based on one acre of land of production (Figure 20). While the production cost of garlic is the highest among the selected crops at BDT 30.87 per kg, with its average retail price is 91.21 BDT per kg. The production cost of onion is BDT 19.24 per kg and the seasonal average retail price is BDT 50.24 per kg. The production cost of boro rice is amongst the highest (BDT 26.01 per kg) and its retail price is 27.26 per kg. However, the production cost of cucumber is BDT 9.52 per kg that is the lowest among those analysed but its average retail price is 38.51 per kg.

Table 19. Price transmission (in BDT) in the value chain of brinjal, potato and tomato (2022/23)

Agent	Brinjal			Potato			Tomato		
	Production cost/ Purchase Price	Sale price	Gross profit	Production cost/ Purchase Price	Sale price	Gross profit	Production cost/ Purchase Price	Sale price	Gross profit
Farmer	12.22	17.85	52.663	10.51	14.93	47.433	9.59	18.50	8.26
Local Trader	19.71	19.91	9.29	14.00	16.90	2.00	17.63	20.38	20.37
Wholesale	29.00	27.57	1.00	16.00	23.66	0.25	38	27.20	1.00
Retailer	30.00	36.03	7.00	16.25	32.07	2.75	39	35.23	10.00
Consumer	37.00	--		32.07	-	-	35.23	-	-

Figure 20 - Production cost (BDT per kg) and retail price of selected crops



Source: Data from DAM Annual Report 2022-23 and [DAM website](#)

Establishing a favourable policy and technical support to food processing

Agricultural food processing plays a critical role in enhancing food security through various means like Increased Shelf Life and Reduced Food Loss, Value Addition and Income Generation, Diversification of Products and Markets, Strengthening the Value Chain, Ensuring Food Safety and Quality, Negotiating Fair Prices and so on. Thus it strengthens the resilience of the food system and contributes to sustainable agricultural development.

The Ministry of Industry is actively promoting agro-food processing. In line with this initiative, it has formulated the SME Policy 2019 to bolster the development of small and medium enterprises. Additionally, the Ministry has also introduced the Agro-Food Processing Promotion Policy 2021 to provide support to small industries in this sector. In line with the policy, a special innovative idea in 2022-23 has been developed to establish an online platform for the SMI cluster entrepreneurs so that marketing of their products can be expanded. For encouraging the small and medium entrepreneurs, a project on processing of agricultural products including pineapple in Madhupur is ongoing. BCIC Food Processing Industrial City Thakurgaon has been implementing from July 2021, will be continuing until June 2024.

SMI Foundation identified 177 clusters and is providing developing activities to enhance the small and medium industry clusters. With the joint initiatives by SMI Foundation and a2i One Stop Service Centres has been inaugurated and One Stop Business Advisory Service Centre Onnessha is ongoing.

The present Awamligue Government has emphasized agro-processing as adopted in their Election Manifesto 2024. The Ministry of Agriculture has initiated the Agriculture Mechanization and Agro-processing Help Desk aiming to increase export of agricultural processed food and reducing postharvest loss, enhancing agro-processing activities and extending postharvest technology to end-users. Furthermore, employment generation is one of the vital objectives of this initiative. Similarly, fisheries and livestock production increase through processing, value addition and marketing are going on. The ministry has been providing training on safe fisheries and livestock products processing and marketing.

The Hortex Foundation of MoA and Bangladesh Fruits, Vegetables and Allied Products Exporting Association (BFVAPEA) provide primary producers and exporters with support for compliance with regulatory standards of the importing countries. Hortex Foundation also partnered with BAPA and provided technical supports to the association working for fostering food processing industry in the country. The BFVAPEA facilitates the production of high quality and safe fruits and vegetables through contract growers for export purposes. The BFVAPEA has its usual activities of regional workshop on capacity development of the small entrepreneurs, for agro-processing and exports.

Modernised quality and safety standards and monitoring and surveillance by the regulatory authority

BFSA produced some important regulations i.e. Food Safety (Food Hygiene) Regulations 2018, Food Safety (Food Contact Materials) Regulations 2019, Food Trader's Obligations Regulations-2020, Safe Food (Protection of Healthy Environment) Regulations 2018, under the Food Safety Act 2013. Moreover, BFSA has drafted some other rules as (i) Safe Food (Withdrawal) Regulations, 2020, (ii) Safe Food (Control of Microbial Contaminants) Regulations 2021, (iii) Safe Food (Restaurant) Regulations 2021, (iv) Control of Trans Fatty Acids in Foodstuffs Regulations, 2021 and (v) Safe Food (Advertising) Regulations, 2021. BFSA also increased its analytical capacity by installing a modern Mobile Food Testing Laboratory. Besides, BFSA has installed "Najor" app to implement the monitoring activities of food processing areas of hotels and restaurants through online app and until 2021, it is conducting monitoring on six restaurants in Dhaka city. The Bangladesh Standards and Testing Institution (BSTI) has increased monitoring and surveillance in storage, processing industries and the market for quality control of mandatory processed food products (cereal products, oilseed products, dairy products, fruits and vegetable products, spices and condiments, etc.). BSTI also revised Bangladesh Standards (BDS) on pasteurized milk, poultry feed, chip-crackers, *lachcha-semai* with up-to-date scientific information. In 2020/21, BSTI has tested 28016 number of Food Commodities, Organic Commodities and Inorganic Commodities (Annual Report of BSTI 2020/21).

Promoting nutrition-dense and export-oriented value chains

The MoA has been implementing the *Smallholder Agricultural Competitiveness Programme (SACP-2018-2024)* and working with 225,000 farmers who engaged in production, primary processing and value addition of high-value crops. It targets the cultivation of high-value crops such as cereal, fruit and vegetable, pulse and oil crops for farmers to increase their revenues and profits. Scaling up underutilized local fruits and vegetables is especially relevant in this regard, with a need for promoting their greater use in local food systems and not only targeting high-value export chains but leveraging the nutritional benefits for local consumers. Proper post-harvest management is critical as it enhances the quality, nutritional and economic value of crops while reducing different types of loss. This includes innovations made in the packaging sector. For example, newly designed packaging materials for sugars and sugar-cubes have been developed at the Carew & Co., the State-owned only distillery in Bangladesh located inside the Darsana Sugar Mill compound and under the authority of Bangladesh Sugar and Food Industries Corporation. Bangladesh Good Agriculture Practice Policy 2020 has been formulated and the National Agricultural Marketing policy is under preparation.

5.2.1 (b) Needs for further actions under this programme

Strengthen product certification to ensure quality and safety

Although the export-oriented large-scale food processing industries have quality and safety certification (GMP, GHP, HACCP, ISO 22000:2005, etc.), certified farms for the primary producer (e.g. GAP and ASEAN Good Aquaculture Practices (ASEAN GAqP) are almost absent in Bangladesh. Therefore, steps to be taken to bring the primary producers and MSMEs under various certification schemes to assure product quality and safety for the domestic and export markets. The Bangladesh Agricultural Certification Body (BACB) has been established to provide Bangladesh GAP Certificate but yet to start functionality.

Increase the competitive environment for agro-processing to boost exports

Bangladesh's agro-processing sector is a 3.2 billion USD industry as per annual turnover. Export earnings of agro-processing companies are growing: BAPA reported a record 700 million USD total export earnings in 2018/19, up 10.24% over the previous year. Exports of processed food items declined substantially so far this fiscal year (FY) due to higher operating costs and raw material prices than the competitors.

The total export earnings of the country increased 14.12 percent to US\$ 45,367 million in the fiscal year 2020-21 as compared to previous FY 2019-20, according to the Export Promotion Bureau (EPB). Besides, the share of agri products export earning is 2.65% of the total earnings during the FY 2020-21.

Creating an enabling environment with, for example, the provision of incentives, especially by way of soft credit, or continued tax exemption and cash incentives can boost this sector. Credit collaterals need to be easier for new or small entrepreneurs; such as equipment-based credit instead of asset-based collateral. Export opportunities in global markets can only be exploited through long-term planning with an emphasis on market research, product adaptation and assurance of rigorous compliance requirements. Market research provides information on product needs and changes in consumers' tastes and preferences, and on compliance requirements of importing countries. In addition to processed food, fresh horticultural produce, especially fruits and vegetables, are exported particularly to countries with a large Bengali diaspora. Exports activities need to be automated so that all activities can be done in one stop platform. To access mainstream export markets exporters must comply with the rigorous compliance requirements of importing countries. Primary producers and MSMEs require technical and financial support to adopt improved practices throughout the supply chain (GAP, GMP, GHP, HACCP, etc.) to assure product quality and safety for domestic and export purposes. ISO 22000, for instance, facilitates border crossing of products so as to bring people food that they can trust.

Explore block chain as a mean to ensuring traceability of nutrient-rich foods

Establishing block chain is a future need for NSVC management. Block chain is a decentralised, distributed and public digital ledger that is used to record transactions across many computers so that the record cannot be altered without the agreement and active involvement of everyone in the network. Transactions can be viewed simultaneously and in real-time, with both greater security and transparency. However, there are many barriers and challenges that hinder its wider popularity among producers and systems. The challenges involve technical aspects, education, policies and regulatory frameworks. High-speed internet service and devices are crucial for chain management through efficiently linking the postharvest operations and the value chain actors.

Food value chain covers activities and participants involved in moving food products from the growers to the consumers. Participants in this chain need financing to carry out their activities. MSMEs generally turn to traditional financing institutions, rural producers, processors and retailers, whereas large companies receive resources from banks. In India, some commercial banks have invested in acquiring knowledge about domestic agricultural markets to identify unmet financial needs that they can serve. The strategy used to cater to this clientele segment leverages on digital technology to ensure these services are more convenient to clients, in addition to having low operation costs. Digital technology can also be tailored to fit unique transactions that take place in agricultural value chain segments. In addition, it allows the recording of a transaction history, which can then be used for the development of additional rural financial services.

Innovate in packaging and storage

Improved packaging is a must for prolonged shelf life, retained quality and safety of food. There is a strong correlation between foods with the highest percentage of wastage and the least amount of packaging. There is a lack of improved packaging, especially for perishables in Bangladesh although large-scale food processors are increasingly engaged in packaging innovation, ranging from the materials used to technologies that can help reduce contamination of packaged foods on the assembly line. But more research is needed to understand what the most effective packaging approaches and technologies might be, such as passive technologies, or active and intelligent packaging through chemical or biological agents to prevent food spoilage. Any new food packaging introduced must be of food-grade and approved by food safety standards and regulations. Proper labelling also needs to be assured. Food items have an array of date labels that cause consumers to be wary of buying or consuming food such as: ‘best before’, ‘use by’, ‘sell by’ and ‘expiry’. However, labelling needs to abide by the recently promulgated Packaged Food Labelling Regulations 2017 of BFSA.

5.2.2 Strategy 2.2: Improve value chain and marketing systems

This strategy consists of 5 AoIs of NFNSP-PoA namely 2.2.1. Stimulate innovation-led efficiency gains in food value chains by shortening the chain, improving cooperation among agents, and by reducing food losses and waste, 2.2.2. Encourage and support the establishment and growth of financially viable MSMEs, 2.2.3. Create an enabling environment to attract private investment in infrastructure, processing, value addition, marketing and eliminate business barriers, 2.2.4. Promote inclusive cooperative/group-based processing and marketing, 2.2.5. Strengthen ICT-based market information system to provide real time support to farmers. It also covers 3 programmes of CIP3 namely Programme II.1. Efficient Food Value Chains (FVCs) through transport infrastructure, Programme II.2. Efficient FVCs through innovation and improvements in post-harvest management and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents, Programme II.3. Orderly market management by securing property rights, regulating competition and stabilizing prices.

5.2.2 (a) Progress towards achievement

Table 20 - Progress towards achievement of NFNSP Strategy 2.2 and CIP-3 program(II.5-II.7)

NFNSP-PoA & CIP3 Proxy indicators	2019/20 Baseline	2020/21	2021/22	2022-23	Source
Capacity of cold storage available (in thousand MT) • total volume/ capacity (m ton) • number of storages/ units	N/A	7,050,000 396	7,050,000 396	7055000 397	DAE
Actual disbursement of agricultural loan in billion BDT (share of its target)	227.5 (94%)	255.10 (97.03%)	288.30 (101.54%)	328.30 (106.55%)	BB Annual Report 2021-22
Number of Micro, Small and Medium Enterprises (MSME)	16770 micro 23306 small 3178 medium	16770 micro 23306 small 3178 medium	16770 micro 23306 small 3178 medium	16770 micro 23306 small 3178 medium 2878 large	BBS (SMI Survey)
Number of food processors (and n. of applications pending)	344 (45)	363 (50)	448 (250)	640	BAPA/SME Foundation
% of households with access to electricity	96.2%		99.34%	99.34%	HIES,BBS
Number of agricultural marketing groups (DAM)	1380	2750	3000	3133	DAM

Cold storage number and capacity remained same as the previous year

Cold storage facilities enable the preservation of perishable foods such as fruits and vegetables, reducing post-harvest losses due to spoilage. This helps in optimizing food supply chains, more stable food supply, reducing food losses, which is essential for ensuring food security at both national and household level.

Proper storage conditions maintained by cold storage facilities help in preserving the nutritional quality, flavor, and freshness of fruits and vegetables, thereby meeting consumer preferences and quality standards.

Cold storage allows producers to store surplus produce during times of high supply and sell them during periods of low supply. This extends the market reach of farmers and ensures a more consistent income stream.

Instead of witnessing significant growth, the development of cold storage facilities in Bangladesh remains sluggish. From 2021/22 to 2022/23, the number of cold storage units increased by only one, bringing the total to 397. Although the capacity increased by 5000 MT to reach 7055 MT, this growth represents a substantial increase from the base year's capacity of 4000 MMT.

In an effort to combat the spoilage of vast quantities of food commodities, the government has initiated a project to establish 500 zero-energy cool chambers (ZECC) on the premises of 500 selected farmers across 31 districts over the next five years. As of 2020-21, 104 zero-energy cool chambers have already been established.

Starting from July 2021, a Tomato Preservation, Processing, and Marketing Development program has been launched in Rangpur, Dinajpur, and Panchagarh districts, aiming to establish 10 tomato processing units.

Another project, the Modernization of Onion and Garlic Preservation Systems at the Farmer Level, has been underway since July 2021. Under this initiative, 300 specialized houses with storage facilities for onion and garlic are being constructed. Additionally, by July 2026, 450 model houses will be built using local technology to facilitate potato preservation.

The government can provide subsidies, grants, or low-interest loans to encourage private investment in cold storage infrastructure, especially in underserved areas. Invest in improving transportation infrastructure, including roads and refrigerated transport, to facilitate the distribution of produce from farms to cold storage facilities and markets is crucial.

Number of Micro, Small and Medium Enterprises (MSME)

The SMI Survey 2019 assessed that accumulated number of manufacturing establishments in the country is 46,110 where around 50% (23306) are the small type industry. Other 3 types industries are Micro, Medium and Large scale industries that holds the figure of 16770, 3178 and 2878 respectively. Total employee engaged in these 3 types of industries is 1.8 million which is approximately 33% of the total persons engaged in manufacturing industries.

Number of Agriculture Marketing Group

There are several agricultural marketing groups and organizations operating in Bangladesh.

1. Department of Agriculture Marketing (DAM): DAM is a government-owned agency responsible for the development and regulation of agricultural marketing in Bangladesh. It operates various markets, cold storage facilities, and provides support services to farmers and traders. DAM has formed the Agriculture Marketing Groups (AMG) under different projects aiming to enhance the bargaining power of the farmers and ensure fair price for the agricultural products. The members of these groups are provided training to enhance their processing and marketing capacity as well as value addition. Also some logistics like tray, triple, hygrometer, digital weight machine, knife sensor are provided to some selective farmers who are engaged with processing and marketing of their products. To ensure the safety measures farmers are advised to use hand gloves that are also supplied by DAM.

Under the close patronize AMGs are increasing every year. In 2022/23, the number reached at 3133, which is, 4.43% increase comparing to previous year and the number more than doubled than the base year. DAM is acting intermediary role to establish linkages between the farmers and traders. Thus, marketing facilities of the small holding farmers are being established.

2. Bangladesh Agricultural Development Corporation (BADC): BADC is another government organization involved in agricultural development in Bangladesh. While not exclusively focused on marketing, it plays a significant role in promoting agricultural products and facilitating marketing activities.

3. Bangladesh Agro-Processors' Association (BAPA):

BAPA is a private sector association representing agro-processing industries in Bangladesh. While its primary focus is on processing, it also works on marketing aspects of agricultural products. Under careful supervision, guidance, and support, there has been a gradual increase in

food processing and marketing activities. However, this progress has been significantly impacted by the COVID-19 pandemic and global unrest resulting from the Ukraine-Russia war.

Table-21: Number of Agro Food Processing Industries

Number of Agro Food Processing Industries	Before 2019-20	2019-20	2020-21	2021-22	2022-23	Total
Small	270	9	13	8	14	44
Medium	85	1	3	4	6	14
Large	195	13	5	4	10	32
Total Industry	550+90=640	23	21	16	30	90
	Total: Ton- & Value-(Million \$)	Total: Ton - & Value-(Million \$)	Total: Ton - & Value-(Million \$)	Total: Ton - & Value-(Million \$)	Total: Ton - & Value-(Million \$)	Total: Ton - & Value-(Million \$)
Processed Food Commodities (quant.)						
Export Food Commodities	Quantity:12,43,018 Value: 1656	Quantity: 263492 Value: 406	Quantity: 276603 Value:426	Quantity: 294525 Value: 452	Quantity: 243241 Value: 460	Quantity: 257254 Value:426

Source: BAPA

1. ****Bangladesh Agribusiness Association (BAA)**:**
2. BAA is an association that promotes agribusiness activities in Bangladesh. It works on various aspects of agriculture, including marketing, and provides support to agribusinesses.
3. ****Bangladesh Fruits, Vegetables & Allied Products Exporters Association (BFVAPEA)**:**

BFVAPEA is an association representing exporters of fruits, vegetables, and related products from Bangladesh. While its main focus is on exports, it plays a role in promoting marketing activities domestically as well.

These organizations may vary in their specific focuses and roles within the agricultural marketing sector. For more detailed information and current updates, I recommend reaching out to these organizations directly or consulting recent sources for the latest developments in Bangladesh's agricultural marketing landscape.

Households access to electricity:

The role of sustainable, reliable and cost effective power generation and supply is immense for sustaining the sustainable growth of GDP and growing economy of the country. After implementation of various power plans adopted by the government, the install capacity of the country has been increased to 23,482 MW in FY 2022-23 till January 2023, which stands at 26,700 MW including captive and renewable energy. Out of this capacity, the maximum generation yet so far was 14,782 MW on 16 April 2022. Total net electricity production was 85,607 million kilowatt-hours in FY 2021-22 and in the first six months of FY 2022-23 up to December 2022

total net electricity production stood at 44,633 million kilowatt-hours. Out of total net generation, 39.89 percent power was generated by public sector, 42.26 percent power from private sector, 7.83 percent from joint venture and 10.02 percent from power import. In addition, total system loss of transmission and distribution of electricity substantially declined to 9.30 percent in FY 2022-23 up to December 2022 from 14.73 percent in FY 2010-11. At present, the total distribution line is 6.29 lakh kilometer and total consumer is 4.45 crore. Government has brought all the citizens under 100 percent electricity facility in 2021. According to Power System Master Plan (PSMP) 2016, the government has set a target to increase installed electricity generation capacity to 40,000 MW by 2030 and 60,000 MW by 2041. (ER-2023)

The Key Findings of the HIES 2022 discloses that 99.34% households have access to electricity (National Grid/Solar electricity) in Bangladesh. In rural areas this rate is 99.14% and 99.78% in urban areas. This is a big improve in the access of electricity which is the key for overall development of the country.

Table 22: Access to electricity: HIES 2022, HIES 2016 and HIES 2010 by residence

	National	Rural	Urban
HIES 2022	99.34	99.14	99.78
HIES 2016	75.92	68.15	94.01
HIES 2010	55.26	42.49	90.10

Source: HIES 22 Key Findings The Eight Five Year Plan continuous the path of electricity generation that was prioritized during 6th and 7th Five Year Plan with increased focus on energy efficiency gain. The rapid development of the energy sector during the 6th and 7FYP periods played a catalytic and enabling role in this, helping move forward the industrialization agenda. Bangladesh has been achieved the SDG indicator 7.1.1 which is Ensure access to electricity for 100% population. NPT 20 [HYPERLINK "http://sdg.gov.bd/page/indicator-wise/5/442/3/0"](http://sdg.gov.bd/page/indicator-wise/5/442/3/0) [HYPERLINK "http://sdg.gov.bd/page/indicator-wise/5/442/3/0"](http://sdg.gov.bd/page/indicator-wise/5/442/3/0) Increase renewable energy share in total final energy consumption to 10% (SDG Indicator)

Population owing a mobile phone:

Access to ICT, and cell phone connectivity in rural areas are being expanded which is helping improved access to market information for the poor and vulnerable population. Rural farmers are using mobile phone to know the daily price of their products in urban markets. Thus the small holding farmers are getting financial benefit from mobile phone. Mobile phone owners in rural area are climbing rapidly. Bangladesh Sample Vital Statistics 2023 (BSVS) disclosed that as much as 74.2 percent of people in survey area were reported to be owners of mobile phone whereas in rural areas user of mobile phones are 69% in 2019/20. The “Access and Use of ICT by the Households and Individuals 2022” disclosed that 89.9% of the individuals are using mobile phone. Although current data is not available it is assumed that mobile phone users in rural areas are increasing parallel with urban users. The government is working to make digital and mobile financial services more effective in financial inclusion of poor and marginalized groups, supporting small business holders and addressing gender disparity.

The number of Digital Centres increased

With the establishment of over 9394 Digital Centres countrywide, the average distance that rural citizens need to travel to access government services has come down to a walking distance,

approximately 4 km. Digital Centres are one-stop shops that ensure that the underserved, such as women living in remote rural areas, people with disabilities and the elderly, regardless of their literacy and ICT knowledge, can access vital services. Each Digital Centre is located in a government office at the village level but run by two citizen entrepreneurs – one male and one female, to cater to the needs of women in conservative rural Bangladesh. They are not formally appointed as government employees and do not receive salaries or compensation in any form from the government. 16,800 Digital Centre Entrepreneurs, over 5,300 of whom are women, charge money for the provision of popular private services which cross subsidizes the free of cost provision of government services. These one-stop shops thus represent a novel public-private partnership between public agencies, private sector companies and the Digital Centre Entrepreneurs – effectively establishing a microenterprise in grassroots level government offices – that allow the amalgamation of over 387 public and private services.

To reduce the gap and develop an efficient ecosystem for the e-commerce industry, the government took an initiative and established “ekShop,” the world’s first integrated assisted rural e-commerce platform, in 2019. ekShop has gathered all major e-commerce companies and brought them to the country’s last mile with integration into a single platform. Here, rural and urban merchants can connect and collaborate with major e-commerce and logistics players for shipment facilitation with the potential of global escalation. ekShop incorporates all the major and trusted e-commerce, payments and logistic players into one platform through API and acts as a national e-commerce facilitator and infrastructure backbone.

Digital centres in rural areas play an essential role in ensuring the delivery of a variety of public services to the underserved rural households thereby realising digital inclusion by helping more than six million previously under-served citizens. The number of digital centres increased, from 5,286 in the baseline to 8363 in 2021. Besides, 1659 number of Eksheba Digital Centre and 61 numbers of Franchise digital service has been established across the country.

Expansion of storage, transport and laboratory infrastructure

Establishment of an efficient cold chain is essential to ensure NSVC both in the public and private sector. In addition to public sector storage facilities for foodgrain, there are more than 400 private cold storage units for potato in Bangladesh. But there is a dearth of low-temperature storage facilities as well as cool transportation facilities for other perishables, especially milk, fish, fruits and vegetables. Adequate refrigerated transportation facilities need to be established throughout the country through public-private initiatives in order to reduce loss and waste and maintain the quality and safety of food. The ADB-supported *Rural Connectivity Improvement Project (RCIP, 2019-2023)* aims to: upgrade about 2210 km of Upazila Roads and 495 km of Union Roads to all-weather standards, serving the agriculture sector and rural people living in 34 districts in five divisions. These roads are critical to the agriculture value-chain development zones in Bangladesh to improve the managerial and technical capacity of LGED’s officials, the road users’ awareness on road safety in project areas, and the skills of women workers in road construction; and to enhance the rural road master plan, by using GIS (Geographic Information System) to identify agricultural value chains, road conditions, and mechanisms for allocating priorities, and resource optimisation. Although export-oriented large-scale food processing industries receive quality and safety certification (GMP, GHP, HACCP, ISO 22000:2005, etc.) from a number of certified farms for primary producers (e.g. GAP, GAqP, etc.), the extensive certification is scant in Bangladesh. BSFA has listed 50 food-testing laboratories across the country but only 10 laboratories are designated (BFSA Annual Report, 2020/21). BSFA has an initiative for establishing a central food-testing laboratory and divisional laboratories as well. The MSMEs and the primary producers are

in dire need of quality certification, and the Bangladesh Agricultural Certification Body (BACB), which was recently established, is yet to start delivering Bangladesh GAP Certificates.

Innovations to share information and enhance market opportunities

Several initiatives have been undertaken to improve networking and knowledge exchange between different actors in the value chain. They are paving the way for improved market services for farmers and consumers. Modern technologies such as IoT, machine learning and artificial intelligence contribute to modernising agriculture. The GoB is also working to mainstream ICTs throughout the agricultural value chain. In February 2017, the Bangabandhu Sheikh Mujibur Rahman Agricultural University, Huawei Technologies and Awami League's research wing Centre for Research and Information signed an MoU to initiate the *E-Village Project*. They will deploy and test sensor-based real-time data collection and information sharing for the farmers. Another example is *Krishi Kontho*, an agricultural information service which utilises pre-recorded voice messages and SMSes pushed to farmers. The agricultural information service *Krishi Kontho* was developed by the international NGO Christian Aid in collaboration with the technical partner mPower, the local NGO Gana Unnayan Kendra (GUK), and local farmers subjected to field trials.

Traditionally, small-scale farmers have been unable to access financial services. The online fintech platform *iFarmer* connects farmers to retail investors. It enables access to funding without using farm assets as collateral. Banks can massively contribute to developing the rural agriculture and agro-processing sectors. There have been continued efforts to make up for the lack of rural banking infrastructure and the agro-processing sector was declared a priority sector by the government. The Rajshahi Krishi Unnayan Bank (RAKUB) has also introduced a special credit programme promoting small agro-enterprises (see Outcome I).

Establishing markets for safe and fresh foods

Food safety, quality and nutritional aspects are critical concerns for agri-businesses in Bangladesh. The consumers have limited trust in agri-products. Because from raw vegetable and fruits to milk and milk products, fish, meat and processed food—every food item is contaminated. Contamination of foods with toxic chemicals like carbide, formalin, heavy metal, chemical, textile colors, artificial sweeteners, ripeness, flavors, DDT, urea and so on pose a serious threat to public health.

To foster a market for safe food, Shwapno, the chain store with support from the *Agriculture Value Chain (AVC) Project* launched a new brand initiative ‘Shuddho’ whereby markets are supplied with agricultural foods of high standards and safety. AVC along with GLOBALG.A.P. and the Dhaka Chamber of Commerce and Industry has significantly improved the supply chain and trained the farmers and services providers about Good Manufacturing Practices (GMP). Bangladesh Society for Safe Food has been established with a slogan “Safe Food for Healthy Nation”. This organization has been working to develop awareness about adulteration and contamination. This has generated consumer interest and a market for certified safe food in Bangladesh.

5.2.2 .(b) Needs for further actions under this programme

Incentivise private sector for high-value crop processing

An agri-processing zone can significantly improve the food sector and boost the economy. Studies suggest setting up agro-processing zones in the Northern region of Bangladesh since most of the agriculture crops are produced there. Such endeavour can significantly reduce transport costs. To facilitate private sector investment, the government may provide incentives such as easy land

leasing system, one-stop service for all utility connections, guarantee for loans and tax concessions. The private sector can build the infrastructure in exchange for land and basic utilities. Besides, credit facilities for new and small entrepreneurs can enhance expanding local level processing centres. Technology development for small processing industries is essential. This may strengthen private public partnerships.

Establishment of e-markets and secure payment systems

Developing a virtual platform to create a unified national market for agricultural commodities can help improve competitiveness and transparency in the market. There are a number of benefits of this market as (i) Instant Payment (ii) Higher payment security (iii) Better customer convenience (iv) Saves processing costs (v) Low risk of threat (vi) transparent (vii) Contactless etc. The platform could inform the users about the stock arrivals, prices, buying and selling offers. Such online trading platform can reduce transactional costs, bridge the information gap, cut the middlemen and expand market access for farmers around the country. It also provides a secure e-payment modality to transfer money directly to farmers' bank accounts. The cash transactions have started decreasing after the integration of an electronic payment system in the markets. This means the small businesses need to start using the latest technology to prevent the risk of being overtaken by the competitors.

Facilitate private sector to establish safe food through IoT technologies

IoT can change the demographics of the Bangladesh agricultural sector. Modern technology can be used to inform the decision making at farm and business levels. Technology like block chain can be used to create a digital identity of the farmers along with automated payments, agricultural insurance; traceability etc. Bangladesh's agricultural sector is the sector where most of its population is making their living. Bangladesh is placed as 2nd in freshwater fish production in 2020. The use of IoT can increase the efficiency of fish production and can take us to a place where nobody can beat us in a shorter while. Different IoT based water monitoring and environment controlling solution can increase fish production to a significant amount. Again high precision farming or precision agriculture can increase our crop productivity and increase our GDP by a substantial value. The lack of internet connectivity, awareness and human resources are the main inhibitors in countrywide implementation of sustainable and smart agricultural practices. The country needs to develop adequate infrastructure to enable the implementation of such initiatives. Private sector expertise can be used to fill the gaps and adequate policy attention should be given to allow this to happen. Big data analytics for climate-smart agricultural practices in South Asia (Big Data2 CSA) - in partnership with the public and private sector in Bangladesh and supported by CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) - is developing digital data collection systems serving as crowdsourcing, data-mine and interpreting environmental, climatic and remotely sensed data, primary agronomic management, and the socio-economic data from thousands of smallholder farmers producing rice and wheat. This would allow to identify key patterns in yield, profitability, greenhouse gas emissions intensity and resilience.

Dynamic and machine learning-based early warning system

With the looming climate adversities and changes in soil conditions, traditional farming methods are becoming inadequate if agriculture is to be sustained. With the help from drones, sensors and IoT devices, farmers could make better informed decisions. GIS is a low-cost tool that can help monitor crop coverage, identify fishing sites and detect soil health. It can also help collect, store and maintain climate data. IoT devices can offer ‘just in time’ services which could help dairy and fish farms through health care monitoring, for instance through wearable collars, artificial insemination, through accurate estrus detection, and automated fish feeding, thus reducing cost for the farmers and increasing farm productivity.

Shorter value chain for the perishable products

Cold storage is the best way to preserve the integrity of perishable products. A cold chain from the farm to the processing units or markets can help minimise fresh produce postharvest losses. Existing cold storage facilities in Bangladesh cannot meet the country’s requirements. To address this issue, shorter value chain should be encouraged. Building low-cost cold storage facilities (e.g. CoolBot) across the country could dramatically reduce food loss. It would also provide farmers the confidence they need to start growing high-value crops. Private companies may also be encouraged to establish local standard cold storage and vegetable packaging industries to foster local-level processing industries.

5.2.3 Strategy 2.3 Preserve and enhance nutrient content along the value chain

This strategy consists of 4 AoIs of NFNSP-PoA namely 2.3.1. Preserve and promote food safety and nutrients along the value chain including during transportation, processing, packaging, storage, wholesale and retail, 2.3.2. Promote the fortification and nutrition enhancement of relevant foods where desirable and efficient, 2.3.3. Promote innovation and development of appropriate technologies to preserve nutritional value in local and export processing zones (EPZs), including under Public Private Partnership (PPP), 2.3.4. Build the capacity of the private sector to test food and communicate results to and engage with value chain actors for adequate remedial actions, and establish food traceability mechanisms. It also covers 2 programmes of CIP3 namely Programme II.1. Efficient Food Value Chains (FVCs) through transport infrastructure, Programme II.2. Efficient FVCs through innovation and improvements in post-harvest management and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents.

5.2.3 (a) Progress towards achievement

Table 23: Progress towards achievement of NFNSP Strategy 2.3 and CIP-3 program II.8

NFNSP-PoA & CIP3 Proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Number of mandatory food items certification by BSTI	76	88	88	95	BSTI
Number of management system certification by BSTI	20	23	26	26	BSTI
% of upazilas covered under any social protection program providing nutritionally enriched fortified food	150 (FFP)-30% 100 (VGD)-20%	251 (FFP)-51% 170(VGD)-34% 85% (421 upazilas) only fortified rice through FFP and VGD	170 (VGD)-34% 85% (421 upazilas) only fortified rice through FFP and VGD	170 (VGD)-34% 85% (421 upazilas) only fortified rice through FFP and VGD	BBS, DGFood, MoWCA

Number of private and public food testing laboratories listed under BFSA and BAB	10 (BFSA) 13 (BAB)	10 (BFSA) 14 (BAB)	10 (BFSA) 14 (BAB)	10 (BFSA) 16 (BAB)	BFSA+ BAB
Number of food testing accredited labs	11	13	15	16	BAB

Number of mandatory food items certification by BSTI

The BSTI product certification scheme is a third party product certification scheme based on ISO Type 5. It consists of determining conformity of a product with a Bangladesh standard through product sampling, initial testing and assessment of the factory quality management system. The system has been up gradated in accordance with the international standard ISO/IEC Guide 65 (General requirements for bodies operating product certification system) with a view to ensure safety as well as to promoting export. To ensure the transparency & impartiality in the process of the product certification system BSTI Council has approved the formation of 1) The Certification Advisory Panel and 2) The Certification Committee. Determination and supervision of the implementation of the product certification policy and procedures in accordance with national and international requirements Grant, renew, suspend, revoke or withdraw product certification based on the reports and evidence submitted by the Director (CM) Review and approve all reports for the grant, extension, withdrawal of certification license Bangladesh Standards and Testing Institution Ordinance. We have started implementing it in the product certification system for receiving accreditation from the international accreditation body. BSTI listed 229 products Under Mandatory Certification Marks where 95 are agricultural and food products. The number was 88 in the previous year.

Number of management system certification by BSTI

Although there has been some progress in BSTI awarding food system management certificates to producers and manufacturers in recent years -reflecting compliance with food safety standards set by the authority in their management and quality- the number remains low. Initiatives have been taken by several UN and Global Trade Promotion bodies to strengthen the capacity of Bangladesh Accreditation Board (BAB) to provide accreditation to certification and inspection agencies based on international standards (ISO 17020 and ISO 17021). The number of management system certification by BSTI was 20 in baseline year (2019/20) where the management system certification increased to 26 in 2021/22 and remain same for the next year.

Percentage of upazilas covered under any social protection program providing nutritionally enriched fortified food

Rice is the main staple of Bangladesh, where people consume more than 329 grams per day on average. Through rice fortified with essential 6 vitamins and minerals, as vitamin A, iron, zinc, folic acid, vitamin B1 and vitamin B12 the initiative Scaling up rice fortification aims to reduce micronutrient deficiencies in high-risk groups i.e. the poorest with a strong focus on women and children. Two safety net programs mainly distributes; (i) the Vulnerable Group Program (VGF) and (ii) Food Friendly Program (FFP) fortified rice are distributed. Both the area coverage and beneficiaries are continuously increasing every year. 34% Upazilla i.e. 170 Upazillas are covered by VGD and 51% Upazilla i.e. 251 Upazillas are covered by FFP program where fortified rice are distributed. 86 Upazilla overlapping where both of the programs are ongoing.

Number of private and public food testing laboratories listed under BFSA and BAB

Bangladesh Accreditation Board (BAB) has been installed 13 food testing laboratories in the base year 2019/20 and this number increased to 16 in the FY 2022/23.

Number of food testing accredited labs

Bangladesh Accreditation Board (BAB) has set 11 food testing accredited labors in the base year 2019/20 and this number increased to 16 in the FY 2020/21 and 15 in 2022/23.

5.2.3 (a): Needs for further actions under this programme

Collect evidence on gaps and opportunities to preserve food safety and nutrients along the food value chain and implement recommendations

Evidence needs to be collected to understand where on the FVC safety measures need to be enforced to have a safe and sustainable food system, in line with the Food Safety Law 2013. Research can also identify the stages of the value chain where nutrients are being lost due to inadequate practices or infrastructure and/or where they could be enhanced. A value chain approach may be used explicitly as a tool to achieve nutritional goals. So far, the focus of different studies has mostly been on the economic benefits of food production, although value chain concepts offer considerable potential for enhancing efforts to improve nutritional quality and safety. Understanding the viewpoint of the different stakeholders to see how their involvement in optimising value chains nutrition sensitive product development is required. For example, the underlying objectives and operating principles of the private sector may not obviously match the goal of improving nutrition, creating challenges and barriers to designing and implementing NSVC: this needs to be resolved since there is a clear role for the private sector in integrating nutrition considerations into value chains. Once evidence is made available on these issues, recommendations should be implemented.

Sensitise stakeholders of the value chain to food safety and nutrition

Food producers and agribusinesses must be sensitised to the importance of preserving the nutritional value of food and when possible, enhancing it, as well to food safety issues. Strengthening value chains for promoting local, micronutrient rich foods, producing foods with fewer chemicals and compliance to nutritional standards for food products are important considerations. Promoting the processing of local fruits such as mangoes and litchis is one such example. Incentives to comply with existing standards must be created and/or flagged to those concerned. For example, compliance to international standards and alignment with global market requirements may open up export markets and in turn increase productivity. The flow of information among participants in the supply chain is also important, as well as the product management, in order to maintain the food quality in the supply chain. Sensitization of consumers to these issues (see AoI 3.2.2 and 5.1.3) will translate into greater demand for safe and nutritious foods.

Establish and ensure efficient and safe food storage facilities

Food contaminated with pathogenic bacteria may look, smell, and taste normal but if food is not stored properly, the bacteria (pathogens) in it can grow and multiply to dangerous levels. To combat these issues, there is a dire need to establish and ensure sufficient and efficient food storage facilities, including cold storage. Commercial and public storage facilities need to be regularly

audited and the facilities need to follow the standards set by BFSA. This includes safe storage of food distributed as part of the Public Food Distribution System. Any noncompliance will lead to strict actions against the defaulters. Safe storage with appropriate temperature controls must be ensured at all stages of the value chain: in farms, processors, wholesalers and retailers, and even consumers.

Identify areas, roles and gaps to develop agricultural produce EZs

BEZA, in coordination with the MoInd, the MoA and local government authorities, will identify areas where agro-processing zones could have the highest impact in terms of job creation and human capital development. Regions where specific horticulture produce crops can be processed for commercial viability, given the soil conditions, topography, climate and nutrient content, should be mapped. An analysis of territorial competitiveness of the selected areas will be produced, in line with local stakeholders' buy-in and interests and private investors' requests. The territorial competitiveness studies will aim at providing an analysis at local level (district/upazila level) by market-specific (agricultural specialisation, availability of workforce and productive inputs) and development-specific indicators (contribution to broader Bangladesh economic development) and by identifying infrastructural and resource endowment (power generation capacity, logistics corridors -air, road sea rail- health facilities, education facilities, availability of social housing and other amenities) which would contribute to preserve nutritional value in the produce.

5.2.4 Strategy 2.4 Raise incomes of the poor and food insecure

This strategy consists of 2 AoIs of NFNSP-PoA namely 2.4.1. Expand and promote agriculture-driven, off-farm employment and other employment along the food value chain by expanding vocational training opportunities for rural youth, women and disabled people, 2.4.2. Provide adequate credit, technology, information and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis for the most vulnerable sections of the population.

It also covers 3 programmes of CIP3 namely Programme II.1. Efficient Food Value Chains (FVCs) through transport infrastructure, Programme II.2. Efficient FVCs through innovation and improvements in post-harvest management and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents, Programme II.3. Orderly market management by securing property rights, regulating competition and stabilizing prices.

5.2.4 (a) Progress towards achievement

Table 24 - - Progress towards achievement of NFNSP Strategy 2.4 and CIP-3 program II.9

NFNSP-PoA & CIP3 Proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Number of Agriculture Service Centres (Krishi Tottho Service)	12,356	12,362	12,364	2021512365	DAE
% of rural population owning a mobile phone	69% (15+ years)	69% (15+ years)	54.94% (over all populations)	57.11% (over all populations)	SVRS-BBS
n. of internet users (crores)		10.34	29.7	11.85	BTRC

n. of 4G mobile users (crores)		3.52	3.47	10.15	BTRC
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Agriculture Service Centres (Krishi Tottho Service)

Agriculture Information Service (AIS) is a government organization under the Ministry of Agriculture (MoA), Government of Bangladesh. The main target of this organization is to carry modern agricultural information and technologies to the farmers' doorstep at the grass root level through mass media. It was incepted in 1961 as Agriculture Information Agency, which was turned into Agriculture Information Service in 1985. Information services are being rendered through Headquarters in Dhaka and 11 regional offices nationwide. AIS provides information through media and print media. Print media includes Krishikotha a renowned farm magazine and the Shomprosharon Barta, the monthly news bulletin. The electronic media used are Bangladesh Television (BTV), Bangladesh Betar, Community Radio, and Video Materials. Moreover, AIS organizes different rallies, seminars, workshops, fairs, etc. on national/international days and events. Every year the number of Agriculture Service Centres is increasing gradually which was 12356 in 2019/20, 12362 in 2020/21, 12364 in 2021/22 and 12365 in 2022/23.

Population owning a mobile phone:

The SVRS which was conducted by BBS in 2019 disclosed that in the base year 2019/20 the percentage of population owing mobile phone was 69 and same as the following year. BTRC generated 54.94% of the population are owing mobile phone in 2021/22 and 57.11% of the population are owing mobile phone in 2022/23. However, currently, it is most likely to have increased number of mobile phone users both in rural and urban areas which results in improved quality of people's lives, better social relationship and higher access to digital economy in remote areas.

In developing countries, the information systems sector has been introduced in agriculture as the ecosphere in trying to meet the increasing ultimatum for nourishment as the global inhabitants are increasing. The majority of information systems types are either mass media or mobile phone devices and applications, Content courtesy of Springer Nature, terms of use apply. Rights reserved. Like other developing countries the use of mobile phone in agriculture sector of Bangladesh playing very important role. Especially in supplying facts and data on prices of food and agriculture commodities, thereby ensuring efficiency in the co-movement of prices across markets. This implies that mobile phone for small farmers is the key player to secure their position in the market place, having fair price and process of farming for increased agriculture productivity and sustainability. More so, using social media tools as Facebook, Twitter, YouTube, LinkedIn, and WhatsApp for fetching better ways of sharing agriculture information made a vast world impact. Thus digital revolution i.e. mobile phone applications in farming has facilitated development and technological progress that assisted small farmers easing information asymmetry and bridging the knowledge gaps, backward and forward linkages, driving the enhancement of productivity, employment and economic growth.

Internet Users in Bangladesh:

Information is a fundamental resource for the socio-economic upliftment of any community as it is required and utilized by society for its enrichment and development. There is no denying the fact that Bangladesh has done well in terms of access to information both in rural and urban. Commonly, compared to rural areas the use of the ICT facilities is much higher in urban areas. According to The Bangladesh Telecommunication Regulatory Commission (BTRC), the number of internet users decreased from 11.37 crores in 2020/21 to 11.25 crores in 2021/22 but increased to 11.85 crores in 2022/23.

As per the report published by the Daily Star on Oct 13, 2023, although the number of internet users is increasing a notable upswing despite the government's pro-digital approach, a significant percentage of rural households in Bangladesh do not have access to the internet, a new study conducted by the BRAC Institute of Governance and Development (BIGD) shows.

And experts fear this 'digital divide' could hinder e-governance progress. The study surveyed 6,500 rural households across the country to develop a Digital Literacy Index (DLI) that illustrates the current state of digital literacy in rural Bangladesh. 'Experts at an online seminar on 'Digital Literacy in Bangladesh', where the findings of the study were unveiled, said they fear that this 'digital divide' between rural and urban households in Bangladesh will continue to hamper the country's successful expansion of e-governance System.

4G Mobile Users in Bangladesh:

Bangladesh is a small country with increasing number of internet users. The demand and supply of Internet connectivity in various ICT devices in Bangladesh is increasing day by day. The government allowed 4G services in selected areas on 19 February 2018. Currently, 4G service is being offered in 64 districts. 4G technology is in its early stages. But the demand is high (M. Rahman, 2010). In the FY 2020/21, the number of 4G mobile users in rural areas of Bangladesh is 7.05 crores which is increased to 8.36 crores in 2021/22 and 10.15 crores in 2022/23 (BTRC).

The 4G network use in Bangladesh has gradually increased over the last few years, crossing the 10-crore mark for the first time in October. According to information from Bangladesh Telecommunication Regulatory Commission (BTRC), there were about 18.96 crore mobile subscribers as of October. Of them, 10.05 crore use 4G. This means more than half the users, or 53 percent to be exact, are now using 4G SIMs, displaying a positive trend in the use of high-speed mobile internet.

5.2.4 (b) Needs for further actions under this programme

Increase market demand-based vocational training on the food value chain for rural youth, women, and disabled persons

The government of Bangladesh and the World Bank today signed a \$300 million financing agreement to equip about 900,000 economically disengaged rural youth with skills and alternative education needed for employment and entrepreneurship. About 60 percent of them will be female.

The **Economic Acceleration and Resilience for NEET (EARN) Project** will help overcome barriers that prevent disadvantaged and vulnerable youth from gaining education and employment. It will provide skills training, alternative education, employment, and entrepreneurial support to rural youth who are not in education, employment, or training (NEET). The project will establish vocational training centers to offer a range of skills development opportunities and provide online and offline training courses in market-driven and futuristic trades. They will be in locations convenient to rural youth, especially female. It will also offer competitive financing and mentorship support for entrepreneurial activities. It will help secondary school dropouts, particularly female students to complete vocational secondary education.

“The youth are the future of any country. Creating a well-equipped competitive workforce, where no young person is excluded, is a critical development priority for Bangladesh,” said Abdoulaye Seck, World Bank Country Director for Bangladesh and Bhutan. “The project will help develop a competitive workforce through skill development, continuity of education, and

employment opportunities while addressing underlying cultural and social norms that drive exclusion, particularly for women, people with disabilities, and ethnic minorities.”

In Bangladesh, about 27 percent of youth that is about 12.6 million people are classified as NEET. About 90 percent of them are female, mostly living in rural areas. To enhance their employability, the project will offer skills development training for a wide range of market-relevant trades with an emphasize on modern and non-traditional trades, especially for women.

For secondary school dropped-out youth and adolescents, the project will provide access to Bangladesh Open University education programs through an accelerated curriculum. They will be able to access diploma-level technical education in fields such as nursing, medical technology, agricultural food processing and other courses. To support entrepreneurship, the project will provide seed financing, mentorship, and other relevant supports to the new entrepreneurs.

“The government placed high priority on economically engaging the youth, particularly female and disadvantaged ones, who are not in education or employment through skill development,” said Sharifa Khan, Secretary, Economic Relations Division, Government of Bangladesh. “This project is aligned with the Eighth Five-Year Plan 2021-2025 and support the country’s graduation from LDC status in 2026 and the vision 2041. It will support the government plans and policies by establishing a comprehensive support mechanism for economic engagement of the rural NEET youth, including the persons with disabilities, and segment of the population with special needs, which is essential.”

To create a supportive environment for youth to participate in skill development activities, the project will launch communications and awareness-raising campaigns and involve the communities in planning and monitoring the project activities. It will also provide incentives in terms of stipend, examination fees, and textbooks to motivate the youth, especially women. It will also promote sports and cultural activities and provide psychosocial support to youth. (<https://www.worldbank.org/en/news/press-release/2023/08/27/world-bank-helps-900000-rural-youth-in-bangladesh-with-better-employability-and-entrepreneurial-opportunities>)

The need for training of rural youth, women, and disabled persons to develop adequate skills to run an enterprise is recognised as an issue to be dealt with in the 8FYP and can be addressed through location specific community based TVET training focusing on the agri-food sector including on activities related to food processing, packaging, storage, transportation, and retail sale. Promoting safe marketing of food and commodities of the 2017 Bangladesh National Youth Policy (BNYP)), especially food production safe from chemical and environmental hazards and incentivizing rural youth to become self-employed in safe food marketing would be also an effective strategy.

A market demand-based well-designed course focusing on the rural community setting and particular agro-ecological zones may help rural enterprise growth in line with the draft National Skill Development Policy 2020. Existing TVET services need to be modernized to provide rural-based training in high demand areas in order to enhance participation from women, youth and the disabled.

Capacity building training for women enterprises

MSMEs face a substantial challenge in their productivity in terms of value added per workers and low average wage. The National Strategy for Promotion of Gender Equality in TVET aims to increase female participation from 13% to 40% by 2020. To increase the productivity level of these

already existing enterprises and to integrate left out women, capacities need to be built and credit facilities, extension services and ICT services (see AoI 1.1.4) provided along with market integration.

Women market corner at each village marketplace as well as in growth centres can help develop agro-food sector value chains, however, without skilled women entrepreneurs this may not be sustainable. Training can be arranged from both public and private agencies in order to support market linkages (both horizontal and vertical integration). ICT based women enterprise platforms may help in this regard providing both physical and online training facilities. Financial inclusion through the availability of digital mobile phones with low-cost internet connections and mobile financial services for the rural women can increase the productivity through capacity development training participation.

Bangladesh has made great strides toward women's empowerment in its 50 years of journey. Contribution of women in economic activities is increasing. Still we could not utilize the highest level of their potentials. There is a huge opportunity for women's entrepreneurship development in Bangladesh. The Ministry of Women and Children Affairs (MoWCA) of the Government of Bangladesh (GoB) have been working as the lead ministry for mainstreaming women, and ensuring women empowerment. The Joyeeta Foundation (JF) has been established as a non-profit organization with its own autonomy to continue providing this support under the MoWCA. An integrated strategic action plan for women empowerment is required to show the path of this journey. This report is the outcome of that endeavour to design and develop such integrated strategic action plan under the Capacity Building of Joyeeta Foundation (CBJF) project. The core objective of the assignment is to formulate an appropriate Integrated Strategic Action Plan for Women's economic empowerment in Bangladesh.

Promote training on Agri Service Centres for repair and servicing of agriculture machineries

Most rural areas suffer from inadequate service centres for agricultural machineries as well as lack of skilled mechanics. TVET training on agricultural machineries' repairing and servicing could provide an income generating activity to rural youth, women, and the disabled community. In addition, establishing agri-service centres in rural areas through private-public initiatives could help mobilize this under-used rural manpower. Piloting some model service centres by DAE from the public funding and running it by the TVET-trained rural youth would play a vital role in this regard.

Increase access of formal sector finance with special emphasis for the most vulnerable sections of the population

Efforts will be made to increase access to individual and group based agro-based (both crop and animal husbandry) and non-farm CMS enterprise activities as proposed under AoIs 1.1.4 and 2.1.2 but emphasising the participation of the most vulnerable and usually excluded sections of the population. In particular, collateral-free access to microcredit will be facilitated as well as a lowering of interest rates. The Bangladesh Bank has introduced measures to increase access to formal sector credit. Banks and Non-bank Finance Institutions (NBFIs) can get refinance for promotion of agro-based product processing industry; and new entrepreneurs in CMS industry sector. CMS enterprises that use by-products such as straw/husk, hay, jute leaf, jute stick etc. will also be promoted and market linkages facilitated, in line with the National Agriculture Policy (NAP) (2018). Efforts will be made to increase access to microcredit for small borrowers, to undertake enterprise activities, in line with the PP2041 that aims at creating employment for 1000

male and female youth every year from each upazila. Separate allocation will be made to target PwD and make them more self-reliant.

5.3 Progress towards outputs for NFNSP objective-3 and CIP3 pillar-3

5.3.1 Strategy 3.1. Develop a long-term national plan for ensuring safe, nutritious and sustainable diets in alignment with recommended nutrient intakes at every stage of the life cycle.

Strategy 3.1 aims to improve nutrition knowledge, promote good food safety practices and consumption of safe and nutritious diets. While the emphasis is given to dietary diversity and proportionate consumption of cereal and non-cereal foods towards meeting dietary requirements of macro and micronutrient deficiencies, child stunting, wasting and the emerging concerns of non-communicable diseases (NCDs) merit attention. Promotion of a healthy diet, lifestyle and increased physical activity are key strategies to prevent NCDs. Accordingly, three programmes are included in this strategy. They are: 1) Programme III.1. Development of a national-level food production, supply and consumption plan based on a nutrient gap analysis; 2) Programme III.2. Operationalization of healthy diets for nutrition outcomes; 3) Programme III.3. Expanded human resources and strengthened institutional arrangements to improve performance of nutrition services with special emphasis on enhancing child nutrition outcomes at sub national levels. Under this strategy we have three area of inventions also, those are-AoI 3.1.1. Develop a national-level food production, supply and consumption plan based on a nutrient gap analysis considering energy and nutrient demand for a healthy and active life; AoI 3.1.2. Support the implementation of DDP plans for a healthy and sustainable food system; AoI 3.1.3. Expand human resources and strengthen institutional arrangements to improve performance of nutrition services with special emphasis on field level.

5.3.1.(a) Progress towards achievements

Table 25 - -Progress towards achievement of NFNSP Strategy 3.1 and CIP-3 program (III.1-III.3)

Strategy 3.1 Develop a long-term national plan for ensuring safe, nutritious and sustainable diets in alignment with recommended nutrient intakes at every stage of the life cycle.					
Programs under strategy 3.1	Proxy indicator	Baseline 2019/20	2021/22	2022/23	Verification source
Programme III.1. Development of a national-level food production, supply and consumption plan based on a nutrient gap analysis	% of Dietary Energy Intake (DEI) from cereals	64% (2016)		58% (2022)	HIES, BBS
Programme III.2. Operationalization of healthy diets for nutrition outcomes	n. of "Growth Centres" in rural and urban areas	110	130	130	LGD
	Per capita daily availability (from own production) of selected foods according to DDP targets a) rice b) fruits c) vegetables d) pulses e) milk f) fish g) beef, mutton and poultry h) egg	a) 633.30 gm b) 81.39 gm c) 74.89 gm d) 6.51 gm e) 174.79 ml f) 73.70 gm g) 125.59 gm h) 0.28 no.	a) 608.53 gm b) 85.31 gm c) 79.10 gm d) 6.91 gm e) 151.33 ml f) 74.59 gm g) 113.54 gm h) 0.25 no.	a) 626.96 gm b) 90.83 gm c) 86.02gm d) 7.03 gm e) 220.56 ml f) 77.25 gm g) 139.68 gm h) 0.37 no.	BBS

Programme III.3. Expanded human resources and strengthened institutional arrangements to improve performance of nutrition services with special emphasis on enhancing child nutrition outcomes at sub national levels	n. of district nutritionists recruited	0	0	0	BNNC
	% of district and upazila nutrition coordination committees functioning	25%	55%	55%	BNNC, MoHFW

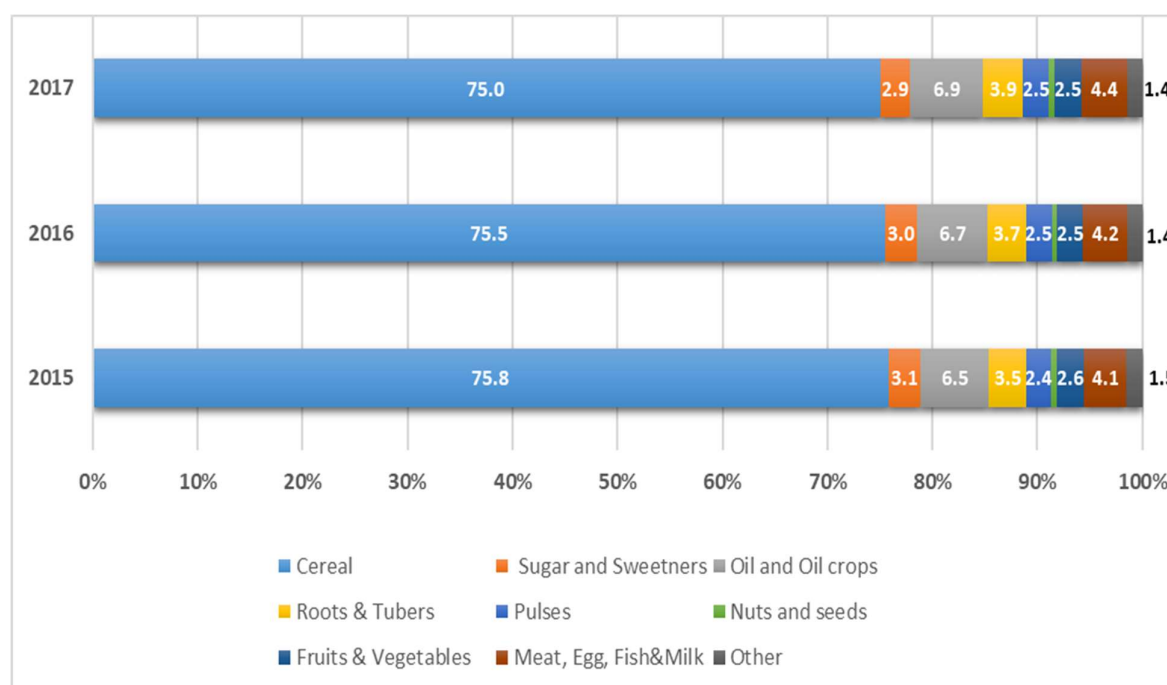
*R: Revised; *: Not available*

Share of total dietary energy intake (DES) from cereals has deceased

Considering the Household Income Expenditure Survey 2022, share of dietary energy intake from cereal has decreased. It notices the increased of diversified consumption of food.

Between 2015/16 and 2017/18, the ratio of cereal and non-cereal food consumption per capita per day remained almost unchanged, from 76:24 to 75:25. WHO/FAO normative recommendations are that 55-75% of the proportion of total energy consumption should come from carbohydrate, 10-15% from protein and 15-30% from fat. In 2017, consumption of cereals provided 75% of the average dietary energy, the maximum of the recommended range for carbohydrates (Figure 20). The aggregate supply of dietary energy from protein-rich animal source foods and vegetable protein (i.e. pulses) was close to 7% which is significantly lower than the normative recommendation. The DES from oil and oil crops was approximately 7%, also significantly lower than the recommended intake. The DES is clearly predominantly cereal-based, reflecting a lack of dietary diversity in Bangladesh.

Figure 21 - Share of food groups as percentage of Daily Energy Supply (DES)



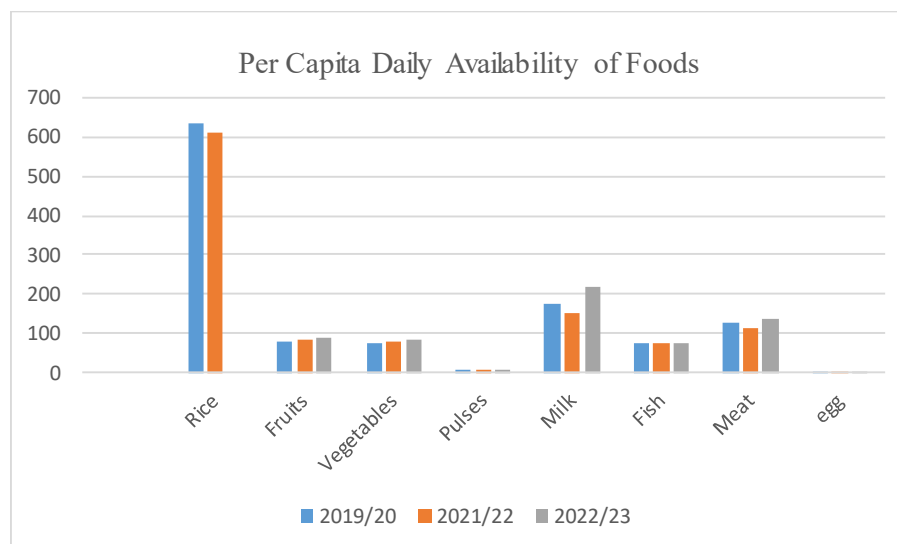
Source: Data from FAOSTAT

Increased number of "Growth Centres" in rural and urban areas

Growth Center is a major connection between urban and rural areas and an effective rural development strategy. In the context of Bangladesh, growth centers are rural markets or intermediate urban centers that have been identified by Planning Commission on the basis of socio-economic and administrative criteria for making development investment. Table: 3 shows that the increase of growth centers in rural areas from 110 in 2019/20 to 130 in 20122/2023 (APA, LGD), which fulfils its target for the year 2022-2023. The development of the growth centres has led to significant progress in the rural economy. It is necessary to increase the number of such centres across the country to ensure continued development. Since, government had promised to extend the benefits of the city to the villages.

Per capita daily availability of selected foods has increased from baseline:

Figure -22: Per capita daily availability of selected foods according to DDP targets



Source: FPMU database, BBS

Per capita daily availability (from own production) of selected foods according to DDP targets has increased since the baseline year. Per capita availability of selected foods (according to DDP) like i) rice, b) fruits, c) vegetables, d) pulses, e) milk, f) fish, g) beef, mutton and poultry and h)egg has increased compare with the baseline year 2019-20.

The Effectiveness of District and Upazilla Nutrition Coordination Committees: Data Reveals Significant Improvement but Still Short of National Target

District and upazilla nutrition coordination committees are one of the most important and influential institute for implementing nutritional activities i.e. sharing nutrition knowledge and information in the sub-national level. According to data analysis, the functioning of District and Upazilla Nutrition Coordination Committees has seen a notable improvement, rising from 25% in 2019-20 to 68% in 2022-23. However, despite this progress, it remains significantly below the national target of 100% set by the Bangladesh National Nutrition Council (BNNC).

Nutrition is a multifaceted issue that intersects with various sectors, including food, health, agriculture, fisheries, education, social protection, water, sanitation, hygiene (WASH), and family planning. Recognizing the complexity of addressing malnutrition, the government has established District and Upazilla Nutrition Coordination Committees (DNCC & UNCC), comprising representatives from 22 ministries. This collaborative approach aims to ensure effective management of multi-sectoral nutrition activities at the grassroots level.

5.3.1. (b) Policy development, programmes and initiatives underway and Needs for further actions under this programme

Dissemination of Dietary Guidelines for Bangladesh

Dissemination of National Dietary Guidelines is an important to ensure nutritious and healthy diet for general people. The Dietary Guidelines for Bangladesh 2015 has been revised as a joint effort of the MoHFW and MoFood, BIRDEM, NNS-IPHN, with support from FAO and WHO and in partnership with other stakeholders. The Dietary Guidelines for Bangladeshi Population 2020 are based on the principles of a food-based approach to healthy eating that can help improve the nutritional and health status of the population on a sustainable basis. It supports an eating plan of diverse nutrient-rich foods. Following the recommendations of a high-level Technical Working Group to revise the dietary guidelines with three sections, FAO and FPMU were vested with the responsibility for updating and finalizing the general guidelines, while the remaining two sections on age-specific, and disease specific guidelines were the responsibility of WHO and MOHFW, to which FAO also provided technical support.

The Food Based Dietary Guidelines has been disseminated by the Ministry of Food for the wider promotion of the dietary guidelines and nutrition messages at the sub-national level through 10 (ten) dissemination workshops in all divisions to sensitize the sub-national level government officials and concerned stakeholders so that they could reach out to the communities. From the dissemination workshops it was possible to familiarize and capacitate the participants on an understanding of the FNS policy frameworks in Bangladesh including relevant policies and also possible to disseminate food based dietary guidelines for better nutrition and health and nutrition principles in terms of foods and dietary practices. The workshops have contributed to the improvement of nutrition behaviour in the population of sub-national level.

Promotion of nutrition through national events

Bangladesh has been celebrating a *National Nutrition Week* (NNW) on 23-29 April each year since it was reintroduced by the government since 2018. National Nutrition Week 2023 was observed across the country in 2023. Activities, as well as mass-media campaigns, were organised to increase public awareness and disseminate information on tackling malnutrition and undernutrition with the use of locally available foods. On this occasion, BNNC, United Nations organisations, DPs, INGOs and NGOs jointly reaffirmed their commitment to collective action to accelerate the reduction of malnutrition in Bangladesh. With the theme "*Proper nutrition for healthy life*", the National Nutrition Week 2022 was observed across the country in 2022. The *Nutrition Olympiad* (NO) was celebrated as part of the NNW: it is a national event organised since 2017 to bring youth and adolescents at national level to demonstrate Nutrition Club knowledge and to build and extend their network. Youth and adolescents participate in the Nutrition Olympiad, the successive 5 years (2017-2021) had triggered national attention to focus on adolescent nutrition. The theme of the 2022 NO was "*Let the Youth Lead for Better Nutrition*". International Nutrition Olympiad 2022 held during October 1-2, 2022 days with a series of preparatory activities and pre-Olympiad events. Sher-e-Bangla Agricultural University, Dhaka hosted the INO 2022 as Partner. The two-day event involved activities to attract youth engagement such as a food design competition, street plays, debate, paintings, nutrition carnival, public speaking and a healthy snacks competition. A large number of youths, government officials, international and national organisations, civil society, professionals, academia, and media participated in the event. NO offers the opportunity to Nutrition Clubs - constituted by school students, adolescents and youth – to receive regular

mentorship and training from experienced nutritionists. Other important national events include the World Food Day, the World Breastfeeding Week, the National Food Safety Day, World Food Safety Day, 3-day National Vegetable Fair, 3-day National Fruit Fair and World Egg Day.

Initiation for the development of Multi-sectoral Urban Nutrition Strategy

Initiation for the development of the Multisectoral Urban Nutrition Strategy has been taken by the Bangladesh National Nutrition Council, Ministry of Health and Family Welfare. Role and responsibility of the relevant stakeholder Ministries/Agencies to reduce malnutrition in the urban areas will be identified after the finalization of the Multi-sectoral Urban Nutrition Strategy.

Initiation of the Nutrition Challenge Badge

The Nutrition Challenge Badge (NCB) is the outcome of the Youth and United Nations Global Alliance (YUNGA) Learning and Action Series, which is designed to help children and youth explore basic concepts of good nutrition, healthy and environmentally friendly eating habits and lifestyles through the nutrition clubs established under the programme. On completion of the assigned activities, the children are entitled to receiving an NCB. The *Meeting the Undernutrition Challenge (MUCH)* project, implemented by GoB and FAO launched the NCB in Bangladesh in collaboration with the BIID Foundation to coincide with Universal Children's Day. The target was to enrol 600 children, youth and adolescents from 20 selected schools in Sylhet, Dhaka, Rangpur, Chattogram, Mymensingh and Rajshahi.

Implementation of the school meal policy and programme

Nutritious meals for school children have a high return on investment as they improve children's health, increase enrolment in schools and productivity throughout their life. The government-led *School Feeding Programme in Poverty Prone Areas* project which has been running since 2013 started providing hot meals (see Programme IV.2). The meal is intended to be a healthy, fresh, locally-sourced meal that will fulfil part of the day's macro and micronutrients requirements. A National School Meal Policy 2019 was formulated and recommended that at least 30% of daily calorie requirement and 50% of daily micronutrient requirements of every primary school student be covered by school meals. This new policy will contribute to increase primary school attendance and reduce the dropout rates in the primary schools.

Revise and implement the National Strategy for IYCF

Despite the current progress in EBF, inappropriate infant feeding remains prevalent. The challenges related to optimum breastfeeding include socio-cultural beliefs that favour mixed feeding, a non-supportive health-system, inadequate skilled support at health facilities and community level, aggressive promotion of infant formula, milk powder and other breast-milk substitutes (BMS), inadequate workplace policies to support maternity and paternity leave legislation and poor knowledge of the benefits of EBF. Strict implementation of the BMS Act 2013 and compliance with the existing laws against infant formula or breastmilk substitutes are required. Poor dietary diversity of child feeding is another major concern.

The NNS under the Health, Population and Nutrition Sector Programme (HPNSP) 2018-19, IPHN with the technical support of Bangladesh Breastfeeding Foundation (BBF) have been revising National strategy for infant and young child feeding for 2018-2025 which had not been updated since 2007. It will build on existing achievements and, based on evidence from Bangladesh and globally, provide a framework for actions to protect, promote and support the optimal IYCF. This

revision process needs to be accelerated and the revised strategy should be implemented as soon as possible.

Promote healthy diets and lifestyles to prevent NCDs, including diabetes

Diets in Bangladesh tend to be carbohydrate intensive, with a predominance of refined grains. Moreover, emerging food-production technologies and supermarkets have made energy-dense foods more readily available. This includes refined carbohydrate foods with added sugars, refined grains and unhealthy fats. Altering diets by replacing refined cereals such as white rice with whole grains (e.g. brown rice), encouraging low glycaemic index meal along with high dietary diversity and increasing physical activity can help to prevent diabetes in high-risk individuals. This calls for introducing changes in policies related to healthy eating, enabling healthy environments and improving health systems to tackle NCDs.

It is therefore recommended to scale up the Multi-sectoral Action Plan for Prevention and Control of Non-Communicable Disease 2018-2025. Under the fourth HPNSP for 2017-2021, the WHO Package of Essential Non-Communicable Disease Interventions protocol for early detection and management of cardiovascular diseases, diabetes, chronic respiratory diseases and cancer to prevent life-threatening complications (e.g. heart attacks, stroke, kidney failure etc.) is being rolled out at the primary care level like community clinics and upazila health complexes. As part of the protocol, patients diagnosed with hypertension and diabetes will be counselled about living a healthy lifestyle and provided with required anti-hypertensive and anti-diabetic drugs free of cost at the primary healthcare level. The outreach should be expanded through other health programmes such as immunization or family planning.

Promote under-utilised foods

Underutilised foods and especially Neglected and Underutilized Species (NUS) need to be promoted through food-based dietary guidelines, and the food composition tables must document the nutrient composition of such foods as well as ethnic foods. These foods which include minor cereals, special maize varieties, oilseeds, indigenous fish species, local fruits, vegetables and seeds are underutilised, despite having a much higher nutrient content than globally known species or varieties commonly produced and consumed. In addition to their superior nutritional qualities, many of these crops require fewer inputs, can be grown on marginal land and are easily intercropped or rotated with staple crops, and fit easily into integrated practices such as agroecology. Because they are frequently adapted to marginal conditions and often have the unique ability to tolerate or withstand stresses, NUS can make production systems more sustainable and climate-resilient.

They are also less damaging to the environment and are culturally acceptable. Unfortunately, due to the urbanisation and transformation of eating habits towards increasing consumption of imported and processed foods, they are minimally consumed. Traditional foods should be promoted by preserving genetic species, highlighting their importance in the current production systems, and exploiting opportunities to enhance their production and consumption through production technologies, nutrition education and value chain development.

5.3.2 Strategy 3.2. Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets

Under the Strategy 3.2 there are two Area of Interventions (AoI) including AoI 3.2.1 and AoI 3.2.2. AoI 3.2.1 is ‘Develop and promote local foods, healthy cooking and food combinations, safe storage including knowledge on nutrient labelling’. AoI 3.2.2. is ‘Scale-up integrated nutrition education strategies to enhance consumption of healthy, diets, increase awareness of the nutrient composition of local foods as well as to prevent and control malnutrition (undernutrition and over nutrition)’. Accordingly, one programmes is included in this strategy. This is Programme III.4: ‘Enhanced nutrition knowledge, good dietary practices and consumption of safe and nutritious diets for the prevention and control of malnutrition and NCDs’.

5.3.2.(a) Progress towards achievement

Table 26- Progress towards achievement of NFNSP Strategy 3.2 and CIP-3 program III.4

Strategy 3.2. Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets					
Program under strategy 3.2	Proxy indicator	Baseline 2019-20	2021/22	2022/23	Verification source
Programme III.4. Enhanced nutrition knowledge, good dietary practices and consumption of safe and nutritious diets for the prevention and control of malnutrition and NCDs	Number of mass media activities for nutritional behaviour	2606	2606	N/A	Ministry of Information, FPMU
	% change in per capita consumption a) vegetables b) fruits	a) 0.73 % vegetables increase b) 20.13% fruits decrease		a) 20.68% vegetables increase b) 166.48% fruits increase (comparing HIES-2016 with HIES-22)	BBS-HIES, HIES 2010, HIES 2016 and HIES 2022

The number of mass media activities for nutrition behaviour change is same

Mass media are one of the most important and influential tools for NBCC for sharing nutrition information and knowledge. More than two thousand six hundred mass media activities related to food and nutrition were recorded including health bulletins, print media (newspapers), radio television and mobile applications in 2020-21. BTV, the national television, and the 12 private TV channels telecasted a wide range of programmes on food and nutrition on a daily, weekly and quarterly basis. BIRTAN developed a mobile application *Amar pushti* focusing on eight topics-applied nutrition, nutrients in food, balanced diets, malnutrition, nutrition in life cycle, cooking methods and safe food (Table---). Popular newspapers, magazines and health bulletins published information on safe food, healthy diet, nutrition and healthy lifestyle in their weekly, fortnightly and monthly copies. BIRDEM published two nutrition-related magazines which were widely distributed.

Table 23- Number of mass activity for nutritional behaviour including the themes of nutrition and health, and agriculture and technology (MR 2020)

Sector	Subject of programme	Number of activities	Coverage
Bangladesh Television	Shukhi poribar, Shustho thakun, Maa o shishur bitorko, Shishu o nari, Shastho barta, Banglar krishi, Maati o manush, Krishok o binodon, Tothya batayan, Adhunik biggan	1,211	Nationwide
Private TV Channel	Channel 24, ATN, Jamuna TV, NTV, RTV, Channel i, Channel 24, Ekattor 71 TV, Independent TV, Somoy TV, ETV, Desh TV, Boishaki, Mohona TV	300	Nationwide
Bangladesh Radio	Shuker shoptahe thikana, Nari o shishu Unnoyan, Shashtho shokol shukher mul, Aponar shashtho, Aongona, Banni shikha, Jatio pushti prokolpo, Kishan bodhu, Banizzik karjokrom	300	Nationwide
Radio Community Program	Shashtho-e- shukher mool, (pramanno prog), Jatio pushti prokolpo 2016-2022, Bohirangon	36	Nationwide
BIRTAN	Amar pushti (mobile app)	8	Nationwide
Print media (newspapers & magazines)	Nutrition and health messages published on a weekly, fortnightly a monthly basis	736	Nationwide
BIRDEM	Kanti	3	1,500 copies
BIRDEM	Diabetes Newsletter (monthly)	12	48,000 copies
Total mass media activities		2,606	

Percentage change in per capita consumption (vegetables and fruits):

There is a significant improvement in the consumption of fruits and vegetables as per the BBS-HIES 2022. Considering the food consumption data from the previous report BBS-HIES 2016, per capita vegetable consumption has increased 0.73% in 2016 comparing with the previous consumption in 2010 and per capita fruits consumption has decreased 20.13% in 2016 comparing with the previous fruit's consumption in 2010. Recent BBS-HIES 2022 preliminary report shows that per capita vegetable consumption has increased 20.68% in 2022 comparing with the previous consumption in 2016 and per capita fruits consumption has increased 166.48% in 2022 comparing with the previous fruit's consumption in 2016.

5.3.2.(b) Needs for further actions under this programme

Promote Cooking Demonstration and safe food preparation:

Promotional campaign on safe and nutritious food preparation needs to be implemented to ensure consumption of healthy diet. Food based nutrition training, Behaviour Change Communication and Mass Media Activities will be need to be developed to encourage appropriate cooking technique. Household level food preparation, processing and storage techniques need to be promoted. It is important to ensure healthy food preparation to reduce nutrient loss during processing and to ensure hygiene and safety through hygienic food handling, storing, serving and consumption.

Promote production and consumption of local and indigenous fruits and vegetables:

It is important to take initiatives to promote production and consumption of indigenous and underutilized nutritious foods including fruits, vegetables and fishes. Food Based Dietary Guidelines (FBDG) and Food Composition Tables (FCT) should include the nutrient content of these underutilized and indigenous foods. Dissemination of National FBDG and FCT will encourage not only to increase the production but also to consume these foods to ensure diet diversity.

Integrate Nutrition Behaviour Change Communication (NBCC) into nutrition-sensitive programming:

Integrating NBCC with nutrition-sensitive interventions such as homestead production of diverse, nutrient-rich foods and social protection programmes can have positive effects on the nutritional status and health of rural households, particularly among women and young children. Based on results of *Transfer Modality Resource Initiative (TMRI)*, integrating intensive high-quality BCC in social protection programmes, more specifically in the social safety nets that provide sufficient amount to have an impact (1,500 BDT/per month) can improve household food security and child nutrition. Encouraged by the TMRI results, the Ministry of Women and Children Affairs (MoWCA) piloted the Investment Component for the Vulnerable Group Development (ICVGD) programme for destitute women, which adds a cash grant for investment, fortified rice distribution and nutrition BCC to existing Vulnerable Group Development (VGD) activities. Lessons learnt from this programme, the existing nutrition-sensitive social safety net and agricultural programmes, need to be linked to BCC and nutrition education to have an impact on nutrition outcomes. NBCC should focus on enhancing dietary and nutrition knowledge for all, regardless of economic and social status, age or gender. Hence, appropriate contextualized BCC focusing on standardized and correct information on dietary knowledge, healthy cooking methods, nutrient dense-recipes, dietary diversity, appropriate IYCF practices, food handling, preservation, storage, food safety issues and WASH should be developed and disseminated.

5.3.3 Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation

This strategy consists of 4 area of interventions AoI 3.3.1. Expand programs for immunization, control of ARI, prevention of cholera and diarrhoeal diseases/AoI 3.3.2. Strengthen the implementation of NNS delivery integrated with community clinics targeting children and women suffering from persistent weakness and micronutrient deficiencies/AoI 3.3.3. Scale up the supply of safe water for consumption and domestic use/AoI 3.3.4. Improve sanitary facilities and hygiene practices, including the prevention of animal to human transmission of disease and prevention and control of food and water- borne illness. There are three programmes under the Strategy 3.3. They are Programme III.5, Programme III.6 and Programme III.7. Programme III.5. is ‘Expansion of programmes for immunization, control of ARI, prevention of cholera and diarrhoeal diseases’; Programme III.6. is ‘NNS delivery and early childcare practices to promote maternal and child nutrition’; Programme III.7 is ‘Supply of safe water for consumption and domestic use enhanced, improved sanitary facilities and hygiene practices to better impact food utilization and nutrition outcomes’.

5.3.3.(a) Progress towards achievement

Table 27 - Progress towards achievement of NFNSP Strategy 3.3 and CIP-3 program (III.5-III.7)

Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation					
Programs under strategy 3.3	Proxy indicator	Baseline 2019-20	2021/22	2022/23	Verification source
Programme III.5. Expansion of programmes for immunization, control of ARI, prevention of cholera and diarrhoeal diseases	Children (Under-5) mortality rate per 1,000 live births (SDG 3.2.1, SDG-NPT 6 and 8FYP)	45 per 1000 live birth (BDHS-2018)	31 per 1000 live birth (BDHS 2022)	33 per 1000 live birth (BBS-Sample Vital Registration System 2023)	BDHS, BBS Sample Vital Registration System 2020
	% of children aged 12-23 months who received all basic vaccinations by age 12 months (BCG, measles, triple pentavalent DPT containing, and triple polio doses) (SDG 3.b.1 and 8FYP)	86%	N/A	N/A	BDHS, SDG Tracker MoHFW
Programme III.6. NNS delivery and early childcare practices to promote maternal and child nutrition	n. of national surveys collecting data on MDD-W	0 (2019-20)	1 (2022)	1 (2022)	BBS
	% of households consuming iodised salt (>15 ppm) (NPAN2)	58.5% (2019)	N/A	N/A	MICS-BBS
	Coverage of vitamin A supplementation in children 6- 59 months (NPAN2)	80% BDHS 2018	97% (MoHFW)	98.7% (MoHFW)	BDHS,MICS, MoHFW, BBS
	n. of community-based fortification and supplementation programs	7 [fortification : rice, oil, salt/iodization; supplementation Fe and Folic acid, Vitamin-A, Zn, MNP]	7[fortification: rice, oil, salt/iodization;supplementation programme: Fe and Folic acid, Vitamin-A, Zn, MNP)	7[fortification: rice, oil, salt/iodization;supplementation programme: Fe and Folic acid, Vitamin-A, Zn, MNP)	MoHFW, MoInd
Programme III.7. Supply of safe water for consumption and domestic use enhanced, improved sanitary facilities and hygiene practices to better impact food utilization and nutrition outcomes	% of population with safely managed drinking water services (SDG 6.1.1) a) urban b) rural	a) 44.7% (2019) b) 48.8% (2019)	N/A		MICS-BBS, SDG Tracker
	% of schools with access to basic drinking water (SDG 4.a.1 and 8FYP) a) primary b) secondary	a) 78.88% (2018) b) 97.48% (2020)	N/A		BANBEIS-BES, SDG Report SDG Tracker
	% of population using: (a) safely managed sanitation services (SDG 6.2.1 and 8FYP) b) hand-washing facility with soap and water (SDG 6.2.1)	64.1% (2019) 74.8% (2019)	N/A		MICS-BBS, 8FYP MICS-BBS, SDG Tracker

Children (Under-5) Mortality Rate Declines:

According to the Bangladesh Demographic and Health Survey (BDHS)-2018, the baseline year recorded a child mortality rate of 45 per 1000 live births among children under the age of 5.

Subsequent data from the Bangladesh Bureau of Statistics (BBS) Sample Vital Registration System 2023 indicates a decline in the child mortality rate to 33 per 1000 live births. However, this figure still falls short of the anticipated target of 27 by 2025, as outlined in the Eighth Five-Year Plan (8FYP), and 25 by 2030, as per the Sustainable Development Goals (SDGs).

Encouragingly, the preliminary report of the BDHS-2022 shows a further reduction in the child mortality rate to 31 per 1000 live births in 2022. This suggests ongoing progress towards achieving the targets set for child mortality reduction.

Percentage of children aged 12-23 months who received all basic vaccinations by age 12 months:

In the baseline year (2019-20) basic vaccination coverage was 86% according to Bangladesh Demographic and Health Survey (BDHS). As per the official data from MoHFW, it was found that the basic vaccination coverage was 97% in the following year. 8FYP target to achieve 98% basic vaccination coverage within 2025 and SDG target to achieve 100% basic vaccination within 2030 where Bangladesh is very close to achieve those targets within the required time.

Number of national surveys collecting data on MDD-W:

Minimum Dietary Diversity of Women (MDD-W) is an important indicator developed by FAO and partners to fill the need for a simple, food-based indicator for measuring dietary diversity and micronutrient adequacy, key dimensions of diet quality of women of reproductive age. Only one single survey conducted in 2021 for collecting data on Minimum Dietary Diversity of Women (MDD-W) and still it is the only survey conducted for MDD-W data collection nationally.

Percentage of households consuming iodised salt (>15 ppm):

Household consuming adequate iodized salt (>15 ppm) is an important indicator under the strategy 3.3 to find out the causes of the prevalence of iodine deficiency. According to MICS-BBS survey in 2019, 58.5% households were consuming adequate amount of iodized salt, which is far below than the national target by Second National Plan of Action of Nutrition (NPAN2). Target from NPAN2 is to achieve 90% household consuming iodized salt within 2025.

Coverage of vitamin A supplementation in children 6- 59 months has increased:

In the baseline year (2019-20) Coverage of vitamin A supplementation in children 6- 59 months was 80% according to Bangladesh Demographic and Health Survey (BDHS)-2018. As per the official data from MoHFW, coverage of vitamin A supplementation has increased to 98.7% in 2022-23 from 97% in 2021-22 and. NPAN2 target is to achieve 99% vitamin A supplementation coverage within 2025, which is nearer to the present situation.

Number of community-based fortification and supplementation programs:

Number of community-based fortification and supplementation programs has been implementing in Bangladesh is 7. Community-based fortification programme includes rice fortification programme under Food Friendly Programme and VGD, Oil Fortification under the Oil

Fortification Act, Salt iodization under the Salt Act. Supplementation Programmes includes Iron and Folic Acid Supplementation Programme for pregnant and lactating mother, Vitamin-A supplementation programme for the children under five years, Zinc supplementation programme for children, and Micronutrient Powder (MNP) Programme. These 7 Community based fortification and supplementation programs are still remains same as 2021.

Percentage of population with safely managed drinking water services (urban and rural):

Percentage of population with safely managed drinking water services includes percentage of household members with an improved drinking water source located on premises, free of E. coli and available when needed. About 44.7% urban population and 48.8% rural population has access to safe drinking water in 2019 and within 2025, 8FYP targets to cover 100% population of the country with access to safe drinking water.

Percentage of schools with access to basic drinking water (primary and secondary):

78.88% primary schools and 97.48 % secondary schools has access to basic drinking water in 2020. Within 2030, 100% primary and secondary schools must be under the basic drinking water coverage to achieve SDG goal.

Percentage of population using safely managed sanitation services and hand-washing facility with soap and water:

In 2019, 64.1% and 74.8% of the total population were under the coverage of safely managed sanitation services and hand washing facility with soap and water. According to 8FYP, 80% of the total population should be covered with safely managed sanitation services and hand washing facility with soap and water within 2025. SDG goal is to cover 100% of the population with safely managed sanitation services and hand washing facility with soap and water within 2030.

Policy development, programmes and initiatives underway

The GoB Bangladesh has undertaken to strengthen the capacity of upazila water and sanitation committees to enhance WASH in rural areas. Along with the universal coverage of safe water and sanitation, the government is focused on improving water quality (free from chemical and microbial contamination) through the implementation of the Water Safety Plan 2014.¹⁵³ This includes the management of on-site and off-site sewage treatment and faecal sludge management. For WASH, commendable achievements have been recorded with, for instance, the proportion of the population with access to basic handwashing facilities increasing from 59.1% in 2012-13 to 74.8% in 2019.¹⁵⁴ Progress has been specially recorded in rural areas but in urban slums, the situation remains challenging. In the context of an ever-growing urban population, urban WASH and health are some of the critical challenges that the government needs to address. The Department of Public Health Engineering (DPHE), MoHFW and the Ministry of Local Government, Rural Development and Cooperatives (MoLGRDC) need to continue focusing on generating evidence and measuring the impact of their interventions.

¹⁵³ WHO/SEARO/Country Office for Bangladesh (2014) [Water Safety Plan \(WSP\) -A Risk Based Approach for Water Safety](#). Dhaka.

¹⁵⁴ Multiple Indicator Cluster Survey (MICS) 2019.

Iodized Salt Act 2021

The parliament has passed Iodized Salt Act-2021 aiming to ensure proportionate use of iodine in salt and regulate the salt market in the country. The proposed Bill will be enacted through annulling previous “Iodine Deficiency Disease Prevention Act-1989.” Under the proposed law, a 14-member national salt committee, headed by the Industries Secretary as its chairman, will be formed to oversee production, processing, refining, storage, transportation and marketing of salt, ensuring iodine use in salt, supply of iodine to the salt factories, regulating salt import, as well as to place recommendations over salt management policy. There will be a separate cell under the Industries Ministry to ensure the proportionate mixing of iodine in salt. Implementation of the Act will help to the population to consume adequately iodized salt.

Global Handwashing Day celebrated

In order to influence, inform and increase public awareness on the positive effects of handwashing, MoLGRDC and UNICEF successfully celebrated the Global Handwashing Day on the 15th of October 2018. Around 1000 school and university children took part in the event and promoted the theme ‘Clean hands – a recipe for health’. As a community engagement strategy, the GoB included schools and school children to encourage behaviour change around WASH.

Technical Symposium on Nutrition-Sensitive WASH

The MoFood and MoLGRDC with support from FAO and WHO and technical collaboration from WFP and UNICEF conducted a symposium on Nutrition-Sensitive WASH on the 5th Nov 2018. This multisectoral collaboration was the evidence of the GoB’s commitment to improved nutrition-sensitive WASH.

The COVID-19 effect

In May 2020, the GoB launched a strategic paper to respond to WASH issues during and after the COVID-19 outbreak. Among other measures, the pandemic led to sustained mass communication on hand washing. If this effect can be sustained, it could be beneficial for overall hygiene practices.

5.3.3.(b) Needs for further actions under this programme

Bangladesh National Strategy for Maternal Health 2019-2030:

Bangladesh National Strategy for Maternal Health 2019-2030 is very important to achieve Sustainable Development Goal by 2030. Considering the underlying causes of child malnutrition, maternal health is very significant to improve nutritional status of mother as well as her children. The overarching goal of the Bangladesh National Strategy for Maternal Health (2019-30) is to accelerate the reduction of maternal and neonatal mortality and to reduce the burden of maternal and neonatal morbidity. To achieve this goal, the strategy aims at creating the conditions to make skilled attendants at birth available to all women, and equitable access to quality delivery care in appropriately equipped and staffed health facilities available to the highest proportion of women. To reduce risks and achieve the best outcomes for both mothers and babies, the provision of delivery care must be accompanied by the provision to all women of reproductive health services and of pre-conceptional, antenatal and post-partum care.

Promote public and private sector partnership for improved and innovative social and behaviour change communications

Innovative partnerships and models combining strengths of the public and private sector need to be implemented at scale. To realize the impact of WASH interventions, multi-sectoral actions are needed. The government needs to design and invest in programmes that address the full spectrum of WASH related issues. These include clean water proper sanitation facilities, availability of water and soap for handwashing and behavioural issues such as instilling the habit of handwashing with soap at critical times notably before preparation of food, washing babies, after using the toilet. Unfortunately, commercial financing in emerging markets currently makes up only a small portion of WASH investment in Bangladesh. WASH sector on average attracted only 3% of private sector participation in infrastructure projects.¹⁵⁵ Involvement of the private sector through partnerships must be promoted in order to enable behaviour change. Indeed, the public sector can benefit from utilising the outreach and social marketing platforms of the private sector to reach a larger audience in their mission to positively affect behaviours.

Integrate nutrition-sensitive WASH in policies and programmes

Nutrition and WASH are interconnected and correlated. Studies have established that when WASH interventions are combined with nutrition interventions, the level of stunting can be greatly reduced. In UNICEF's causal framework of malnutrition, the two immediate causes of malnutrition are inadequate dietary intake coupled with sub-optimal feeding and care practices in the first two years of life and high rates of infectious disease due to predominantly unhealthy environment. A meta-analysis carried out by UNICEF shows that improved sanitation and drinking water integrated with other nutrition and health interventions can bring about a decline in child stunting. Stunting reduction is driven by safe water and sanitation, women's education and empowerment and the quantity and quality of food. Income and governance play key facilitation underlying roles.¹⁵⁶

5.4 Progress towards outputs for NFNSP objective-4 and CIP3 pillar-4

Objective IV consist of 3 Strategy. Strategy 4.1 Improve management of the public food stock and distribution system. Strategy 4.2 Improve disaster preparedness, responses, rehabilitation and

¹⁵⁵ WWAP (UNESCO World Water Assessment Programme) (2019) [*The United Nations World Water Development Report 2019: Leaving No One Behind*](#). Paris. UNESCO.

¹⁵⁶ Smith L.C. & Haddad, L. (2015) [*Reducing child undernutrition: past drivers and priorities for post-MDG era*](#). *World Development*. 68. 180–204.

mitigation. Strategy 4.3 Strengthen social protection for poor and vulnerable groups, including disabled and displaced. This objective 4 also covered the 7 programme of pillar-4 under CIP-3.

5.4.1 Strategy 4.1. Improve management of the public food stock and distribution systems

This strategy covered the three areas of intervention (AoI) such as AoI 4.1.1. Inform decision-making and improve planning for price support to farmers, market stabilization and public food distribution AoI 4.1.2. Enhance the management of procurement, public food stocks and price stabilization activities and implement a nutrition-sensitive PFDS and AoI 4.1.3. Ensure adequate storage of food grain maintaining quality and prevent deterioration of stored foodstuffs in the PFDS. This strategy focused on efficient management of public stock to ensure access to staple food for the vulnerable at all times by price stability and maintaining public secure stock. Moreover, this strategy emphasized to provide incentives to farmers by supporting prices, adequate technology-based Modern storage facilities to ensure quality especially focused on nutrition-sensitive PFDS.

Added that **Strategy 4.1** run by under the Third country investment plan (CIP-3) **programme IV.1.** programme Improved management of the public food stock and distribution system.

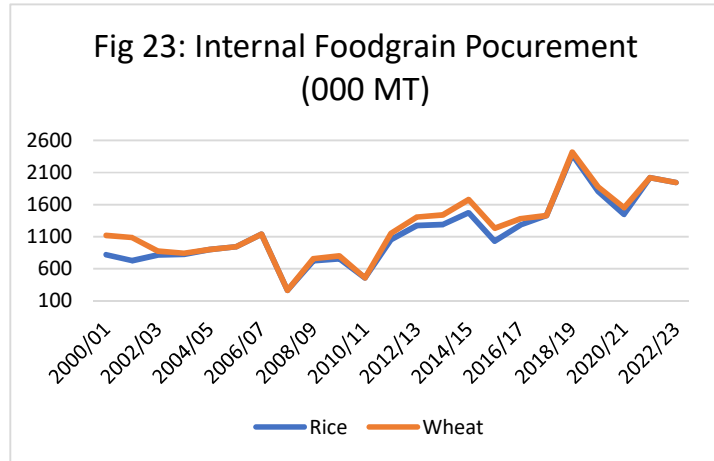
5.4.1. (a) Progress towards achievements

Table 28 - Progress towards achievement of NFNSP Strategy 4.1 and CIP-3 program IV.1

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
% of internal foodgrain procurement target achieved	82.5%	90.5%	105%	112%	DGFood
Actual seasonal Boro Procurement (million M.T)	0.91	1.38	1.35	1.57	DGFood
Total Foodgrain distribution under PFDS (million mt)	2.78	2.29	3.08	3.01	DGFood
PFDS distribution as % of target	101.8%	93.3%	94%	92%	DGFood
Distribution of food grain through PFDS in OMS, FFP & LEI (million MT)	1.24	1.19	1.66	1.46	DGFood
Government stocks at the beginning of the financial year (million mt)	1.6	1.12	1.45	1.85	DGFood
Public storage capacity (million mt)	2.15	2.16	2.18	2.27	MoFood
Effective grain storage capacity at close of fiscal year (million MT)	2.02	2.02	2.04	2.04	DGFood
Average use of effective GoB food grain storage capacity	77%	46%	79%	86%	DGFood/FPMU

Internal foodgrain procurement targets were exceeded

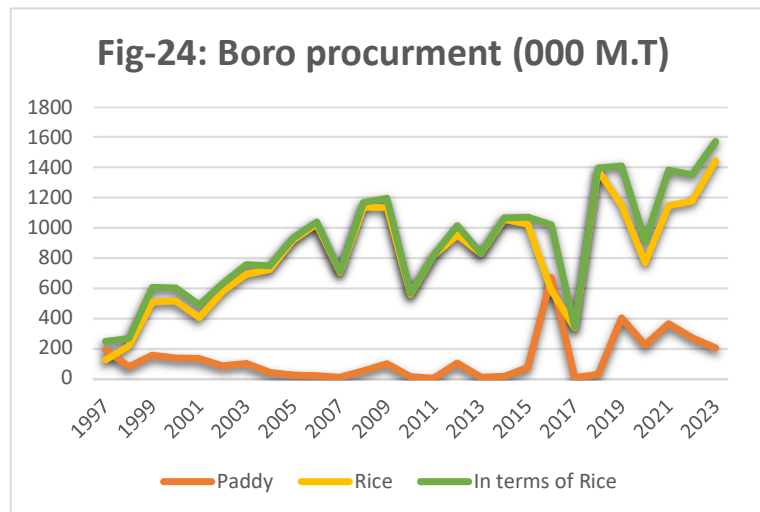
Procuring food grains from the internal market in Bangladesh ensures food security by maintaining adequate reserves, supports local farmers by providing a stable market and fair prices, and contributes to price stability, reducing fluctuations and benefiting both consumers and producers. This approach also reduces dependence on imports, supports government programs aimed at agricultural support and food availability, and leverages logistical advantages for cost-effective procurement within the country.



Ultimately, internal procurement aligns with Bangladesh's goals of achieving self-sufficiency in food production while addressing economic, social, and political objectives. Specially, domestic rice procurement in Bangladesh serves the dual objectives of building rice stocks for the Public Foodgrain Distribution System (PFDS) and providing crucial income support to farmers. Primarily focused on paddy, rice, and wheat, the government procures rice during both the Aman and Boro seasons. In FY 2022-23, the actual foodgrain procurement by the public sector reached 1.94 million metric tons (MMT), exceeding the targeted amount by 112%. This procurement included 0.27 MMT of paddy and 1.77 MMT of rice, which collectively amounted to 1.94 MMT in terms of rice. The record amount of internal procurement from Boro crops has significantly contributed to the government's achievement of its procurement targets

Record Amount of Boro procurement

Boro is one of the largest rice production seasons in Bangladesh, contributing about 53% of the country's total rice output (BBS 2023). Most of the domestic rice procurement takes place during the Boro season harvest. However, public procurements during Boro as a percentage of the target have fluctuated substantially in recent years. From the recently completed Boro 2023 season the government has procured a record amount of 1.44 MMT of rice and 0.2 MMT of paddy, which is equivalent to 1.57 MMT of Boro rice in total. This procurement represents a record amount, marking a

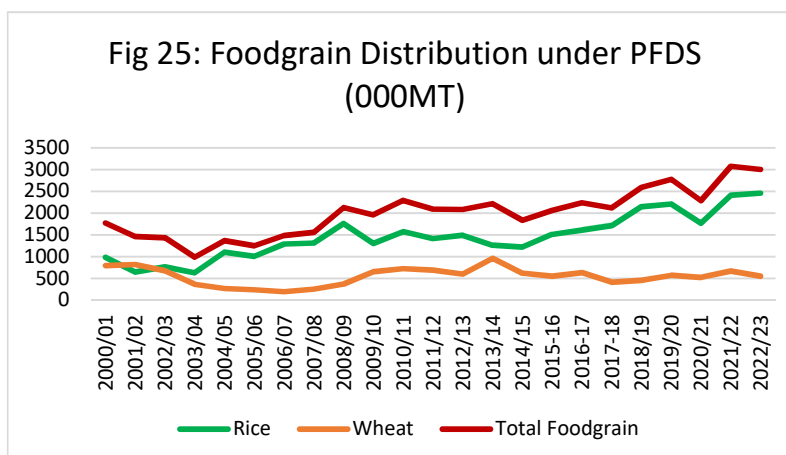


16.3% increase over the previous year's procurement and a 72.5% increase compared to the baseline year.. This successful procurement has bolstered the government's rice reserves and ensured a stable supply of this staple food, enhancing food security and stabilizing market prices. The Ministry of Food has efficiently managed the procurement efforts.. The effectiveness of the government's efforts to support farmers and optimize the Boro rice production season.

A substantial quantity of food grains was distributed through the Public Food Distribution System

The Public Food Distribution System (PFDS) in Bangladesh ensures food security, reduces poverty, maintains price stability, aids disaster response, and supports agriculture by distributing subsidized or free food grains to vulnerable populations, forming a crucial part of the government's multifaceted approach to address socio-economic challenges.

The Public Food Distribution System (PFDS) encompasses various programs such as the Food Friendly Programme (FFP), Vulnerable Women Development (VWD), Open Market Sale (OMS), Essential Priorities (EP), Vulnerable Group Feeding (VGF), Gratuitous Relief (GR), Food For Work (FFW), Hill Tract Area (HT), and others. These programs are designed to target impoverished and vulnerable populations, providing them with essential food assistance by Monetise and Non-Monetise process. In the fiscal year 2022-23, the government of Bangladesh faced the challenge of addressing increased demand for food assistance due to the aftermath of the COVID-19 pandemic and ongoing global crises. Despite these challenges, the government remained committed to ensuring food price stability and access for all citizens. To meet this objective, the government revised its distribution budget and set a target of distributing 3.28 million metric tons (MMT) of food grains through the PFDS. This ambitious target aimed to address the heightened need for food assistance while maintaining stability in food prices across the country. Ultimately, the government's efforts yielded significant results, with 3.01 MMT of food grains successfully distributed during the fiscal year. This achievement represented an impressive 92% of the revised target, highlighting the effectiveness of the PFDS in efficiently delivering food assistance to those in need. One of the largest distribution of food grains under the PFDS played a crucial role in ensuring continued access to food for vulnerable populations, thereby contributing to food security and stability in Bangladesh.



The distribution of food grains through the PFDS under subsidy programs persists

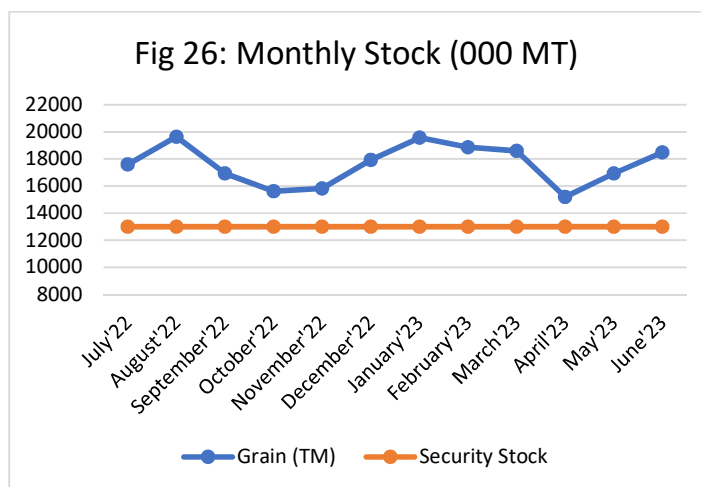
Subsidized distribution of food grain in Bangladesh serves as a multifaceted strategy to address socio-economic challenges, promote food security, alleviate poverty, enhance social stability, build disaster resilience and improve the well-being of its citizens. The Open Market Sale (OMS), Food Friendly Program (FFP), and Large Employee Industry (LEI) programs are crucial components of the subsidized food distribution system under PFDS. The Open Market Sale (OMS) program is a vital food-based social security initiative, particularly targeting urban areas. It counters seasonal price increases of food grains, ensuring economic access to food for low-income individuals. Initially introduced in September 1978, OMS serves as a proactive measure during market volatility, aiming to stabilize prices and alleviate economic burdens. Operated by the Ministry of Food, OMS effectively targets low-income households through authorized dealers and trucks, significantly contributing to price stability and access to food grains, especially during periods of price hikes and economic challenges like the COVID-19 pandemic. Recently OMS has

been extended as a special program about 10 million “TCB family Cards holder” to specific categories of low- income consumers. Under the OMS program about 0.77 MMT food grains has been distributed in FY 2022-23. The "Khaddo-Bandhob Karmasuchi" (Food Friendly Program) represents a keystone initiative aimed at providing crucial support to 5 million rural poor and ultra-poor families in Bangladesh. These beneficiaries include widows, elderly individuals, women-led households, and families living in poverty. Through this program, eligible families are empowered to purchase 30 kg of rice each month at a subsidized rate of 15 Taka per kg during lean seasons, spanning from September to November and March to April. Since its inception in 2016, the Food Friendly Program has steadily evolved into a significant social welfare endeavour, benefiting approximately 25 million individuals across the country. This initiative not only reflects the government's commitment to combating hunger and poverty but also underscores Prime Minister Sheikh Hasina's visionary leadership in ensuring food security and socio-economic development in Bangladesh. In the fiscal year 2022-2023, the program witnessed substantial impact, with 0.66 million metric tons (MMT) of rice distributed to deserving households. Around 115,000 tea garden workers benefit from the Large Employee Industry (LEI) program, receiving wheat allocations. Each worker receives 15 kg of wheat per month. In the fiscal year 2022-2023, approximately 20.10 thousand metric tons (MT) of food grains were distributed through this initiative. Under the above mentioned three programs (OMS, FFP, LEI) about 1.46 MMT foodgrains has been distributed which was 48.4% of total distribution under PFDS.

Public Food Grain Stock Maintained at Satisfactory Levels

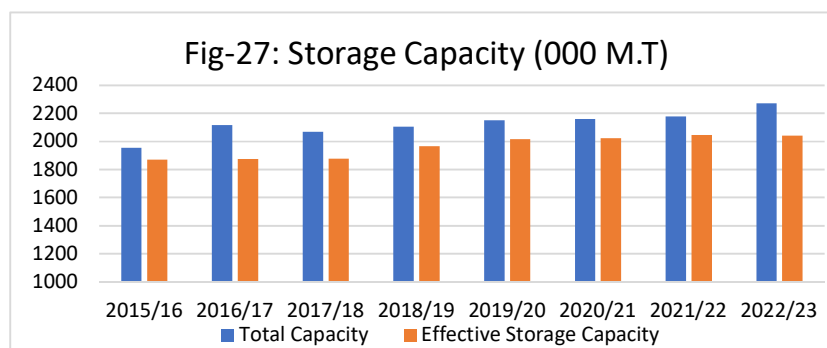
The Bangladesh government maintains a security stock of food grain to ensure emergency preparedness, stabilize food prices, and support various government programs. This strategic reserve acts as a buffer against market volatility and helps safeguard food security and stability in the country. Public food stock plays a crucial role in stabilizing food prices and supporting the public food distribution system. To maintain a healthy stock and stabilize food prices, the government procures

food grains from both internal and external sources. According to the National Food and Nutrition Policy 2020, a secure stock of 1.05 million metric tons (MMT) of food grain was considered at the beginning of the fiscal year (FY). Additionally, the Food Planning and Monitoring Committee (FPMC) determined that 1.3 MMT of food grains are necessary for normal conditions and 1.4 MMT for crisis conditions, based on factors such as food grain price stability, PFDS volume and coverage, and vulnerability to shocks. In FY 2022-23, the government's stock stood at 1.84 MMT at the beginning of the fiscal year, marking a 27% increase compared to the same period of the previous year and a 41.5% surplus relative to the defined secure stock of PFDS, which was maintained at a satisfactory level. The average closing stock of food grains per month during the fiscal year was approximately 1.76 MMT.



The public grain storage capacity experienced a noticeable enhancement

The Bangladesh government expanded food grain storage capacity for diverse reasons. Firstly, to ensure enhanced food security by maintaining larger reserves, particularly during emergencies.



Secondly, increased capacity establishes strategic reserves to stabilize prices and address market fluctuations, shielding consumers from sudden price hikes. Thirdly, larger storage facilities facilitate efficient procurement, storage, and distribution, ensuring timely access to essential food items for vulnerable populations. Additionally, adequate storage minimizes post-harvest losses, preserving food quality and quantity. Lastly, amidst climate change challenges, expanded capacity enhances resilience by enabling better management of food supply chains and mitigating the impact of crop losses on availability. This proactive measure aims to bolster food security, stabilize prices, improve distribution efficiency, and build resilience against climate change impacts. In 2022-23, the total storage capacity for food grain in Bangladesh reached approximately 2.27 million M.T. To mitigate food grain losses, The Modern Food Storage Facilities Project aims to enhance storage capacity and modernize management practices. As part of this initiative, the government is constructing eight steel silos, with five designated for rice and three for wheat; two of these silos have been completed. Additionally, plans are underway to establish 200 paddy silos in key paddy hub areas. To incentivize farmers, the government is piloting the construction of paddy silos in these areas. With aspirations outlined in the 8th Five-Year Plan (8FYP), the government aims to increase public grain storage capacity to 3.7 million metric tons. Despite experiencing only a marginal increase in effective grain storage capacity to approximately 2.04 million metric tons (MMT) in 2022-23 compared to the base year, by the end of 2023, the total effective grain storage capacity reached satisfactory levels in relation to the overall storage capacity, signifying an improvement in capacity utilization and management over time.

Remarkable progress in Average use of effective GoB food grain storage capacity

There has been notable advancement witnessed in the average utilization of the effective Government of Bangladesh (GoB) food grain storage capacity, indicating substantial steps in optimizing storage resources and enhancing operational efficiency. Throughout the fiscal year 2022-23, there was a significant improvement noted in the average utilization of food grain storage capacity, reaching 86%. This increase of 9% compared to the previous year and an even more substantial 11% rise from the baseline year in 2019-20. It reflects enhanced efficiency in storage management. It's crucial to acknowledge the seasonal nature of procurement activities and the inherent constraints of traditional storage facilities, where achieving around 75% utilization is considered nearly reaching full capacity. This notable enhancement in utilization underscores the strengthened ability to cope with unexpected shocks and demands effectively. It highlights the improved resilience of the Public Food Distribution System (PFDS), indicating its enhanced capacity to fulfil the needs of the population, particularly during times of crisis or heightened demand.

5.4.1. (b) Policy challenges and recommendations for further actions

Utilize Big Data Analytics for Informed Decision-Making

The potential of big data analytics will be leveraged to assess foodgrain availability, estimate required imports, set procurement prices and quantities, and plan Public Food Distribution System (PFDS) operations. Modern ICT-based analyses and forecasting techniques will be adopted to strengthen the analytical capabilities of FPMU and other relevant bodies.

Enhance monitoring of food prices, stocks, domestic production, and imports to guide procurement and PFDS decisions

Efforts to bolster monitoring of foodgrain prices, stocks, domestic production, and imports will be intensified. The Food Planning and Monitoring Unit (FPMU) currently compiles reports from various agencies, including the Department of Agricultural Marketing (DAM), Directorate of Agricultural Extension (DAE), Bangladesh Bureau of Statistics (BBS), Directorate of Food, and Bangladesh Bank. A key focus will be on improving data exchange between these agencies by establishing an inter-agency Food and Nutrition Security (FNS) data sharing mechanism. Additionally, innovative methods for estimating private stocks will be developed to enhance the accuracy of government procurement and distribution decisions.

Establish Interministerial Coordination Mechanism

An inter-ministerial coordination mechanism will be established to enhance data integration across ministries, facilitating the harmonization and sharing of information regarding food grain production, prices, stocks, and imports. This platform will promote collaboration among agriculture, trade, finance, and food distribution ministries, enabling the exchange of insights and data from various sources such as the Department of Agricultural Marketing and Bangladesh Bank. By consolidating information, informed decisions can be made regarding procurement and management of the Public Food Distribution System (PFDS). Real-time data on production levels, prices, and stocks will optimize distribution efforts, while facilitating proactive responses to market fluctuations. This initiative promotes synergy and collaboration among government agencies, enhancing decision-making efficiency and ultimately contributing to improved food security and PFDS operations.

Implement Distribution of Non-Foodgrain Items

To implement the distribution of non-foodgrain items through the Public Food Distribution System (PFDS), comprehensive plans will be formulated and executed across the nation. These plans will encompass a wide range of nutritious non-foodgrain items such as pulses, edible oils, fortified foods, and hygiene products, among others, to complement the staple foodgrains distributed through the PFDS. A key aspect of this initiative will be the development of tailored approaches to accommodate regional variations in dietary preferences, nutritional needs, and cultural norms. This entails conducting thorough assessments to understand the specific requirements and preferences of communities in different regions. For example, coastal regions may have a higher demand for fish or seafood products, while inland areas may prioritize pulses or dairy products. Based on these assessments, distribution plans will be customized to ensure that non-foodgrain items are relevant, accessible, and acceptable to beneficiaries. This may involve collaborating with local producers and suppliers to source items that are locally available and culturally appropriate. Additionally, awareness campaigns and nutrition education initiatives will be conducted to promote the consumption of these non-foodgrain items and raise awareness about their nutritional benefits. Furthermore, efforts will be made to ensure the efficient distribution and monitoring of non-foodgrain items through the PFDS network. This may include strengthening logistics and supply chain management systems, establishing transparent distribution mechanisms, and implementing robust monitoring and evaluation frameworks to track the reach and impact of the distribution programs. Overall, the implementation of non-foodgrain distribution through the PFDS represents a holistic approach to addressing nutritional deficiencies and promoting food security among vulnerable populations. By tailoring

distribution plans to regional needs and preferences and leveraging local resources and expertise, this initiative aims to enhance the nutritional diversity and well-being of beneficiaries nationwide.

Promote Modernize Storage Infrastructure

Modernizing storage infrastructure is imperative to overcome the challenge posed by limited land availability for traditional horizontal storage facilities. The government will prioritize the development of vertical storage facilities, which offer a more space-efficient solution. These vertical storage facilities will be strategically located across the country to ensure accessibility and efficiency in distribution networks. Utilizing modern technology will be a key aspect of these facilities. Mechanized bagging systems will streamline the packaging process, ensuring consistency and efficiency in storing foodgrains. This automation will also reduce the risk of human error and contamination, thereby maintaining the quality of stored grains. Furthermore, advanced weighing equipment will be integrated into the storage facilities to accurately measure and record the quantities of foodgrains being stored. This data will be crucial for inventory management and procurement planning, allowing for more informed decision-making. Enhanced drying methods will also be implemented to mitigate the risk of moisture damage, which can lead to spoilage and loss of quality in stored foodgrains. State-of-the-art drying technologies will ensure that grains are properly dried before storage, reducing the likelihood of mold growth and preserving their shelf life. Overall, the modernization of storage infrastructure through vertical storage facilities equipped with advanced technology will significantly improve the efficiency, reliability, and quality maintenance of stored foodgrains. This investment will enhance food security efforts and contribute to the effective functioning of the food distribution system.

Implement Regular Stock Rotation

Efficient stock rotation practices are crucial for maintaining the quality and freshness of stored foodgrains, thereby preventing spoilage and loss. To achieve this, a comprehensive approach will be adopted, focusing on both local and national levels of stock management. At the local level, storage facilities will implement regular rotation schedules based on the principles of FIFO (First-In-First-Out). This means that older stocks will be distributed or utilized first, ensuring that newer arrivals are kept in optimal conditions for longer periods. Storage managers will be trained to monitor inventory levels closely and implement rotation protocols accordingly. Moreover, the monitoring systems at storage facilities will be upgraded to facilitate real-time tracking of stock movements and conditions. This may involve the adoption of modern inventory management software or electronic tracking systems that provide accurate and timely information on stock levels, expiry dates, and storage conditions. At the national level, centralized monitoring mechanisms will be established to oversee the stock rotation practices across various storage facilities. This centralized oversight will enable authorities to identify potential bottlenecks or inefficiencies in the stock management process and take corrective measures promptly. Regular audits and inspections will be conducted to ensure compliance with stock rotation protocols and quality standards. Any deviations or discrepancies will be addressed promptly to maintain the integrity of the stored foodgrains. Overall, the implementation of efficient stock rotation practices coupled with upgraded monitoring systems will contribute to the preservation of foodgrain quality and mitigate the risk of losses due to spoilage or deterioration. This proactive approach to stock management will enhance food security and support the effective functioning of the Public Food Distribution System (PFDS).

Develop Storage for New PFDS Items

To boost the nutritional sensitivity of the Public Food Distribution System (PFDS), specialized storage infrastructure will be developed for nutrient-dense foods like fruits, vegetables, dairy products, and protein-rich items. Extensive research and feasibility studies will inform decision-making, addressing factors such as optimal storage conditions and market demand. A nationwide rollout plan for modern storage facilities will be implemented, equipped with technology to maintain nutritional quality. Measures like controlled temperature and humidity, ventilation systems, and proper packaging will prevent spoilage. Stringent

protocols will tackle storage challenges such as pest infestation and contamination, ensuring hygienic conditions. Collaboration with stakeholders will be pivotal for success, fostering innovation to enhance PFDS-distributed foods' nutritional quality. This proactive approach lays the groundwork for a nationwide network of storage facilities dedicated to preserving the integrity of vital nutrient-rich foods.

5.4.2 Strategy 4.2. Improve disaster preparedness, responses, rehabilitation and mitigation:

This strategy consists of the four areas of intervention such as AoI 4.2.1. Increase the resilience of agriculture systems through various mechanisms notably climate-smart technologies, adoption of stress-tolerant crop varieties and implementation of good agriculture, animal husbandry and fisheries practices for the production of healthy foods, AoI 4.2.2. Increase the disaster-coping ability of poor farming families, support home-based farming especially through Amar Bari Amar Khamar (My Home My Farm), and protect poultry, livestock and other assets, AoI 4.2.3. Ensure operation of emergency shelters with nutritious and safe food, safe drinking water, sanitation and healthcare for disaster-affected people, especially for women, elderly, disabled and children, and AoI 4.2.4. Facilitate and coordinate disaster response, mitigation and rehabilitation through timely and strategic storage of public food stock, rapid distribution to disaster-affected people, and effective mobilization through various modalities including public-private partnerships.

Added that **Strategy 4.2** covered 4 programme of CIP3; **programme IV.2.** Increased resilience of agriculture systems, **Programme IV.3.** Disaster-coping ability of vulnerable families as well as **Programme IV.4.** Facilitation and coordination of disaster response, mitigation and rehabilitation respectively.

5.4.2.(a) Progress towards achievement

Table 29 - Progress towards achievement of NFNSP Strategy 4.2 and CIP-3 program (IV.2-IV.4)

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Annual change in agricultural rehabilitation budget allocation	9.17%	12.9%	33.3%	25%	MoF
Total number of usable cyclone shelters	4068	4168	4388	4708	MoDMR
No. of disaster resistant homes built in rural areas to cope with the impact of climate change and disaster risk	17,004	66,112	48,591	24613	MoDMR
Distribution of food grain through PFDS in relief work (million M.T)	1.18	0.73	1.03	1.15	DG Food
Annual % change in the development budget allocated to disaster management and relief	33.8%	(-)13.7%	13.5%	(-) 0.6%	MoF

The increase in allocation for agricultural rehabilitation budget reflects a positive response.

The Bangladesh government allocates a budget for agricultural rehabilitation to address multifaceted challenges facing its agricultural sector. Natural disasters such as floods, cyclones, and droughts frequently disrupt farming activities, necessitating financial support for farmers to rebuild infrastructure and replenish lost resources. Moreover, with the looming threat of climate change, investments in adaptation measures become imperative to mitigate its adverse effects on crop yields and livestock productivity. Recognizing agriculture as pivotal for rural development

and poverty reduction, the government channels funds towards enhancing productivity through research, extension services, and training programs. By fostering resilience and innovation within the agricultural sector, these initiatives not only bolster food security but also reduce dependency on imports, ensuring a stable domestic food supply amidst market fluctuations. Thus, the allocation of resources for agricultural rehabilitation stands as a cornerstone in Bangladesh's pursuit of sustainable agricultural development and socio-economic progress. The National Food and Nutrition Security Policy (NFNSP) 2020, along with its Plan of Action Strategy 4.2, underscores the imperative of enhancing disaster preparedness, responses, rehabilitation, and mitigation, as encapsulated by AoI 4.2.4. This strategy aims to fortify FNS-related disaster responses, mitigation efforts, and rehabilitation endeavours during and post-disasters. Agricultural rehabilitation, a pivotal component of this strategy, entails rejuvenating land to a productive state following degradation or desertification. It encompasses diverse activities such as land recultivation, soil fertility enhancement, vegetation restoration, erosion control, and introduction of drought-resistant crops. The overarching objective is to bolster production, foster water conservation, and advocate sustainable land management practices. Notably, the FY 2022-23 witnessed a commendable 25% surge in the agricultural rehabilitation budget allocation compared to the preceding fiscal year. This increment represents a noteworthy 16% rise from the base year allocation, signifying a proactive response aimed at sustaining the upward trajectory of the agricultural sector.

The number of cyclone shelters is steadily increasing.

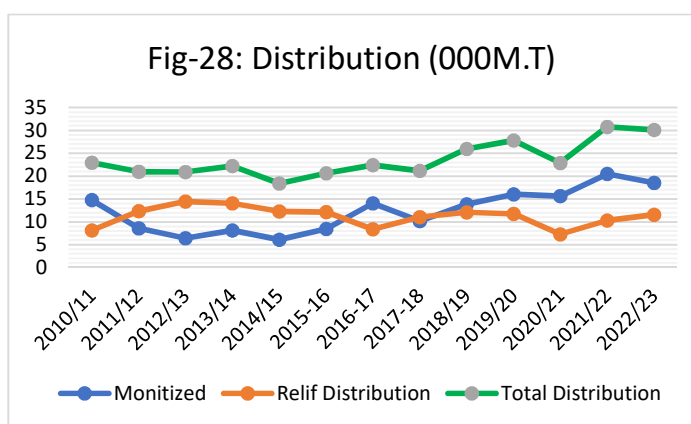
Bangladesh is highly susceptible to natural disasters due to its geographic location and flat terrain. Cyclones, floods, and river erosion are frequent occurrences, posing significant challenges to the country's development and livelihoods. The densely populated coastal areas are particularly vulnerable, facing the brunt of cyclonic storms and rising sea levels. These disasters disrupt lives, destroy infrastructure, and threaten food security. Despite proactive measures by the government to mitigate risks and improve disaster preparedness, Bangladesh continues to grapple with the impacts of natural calamities, underscoring the urgent need for sustainable solutions to adapt to and mitigate these challenges. NFNSP 2020 emphasizes enhancing disaster preparedness, response, and rehabilitation, as per AoI 4.2.4, aiming to bolster food and nutrition security. The Bangladesh government builds cyclone shelters to protect its citizens from the devastating impact of cyclones, which are frequent natural occurrences in the region. These shelters serve as safe havens where people can seek refuge during cyclonic storms, providing them with a secure environment to ride out the severe weather conditions. Given Bangladesh's vulnerability to cyclones due to its geographical location and flat terrain, these shelters are crucial for mitigating the loss of lives and property damage caused by such disasters. By investing in cyclone shelters, the government demonstrates its commitment to ensuring the safety and well-being of its population, particularly those residing in vulnerable coastal areas prone to cyclonic events. Moreover, these shelters also contribute to disaster preparedness efforts, allowing for timely evacuation and reducing the overall impact of cyclones on communities. The number of usable cyclone shelters increased from 4,388 in 2021-22 to 4,708 in 2022-23. The shelters built serve as primary schools, and when cyclones and other natural disasters occur, they double up as shelters. Emphasis is also given to building connecting roads and communication networks to shelters to ensure easy accessibility.

There was a notable rise in the number of rural communities equipped with disaster-resilient habitats.

The construction of disaster-resilient habitats by the Bangladesh government stands as a critical strategy in safeguarding communities and infrastructure against the devastating impacts of natural disasters, including cyclones and floods. These habitats are meticulously designed to withstand the brunt of extreme weather events, offering secure shelter and protection to vulnerable populations. Through investments in resilient infrastructure and urban planning, the government endeavours to curtail the loss of life, property damage, and displacement caused by such disasters. Moreover, these initiatives contribute to the broader goals of sustainability and resilience, fostering safer environments for citizens while alleviating the economic burden of post-disaster reconstruction. Notably, the government's commitment is evidenced by the construction of 24,613 disaster-resilient habitats in rural communities during the fiscal year 2022-23. These habitats integrate various elements such as structural safety, adaptive technology, sustainable livelihoods, early warning systems, and community cooperation. It is crucial that short-term recovery measures are coupled with sustained investment in long-term risk reduction, ensuring that communities break free from the cycle of repeated disasters. Through this holistic approach, Bangladesh aims to enhance its overall disaster preparedness and response capabilities, thereby fostering greater resilience in the face of natural calamities.

The distribution of food grain through PFDS for relief work has increased.

The distribution of food grain by the Bangladesh government during times of crisis, such as natural disasters or humanitarian emergencies, serves as a crucial lifeline for vulnerable populations facing immediate food shortages. These relief efforts are essential in providing essential sustenance to those who may have been displaced, lost their livelihoods, or encountered disruptions in food



supply chains due to the calamity. By ensuring access to food grain, the government plays a pivotal role in preventing hunger, malnutrition, and food insecurity among affected communities, thereby safeguarding their well-being during challenging times. Moreover, these relief initiatives underscore the government's unwavering commitment to supporting its citizens in times of adversity, fostering social welfare, and promoting stability across the nation. Through such actions, the government demonstrates its responsiveness and dedication to addressing the urgent needs of its people during crises, ultimately reinforcing societal resilience and cohesion.

The Plan of Action (PoA) outlined in the National Food and Nutrition Security Policy (NFNSP) 2020 underscores the pivotal role of the Public Food Distribution System (PFDS) in providing essential relief during emergency periods, such as natural disasters, and in targeted food distributions to address chronic food insecurity. The implementation of PFDS operations considers various factors, including livelihood coping strategies and vulnerability across different times and seasons. In the fiscal year 2022-23, a significant distribution of 1.15 million metric tons (MMT) of food grains occurred through this non-monetized relief work program. This amount represents a notable increase of about 12% compared to the previous fiscal year. These distributions play a crucial role in ensuring that vulnerable populations have access to adequate food supplies during

times of crisis, demonstrating the government's commitment to addressing food insecurity and mitigating the impacts of disasters on affected communities.

The budget allocated to disaster management experienced a slight decrease.

The Bangladesh government strategically reallocates its development budget towards disaster management and relief efforts to bolster the nation's preparedness and response capabilities. This reallocation ensures that sufficient resources are available to effectively mitigate the impact of recurrent natural disasters, safeguarding both lives and critical infrastructure. By prioritizing investment in disaster management initiatives, such as early warning systems, emergency shelters, and community resilience programs, the government aims to minimize the adverse effects of disasters on vulnerable populations and key sectors of the economy. This proactive approach not only helps in saving lives during emergencies but also contributes to long-term resilience-building efforts, fostering a more resilient and disaster-resilient Bangladesh. Bangladesh has made remarkable success in recent decades, achieving notable progress in economic growth, poverty reduction, and food and nutrition security (FNS). However, the country faces a significant challenge posed by the increasing frequency of natural disasters. These disasters, exacerbated by climate change, are reshaping Bangladesh's disaster profile in terms of types, frequency, intensity, locations, and predictability. Various climate vulnerabilities, including cyclones, soil degradation, loss of biodiversity, salinity, water level rise, and seasonal flooding, affect different regions. Given the country's geographical diversity, it's crucial to support marginalized and hard-to-reach communities, as well as socially and economically vulnerable families, to ensure food and nutrition security. The Government of Bangladesh recognizes the importance of assisting those affected by floods, droughts, and other adverse climatic events. To enhance disaster preparedness, response, rehabilitation, and mitigation, the development budget of the Ministry of Disaster Management and Relief has seen a significant increase. However, it's noteworthy that the annual development budget allocation experienced a slight decrease of 0.6% in 2022-23 compared to the previous fiscal year. Despite this, the government's commitment to addressing the challenges posed by natural disasters remains steadfast, aiming to build resilience and safeguard the well-being of its citizens in the face of evolving climate-related threats.

5.4.2.(b) Policy challenges and recommendations for further actions

Allocating funds towards emergency shelters and fortifying infrastructure against disasters

The government is committed to increasing investments in emergency shelters and disaster-proof infrastructure, with a particular focus on multipurpose buildings, building upon the achievements of the Multipurpose Disaster Shelters Project. These multipurpose buildings have demonstrated their effectiveness in providing shelter and support during emergencies. Priority will be given to upgrading existing shelters to meet comprehensive standards, ensuring they are equipped with essential facilities such as water, sanitation, and healthcare. Moreover, special attention will be paid to catering to the specific needs of vulnerable groups, including children, the elderly, and people with disabilities. These upgraded shelters will provide a safe and supportive environment for all individuals affected by disasters. Furthermore, public buildings will be fortified to serve as resilient shelters during emergencies. This approach aligns with broader efforts to enhance community resilience and coping mechanisms in the face of disasters. By repurposing existing infrastructure, the government can maximize resources while ensuring that communities have access to safe and reliable shelter options when disaster strikes. Overall, these investments will play a crucial role in safeguarding lives and minimizing the impact of disasters on vulnerable populations across the country.

Creating a Vulnerability Index Relevant to Policy Development

A comprehensive vulnerability index will be developed as a critical tool to evaluate disaster risks across Bangladesh. This index will serve as a valuable resource for decision-makers, aiding in the prioritization of resources and monitoring the allocation of these resources. By integrating various factors such as poverty levels, historical disaster data, weather patterns, and indicators of climate change, the index will provide a holistic assessment of vulnerability to disasters. Drawing from insights obtained from the Delta Plan, which highlights the correlation between high poverty rates and increased disaster risks in certain districts, the vulnerability index will prioritize areas most susceptible to adverse events. Leveraging Bangladesh's extensive database on past disasters, meteorological conditions, environmental factors, and food security, the index will be developed with a robust foundation of empirical evidence. The goal of this index is to offer decision-makers a clear and transparent framework for understanding disaster risks and formulating effective strategies for mitigation and response. By synthesizing diverse datasets and analysing multidimensional factors contributing to vulnerability, the index will facilitate informed decision-making and resource allocation to enhance resilience and minimize the impact of disasters on communities across Bangladesh.

Utilizing Public-Private Partnerships (PPPs) for Shelter Capacity:

To rapidly expand shelter capacity, the government will harness the potential of public-private partnerships (PPPs). Building upon the principles outlined in the 2011 Cyclone Shelter Construction, Maintenance, and Management Policy, commercial buildings will be repurposed in regions where public shelters are lacking. This innovative approach allows for the utilization of existing infrastructure to meet immediate shelter needs during emergencies. A streamlined process for establishing Memoranda of Understanding (MoUs) between the government and private sector entities will be developed. This process will ensure efficient collaboration and clear delineation of roles and responsibilities. Relevant officials will receive training to facilitate effective implementation and management of these partnerships. By leveraging PPPs, the government aims to enhance shelter capacity across the country in a cost-effective and timely manner. This collaborative effort between the public and private sectors will not only provide additional shelter options for communities in need but also promote resilience and preparedness for future disasters. Overall, this initiative exemplifies a proactive approach to addressing shelter challenges and strengthening disaster response capabilities.

Strengthening Disaster Management Policies and Procedures:

The government is committed to strengthening disaster management policies and procedures to ensure effective preparedness, response, and recovery efforts. This includes enacting a comprehensive legal framework to implement Standing Orders on Disasters, providing clear guidelines and protocols for disaster management activities. One of the key focuses will be on enhancing the functionality of union and upazila disaster management committees. These local-level committees play a critical role in coordinating disaster response efforts and ensuring that resources are effectively mobilized at the grassroots level. By strengthening these committees, the government aims to improve coordination, communication, and decision-making processes during all phases of disaster management. Existing legal instruments, such as the Disaster Management Act and the National Disaster Management Policy, serve as the foundation for enhancing disaster resilience and response mechanisms. These instruments provide the necessary framework for coordinating efforts across government agencies, as well as with non-governmental organizations and other stakeholders. By bolstering disaster management policies and procedures, the government seeks to enhance the overall effectiveness of its disaster response efforts, minimize the impact of disasters on communities, and promote resilience and recovery in the face of future challenges.

Enhancing Pre-Positioning of Public Food Stocks and Logistics:

Efforts to improve the pre-positioning of public food stocks will leverage tools like data analysis, ICT, and early warning systems for enhanced disaster response. The Central Aid Management System (CAMS)

software, managed by the Department of Disaster Management, will streamline food aid distribution, facilitating faster response times and better coordination among stakeholders. Strengthening logistics capacity involves assessing national capabilities, identifying gaps, and refining resource allocation strategies. By integrating data, ICT, and early warning systems and enhancing logistics, authorities aim to ensure prompt and targeted assistance to disaster-affected communities.

Encouraging Private Sector Involvement and Attention to Nutrition

Encouraging private sector involvement in disaster response is crucial, especially in mobilizing food stocks and improving humanitarian logistics post-disaster. By tapping into the private sector's expertise and resources, the government can enhance its response efficiency and coordination during emergencies. Emphasis will also be placed on leveraging advanced technologies like Information and Communication Technology (ICT) and drones to enhance disaster response capabilities, facilitating rapid assessment, communication, and aid delivery. Furthermore, nutrition will be a key focus in disaster preparedness and response efforts. This involves integrating nutrition coordination committees into disaster management structures to ensure adequate nutrition support for vulnerable populations, particularly women and children, during and after disasters. Gender considerations will be prioritized to address the unique vulnerabilities of women and girls in emergencies. Additionally, broader nutrition-sensitive measures will be integrated into disaster planning and response frameworks to address underlying factors contributing to malnutrition and promote community resilience. Strengthening monitoring and human capacities at all levels of the disaster management system will be pivotal, involving training on gender-sensitive approaches, enhancing data capabilities, and fostering collaboration among stakeholders. This comprehensive approach aims to mitigate the impact of disasters and safeguard the well-being of Bangladesh's population in times of crisis.

5.4.3 Strategy 4.3. Strengthen social protection for poor and vulnerable groups, including disabled and displaced. This strategy covered the four areas of intervention such as AoI 4.3.1. Strengthen social protection in disadvantaged areas and for disadvantaged groups, AoI 4.3.2. Ensure safety nets for the poorest and nutritionally vulnerable, especially female-headed households, during periods of seasonal crises and food shortages, AoI 4.3.3: Develop and implement nutrition-sensitive social protection programs, including food fortification, nutrition education, and behaviour change communications, and AoI 4.3.4. Ensure proper coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development.

On the other hand, Strategy 4.3. run by under the country investment plan 3 programme IV.5 Strengthened social protection in disadvantaged areas and for disadvantaged groups with particular attention to nutrition sensitivity, Programme IV.6. Safety-nets in place during periods of seasonal crises and food shortages and Programme IV.7. Coordination and cooperation to integrate social protection with agricultural development, income generation, and micro- entrepreneurship development respectively.

5.4.3 (a)Progress towards achievement

Table 30: Progress towards achievement of NFNSP Strategy 4.3 and CIP-3 program (IV.5-IV.6)

NFNSP & CIP3 output proxy indicators	2019/20	2020/21	2021/22	2022/23	Source
Number of beneficiaries in VWB programmes (million)	1.00	1.04	1.04	1.04	MoWCA
Number of beneficiaries in Mother and Child Benefit Schemes (million)	1.04	1.04	1.05	1.25	MoWCA
Share of fortified rice in PFDS (%)	4.79%	7.73%	10.20%	7.15%	DG Food
Number of children covered by the School Feeding Programs in Poverty Prone Areas (million)	2.76	3.00	2.95	--	MoPME
Food security and Income generation Programs budget as % of Social safety net programs budget	19.01 %	15.49%	14.14%	14.61%	MoF
Number of beneficiaries in Food security and Income generation Programs(million)	23.01	34.85	39.14	45.4	MoF
Number of trained young people (thousands)	311	284.5	303.8	170.23	MoYS

The VWB program remains committed to empowering and supporting beneficiaries

The Bangladesh government initiated the Vulnerable Women Benefit (VWB) program as a strategic response to address the socio-economic challenges faced by vulnerable women across the nation. Recognizing the significant barriers that hinder women's access to opportunities and resources, such as poverty, limited education, and societal discrimination, the government designed VWB to empower and uplift these marginalized groups. By providing food, targeted financial assistance, vocational training, and support services, the program aims to enhance the economic independence and social well-being of vulnerable women, enabling them to break free from cycles of poverty and exclusion. VWB aligns with Bangladesh's commitment to achieving gender equality and women's empowerment, as outlined in national development agendas and international frameworks like the Sustainable Development Goals (SDGs). Through VWB, the government demonstrates its dedication to fostering inclusive growth and addressing the needs of its most marginalized populations. Moreover, The Vulnerable Women Benefit (VWB) program in Bangladesh has a targeted approach aimed at reaching ultra-poor rural women, providing them with essential support to improve both their nutritional intake and livelihood opportunities, thus fostering self-reliance. From its inception, VWB has demonstrated tangible growth, with coverage increasing marginally from 1.00 million person months in the base year to 1.04 million in 2022-23. Furthermore, the program's Investment Component for VWB (IC VWB) has been piloted with 10,000 beneficiaries. This component introduces a comprehensive support package, including a cash grant of 15,000 BDT for investment, provision of 30 kg of fortified rice, and extensive training sessions covering livelihoods, entrepreneurship, financial management, and nutrition behaviour change communication (BCC). Following a successful pilot phase, plans are underway to upscale the IC VWB, aiming to extend its reach to 100,000 women across 64 subdistricts starting

from 2019-20. Such initiatives underline the government's commitment to enhancing the socio-economic status of vulnerable women while fostering sustainable development at the grassroots level.

The coverage of beneficiaries in Mother and Child Benefit programs has expanded significantly

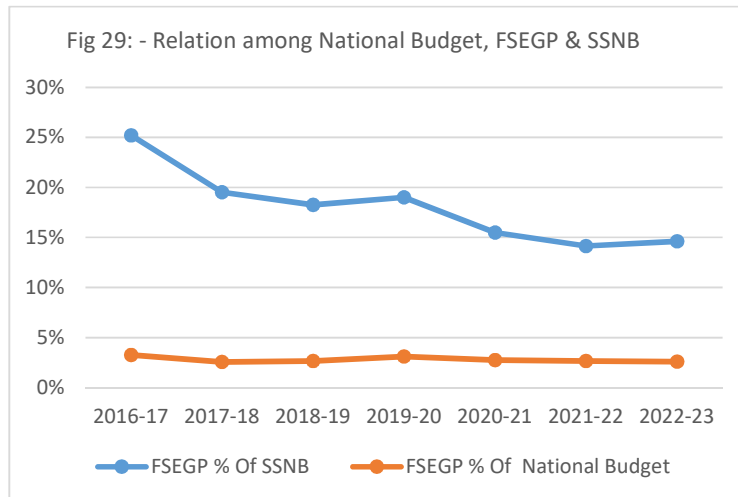
The Ministry of Women and Children Affairs operates three specialized programs aimed at addressing crucial aspects of mother and child nutrition. These programs include Maternal Allowance for Poor Mothers, Lactating Allowance for Working Mothers, and the Mother and Child Benefit Scheme. The Bangladesh government has instituted Mother and Child Benefit programs to address the critical health and welfare needs of mothers and children nationwide. These initiatives acknowledge the pivotal role of maternal and child health in national development, aiming to enhance access to essential healthcare services, nutrition, and support systems. By implementing such programs, the government seeks to reduce maternal and child mortality rates, improve overall well-being, and ensure a healthier future generation.

Aligned with Bangladesh's commitment to achieving Sustainable Development Goals related to health and gender equality, these programs contribute to fostering inclusive growth and social progress. Each initiative within these programs targets specific needs within the realm of maternal and child nutrition, offering comprehensive support to vulnerable mothers and their children. Through these efforts, the government endeavours to alleviate poverty, enhance access to nutritious food, and improve healthcare services for mothers and children across the country. By prioritizing maternal and child nutrition, these initiatives significantly contribute to reducing malnutrition rates, promoting healthy development, and ensuring a brighter future for generations to come. The coverage of beneficiaries under the Mother and Child Benefit Scheme has seen a slight increase, rising from 1.04 million in 2021-22 to 1.25 million in 2022-23. Administered directly by the government, this scheme plays a crucial role in providing vital financial assistance to those in need across Bangladesh. It extends support to various groups, including pregnant women, single mothers, and new mothers facing financial hardships, as well as disabled children and those from disadvantaged backgrounds. Through this scheme, beneficiaries gain access to allowances covering essential expenses such as medical treatment, nutrition, and other basic needs, ensuring the well-being and development of mothers and children nationwide.

Both the budget allocation and coverage for Food Security and Income Generation Programs have been expanded.

The Bangladesh government has undertaken Food Security and Income Generation Programs to address the pressing issues of poverty and hunger within the nation. Recognizing the fundamental importance of food security and economic stability, these programs aim to provide vulnerable populations with access to nutritious food and opportunities for sustainable income generation. By

implementing such initiatives, the government seeks to alleviate poverty, improve living standards, and foster economic empowerment among marginalized communities. These programs are crucial in ensuring the overall well-being and resilience of the population, contributing to the country's efforts in achieving sustainable development goals and building a more inclusive society. Presently, Bangladesh operates 115 social security programs, primarily aimed at supporting the impoverished and vulnerable segments of society. Among these, 11 programs are dedicated to Food Security and Income Generation, reflecting the government's commitment to addressing poverty and hunger. The National Food and Nutrition Security Policy underscores the importance of safeguarding the most economically and nutritionally vulnerable, particularly female-headed households, during seasonal crises and food shortages. Notably, the budget allocated for Food Security and Employment Generation Programs (FSEGP) has increased by 9% compared to the previous fiscal year's revised budget, accounting for 14.61% of the total Social SafetyNet Budget (SSNB). This budget allocation constitutes 2.6% of the national budget and 0.39% of GDP. Responding to the additional demand arising from the post-COVID impact and global food price shocks, the number of beneficiaries in Food Security and Income Generation Programs has risen. The total coverage now stands at approximately 4.54 million, representing a 5.83% increase compared to the previous fiscal year.



Fortified rice distribution under the Public Food Distribution System (PFDS) continues.

The Bangladesh government's distribution of fortified rice in the public food system is a crucial step towards addressing malnutrition and improving public health outcomes. Branded as Pushti Chal in Bangla, this fortified rice contains six essential vitamins and minerals vital for maintaining overall health and preventing nutritional deficiencies, including vitamin A, B1, B12, Folic Acid, Iron, and Zinc. These nutrients are incorporated into rice flour to create pre-mix kernels, which are then blended with regular rice in a 1:100 ratio. Fortified rice maintains the same shape, colour, and texture as regular rice and undergoes a similar cooking process. By integrating fortified rice into the food distribution system, the government aims to enrich the staple food consumed by a significant portion of the population, especially vulnerable groups such as pregnant women, children, and the elderly. This proactive approach aligns with Bangladesh's commitment to combating malnutrition and enhancing the well-being of its citizens, thereby contributing to broader public health objectives. Additionally, the distribution of fortified rice serves as an efficient and cost-effective strategy to tackle widespread nutritional deficiencies and promote better health outcomes across diverse demographic groups. In support of these efforts, the

Bangladesh government has developed the 'National Food and Nutrition Security Policy 2020', collaborating with various stakeholders and implementing distribution programs through initiatives like the Food Friendly Programme and the Vulnerable Group Development Programme. In the 2022-23 fiscal year, DG Food covered 251 upazillas in FFP and 170 upazillas in VGD under fortified rice distribution. Both programs distributed approximately 0.22 MMT of fortified rice, contributing to 7.15% of the total distribution under the Public Food Distribution System (PFDS).

The School Feeding Programmes was deferred

The Bangladesh government implements School Feeding Programmes in poverty-prone areas to address challenges faced by vulnerable communities, especially children. These programs aim to improve education access and nutrition, reduce dropout rates, and enhance learning outcomes. They combat malnutrition, prioritize regions in need, and invest in long-term socioeconomic development and poverty reduction. The School Feeding Programme in Poverty Prone Areas, initiated in 2013, offers school children fortified biscuits and hot meals made with locally-sourced ingredients, including vegetables, lentils, and micronutrient-fortified rice and oil. Attendance has surged by 11% in schools providing cooked meals and 6% in those offering biscuits. Coverage expanded from 2.76 million children in 2019-20 to 2.95 million in 2021-22. However, the program was deferred in 2022-23. The Government of Bangladesh plans to universalize the school Meal programme very soon.

The number of trained young people has experienced a downward trend

The Bangladesh government prioritizes the training of young people to enhance their skills and employability. Recognizing the importance of youth empowerment for economic development, various initiatives are undertaken. These programs aim to equip youth with the necessary skills and knowledge to succeed in the job market, thereby contributing to poverty reduction and overall socioeconomic advancement. By investing in youth training, the government seeks to foster a skilled workforce essential for sustainable growth and prosperity. Trained young people play a pivotal role in Bangladesh's success story, driving rapid economic growth and shaping the nation's future. Highly educated and skilled in diverse fields like science, technology, engineering, and business, they utilize cutting-edge technology to advance national development. Eager to make a difference, they actively engage in social and environmental initiatives, inspiring others with their enthusiasm and determination. Last year, approximately 145.9 thousand young individuals benefited from training programs offered by governmental, non-governmental, and private organizations. Focused on job readiness and career planning, these programs equipped participants with the skills and knowledge needed to secure employment. By providing access to resources and support networks, these initiatives enhance young people's prospects in the job market, empowering them to contribute meaningfully to the nation's progress and prosperity.

5.4.3.(b) Policy challenges and recommendations for further actions

Digital application introduce in social protection for reducing targeting error

Introducing digital applications in social protection programs aims to mitigate targeting errors effectively. By leveraging technology, these applications streamline processes, enhance accuracy, and reduce administrative burdens. Through automated data collection and analysis, they enable more precise identification of eligible beneficiaries, minimizing the risk of overlooking vulnerable individuals or incorrectly allocating resources. Moreover, digital platforms facilitate real-time monitoring and evaluation, allowing for timely adjustments and ensuring program efficiency. Overall, the integration of digital

solutions in social protection enhances transparency, accountability, and ultimately improves the delivery of services to those in need. The government prioritizes transparency and accountability by systematically reporting social protection coverage and budget allocations disaggregated by geographical areas and vulnerable groups. Utilizing diverse information systems, this data will be regularly disseminated to inform policy formulation and ensure fair resource distribution. Transparent reporting empowers decision-makers to identify and address the needs of marginalized populations, ensuring their inclusion in reform initiatives.

Enhanced Urban Social Protection Framework

A comprehensive urban social protection strategy is crucial for addressing the complex challenges faced by vulnerable urban populations. In the short term, the focus is on enhancing the reach and effectiveness of existing programs through thorough evaluation and expansion efforts. Special attention will target marginalized groups, streamlining administrative processes and improving coordination to maximize resource utilization. In the long term, the emphasis shifts towards developing sustainable contributory social security programs, diversifying support mechanisms and promoting individual responsibility. Achieving this requires careful planning, legislative reforms, and efforts to address structural barriers hindering access to formal services. By balancing short-term interventions with long-term sustainability measures, urban social protection can effectively mitigate poverty, inequality, and exclusion, fostering inclusive urban development.

Investment in Seasonal Nutrition Surveillance

Government investment in surveillance and data analysis plays a critical role in comprehending and tackling seasonal fluctuations in nutrition. By harnessing big data analytics, authorities can glean valuable insights into nutritional patterns, especially during crucial stages like the "first 1000 days" of life. Priority will be accorded to vulnerable groups such as adolescent girls, pregnant women, and lactating mothers. Encouraging rural and urban gardening initiatives is vital to diversifying diets and enhancing nutritional outcomes. Furthermore, integrating nutrition objectives into disaster response and social protection programs strengthens these endeavours. This holistic approach not only aids in identifying nutritional deficiencies but also facilitates targeted interventions to address them effectively. By prioritizing surveillance and data analysis, governments can proactively address nutritional challenges, ensuring the well-being of their populations, particularly the most vulnerable segments.

Enhanced Training and Skills Development

Efforts to enhance the quality and relevance of training and skills development programs within productive social protection initiatives are underway. Leveraging the National Skills Development Policy, the focus is on certification, quality assurance, and tailored training approaches. Special emphasis is placed on addressing the specific needs of women and young people, aiming to consolidate and expand vocational training programs. Strengthening collaboration with stakeholders, including training centers, NGOs, and private sector entities, is key to improving program effectiveness and fostering linkages to employment opportunities. By aligning training programs with industry demands and providing targeted support to underrepresented groups, such as women and youth, these initiatives aim to enhance employability, promote inclusive growth, and empower individuals to secure sustainable livelihoods.

Expanding Productive Social Protection Efforts

To bridge gender disparities and promote inclusion, productive social protection programs are being expanded. This involves consolidating existing initiatives into targeted programs like the Vulnerable Women's Benefit (VWB), while ensuring ongoing support for those unable to engage in the workforce. Additionally, efforts are underway to extend these programs to marginalized groups, including those in remote areas, fisherfolk, and minority communities. This expansion aims to foster inclusive growth and resilience by addressing the unique challenges faced by these populations. By scaling up these initiatives, urban social protection efforts can effectively address the multifaceted needs of vulnerable groups. Through

targeted support and tailored interventions, these programs not only mitigate socio-economic disparities but also promote inclusive development. By prioritizing gender equality and inclusion, these efforts contribute to building more resilient communities and fostering sustainable socio-economic progress. Overall, these comprehensive measures underscore the commitment to creating a more equitable and inclusive society, where all individuals, regardless of gender or background, have access to the support and opportunities needed to thrive. Through collaborative efforts and strategic investments, urban social protection can serve as a catalyst for positive change, uplifting marginalized communities and fostering a more prosperous future for all.

5.5 Progress towards outputs for NFNSP-PoA objective-5 and CIP3 pillar-5

5.5.1 Strategy 5.1. Improve food safety, quality control and awareness of food safety and hygiene; this strategy consist of 3 Areas of Interventions - AoI 5.1.1. Ensure conformity and compliance of food safety policies (laws, standards and regulations); AoI 5.1.2. Develop, improve, and establish traceability, mechanisms and enforce regularity framework to control food hazards within the food supply chain; AoI 5.1.3. Develop and promote education and consumer awareness on food safety.

5.5.1. (a) Progress towards achievements

Table 31: Progress towards achievement of NFNSP Strategy 5.1

Strategy 5.1. Improve food safety, quality control and awareness of food safety and hygiene;						
NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Target	Source
National Food Safety Strategy Document Developed	-	National Food Safety Strategy developed in December 2021	-	-	Common food strategies across agencies and Ministries with clear roles	BFSA
Number of Designated food laboratories	10	10	10	10		BFSA
Rules/ Regulations/Guidelines for Food Safety prepared/ coordinated by BFSA	3	3	3	2		BFSA
Existence of National PoA on Food Safety/Food Safety Strategy, Guidelines & SOPs	-	No National PoA on Food Safety yet	-	-	National PoA on Food safety Developed	BFSA
Identified Number of violations of Food Safety standard under FSA 2013 reported by BFSA (CIP2 indicators)	134	162	164	165	decreasing	BFSA
Number of trainees on GAP, GAqP, GSP & GMP (CIP2 indicators)	-	146	8080	11780	Increasing	BFSA
Number of Safe Food campaigns	-	441	481	386	Increasing	BFSA
Risk assessment unit established by BFSA	0	0	0	0	Risk assessment Unit Established	BFSA

The colour indicator shows the progress achieved: target reached  ; on track  ; off track 

National Food Safety Strategy Document Developed

The National Food and Nutrition Security Policy 2020 (NFNSP-2020) dedicates a strategy (Strategy 5.1) to improving food safety, quality control, and awareness of food safety and hygiene. It emphasises put in place operational standards and procedures to assure that food is free of contamination from sources such as all kinds of chemicals, trace elements, heavy metals and bacteria. It plans to establish an adequate regulatory framework including surveillance for compliance and strong enforcement. The popularisation of Good Agricultural Practices (GAP), Good Aquaculture Practices (GAqA) and Good Husbandry Practices (GHP) that ensure food safety is envisaged for primary producers as well as the scaling up of Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), including adherence to HACCP (Hazards Critical Control Point) compliance for secondary and tertiary producers. Establishment of traceability process in agricultural, animal and fish production are the components of the new policy as well as the enhancement of consumer awareness on food safety.

The National Food Safety Strategy Document Developed with seven strategic objectives for the period of 2022-2026. The seven strategic objectives are SG 1: To establish BFSA as the single food safety authority of Bangladesh responsible for coordinating the overall food safety ecosystem, SG 2: To established science-based standards in compliance with the Food Safety Act, 2013 while respecting Bangladesh's international obligations, SG 3: To strengthen the regulatory compliance mechanism through an effective and transparent structure in Bangladesh, SG 4: To enhance the role of BFSA for food safety & nutrition and trade facilitation at the global level, SG 5: To enhance effectiveness in scientific/technical work in food safety areas on a long-term basis, SG 6: To build capacity of all stakeholders in relation to food safety and nutrition, and SG 7: To build consumer awareness to increase the demand for safe and nutritious food.

Number of National Designated Food Laboratories is stagnated

BFSA expands its activities in district levels; but still it requires adequate appropriate adequate training programme not only in districts but also at upazila level. It is needed more designated/accredited testing laboratories, equipped with state-of-the-art infrastructure to match international standards, including mobile laboratories, which can test products in kitchen markets in city corporation and districts level. BFSA published a directory that shows that food testing laboratories have limited facilities that do not allow them to test all parameters of food. It is estimated that only 50 laboratories can test foods, and only to a limited extent. They are mostly able to identify composite elements of food but are unable to detect the presence of any external elements.¹⁵⁷ So far, only 10 public sectors food-testing laboratories have received accreditation from National and International Accreditation bodies and 123 parameters has designated. Accreditation must be sought separately for the laboratory infrastructure, the machinery used, their operators and each of the tests carried out. The facilities and capacities of food testing laboratories should be systematically assessed. Their jurisdiction also needs to be defined considering their analytical scope and expertise.

BFSA take a project to strengthening the Inspection, Regulatory and Coordinating Function of the Bangladesh Food Safety Authority (STIRC) for improving BFSA's institutional capacity and food

¹⁵⁷ Hossain, E. (2019) [Food testing labs test hardly any food in Bangladesh](#). New Age. 12 January.

safety control system, review of ongoing food testing methods and strengthen cooperation of food laboratories, improving monitoring and supervision of activities of food business operators, supporting the institutionalization of food safety measures, raising awareness about food safety in the country, enhancing interagency cooperation and coordination, provide overall strategic direction, and assist in modernizing the food safety system in line with laws and regulations related to food safety through science-based methods.

Rules/ Regulations/ Guidelines on Food Safety prepared/coordinated by BFSA to harmonize with WTO

BFSA formed 27 Technical Working Group to harmonize the current regulations and send Draft regulations to the WTO for notification, such as (a) Draft Food Safety (Labelling of Packaged Food) Regulation, 2023, (b) Draft Food Fortification Regulation, 2023, (c) Draft Food Safety (Health Food/Dietary Supplements, Food for Special Dietary Use, Food For Special), (d) Draft Food safety (Pesticides Residues and Other Chemical Residues) Regulation, 2023, (e) Draft Food Safety (Chemical and Toxins) Regulation, 2023 and (f) Draft Food Safety (Use of Food Additives) Regulation, 2023¹⁵⁸.

Existence of National PoA on Food Safety/Food safety Strategy, Guidelines & SOPs

A National Food Safety Strategy on food safety will need to be elaborated and implemented and a National Plan of Action on food safety will need to develop for smooth functioning. BFSA will need to prepare manuals, guidelines, and SOPs in consultation with different sectors that can be utilised by the growers, producers, manufacturers, retailers, exporters and relevant stakeholders. To build a robust food safety system, the authorities need to assess the hazards and suggest preventative actions. To develop a manual for GAP, GMP, GAqP and GHP, the authority needs to conduct a systematic review (hazard analysis) of the production environment and all inputs for the purpose of identifying any hazard that may present a potential risk for contamination of the food. Once the programmes such as GAP, GMP and GHP work effectively within a food operation, the HACCP can be applied. Legal frameworks should be sufficiently precise to clarify roles and responsibilities, and, at the same time, sufficiently flexible to enable adaptation to scientific development or new findings, or changing programme requirements.

The number of violations of food safety standards reported by BFSA increasing

The number of violations of food safety standards reported by BFSA in 2022/23, this figure is increasing to previous year, at 165. BFSA's market surveillance activities are supported by the operation of mobile courts that identify violation of food safety rules, regulations and directives. Sales of expired and rotten food has been treated seriously as a punishable offence under the Food Safety Act 2013. Eight years into the creation of the BFSA, the authority still faces operational challenges because of sufficient number of trained food inspectors and reliable testing facilities. Without recognised laboratory analysis, penalties for infringement of rule are not legitimate. Existing laboratory staff are inadequate and need to be trained in analytical methods and laboratory accreditation. To support this, JAICA and FAO have been providing training support for laboratory staff focusing on pesticide and drug residue analysis and microbial contamination.

¹⁵⁸ BFSA annual Report 2022-23

Training on GAP, GHP and GMP is not given but training given on different food safety issues

Training on Good Agricultural Practices (GAP), Good Hygienic Practices (GHP) and Good Manufacturing Practices (GMP) is essential for the improvement of food safety status of the country. HACCP and personnel hygiene practices must be effectively implemented at all levels of food production and in all processing units. In order to control environmental contamination, street food handlers and distributors must be educated on appropriate practices. In 2022/22, 11780 persons taking training on different food safety issues. But in 2021/22, 9610 persons taking training on different food safety issues. The MoA, officials from the quarantine section who are in charge of checking compliance with the requirements of importing countries, and field services have set up cluster groups of farmers at the district level and upazila level to create traceability and GAP, testing pesticides, there is no facility of MRL testing but this is not enough, and exports continue to be limited due to lack of compliance.

Safe food campaigns by BFSA is continued

Since its inception eight years ago, the National Food Safety Day has been observed on 2nd of February, to coincide with the establishment date of BFSA. The 2023 theme was “Safe food is the key building a prosperous nation, a smart Bangladesh” নিরাপদ খাদ্য, সমৃদ্ধ জাতি, স্মার্ট বাংলাদেশ গড়ার চাবিকাঠি”. Through this initiative, efforts to mainstream food safety in the public agenda and reduce the burden of foodborne diseases globally are pursued. The observation of these national food safety days helps increase the awareness of food safety by all stakeholders of the food system and particularly by consumers who are ultimately suffer the effects of the lack of food safety.¹⁵⁹ Besides this food safety day, BFSA in 2022-23 fiscal year, they gave food safety advertisement in 52 national (Bengali & English) newspaper. They distributes 1,15,000 Family Guidelines to Safe Food, 50,000 safe food leaflets, 1,00,000 flyers and 600 safe food posters in hotel restaurants. They also conducted 192 Yard meeting for awareness building regarding food safety among 4800 participants. BFSA conducted 495 seminar and programmes in different schools and college and 49,500 students were present in seminars and food safety awareness programmes¹⁶⁰.

Yet not Risk assessment unit established by BFSA

The quality and safety of food depends on responsible action by all involved at all stages in the food value chain, including consumers. Consumers require access to adequate information about potential hazards and appropriate precautions to be taken in the final preparation and serving of food. A risk assessment of a food or ingredient includes hazard identification and characterisation, exposure assessment and risk characterisation. This leads up to a decision on whether any legal measures should be taken in order to prevent harm by this food or ingredient. There is no risk assessment unit established by BFSA till today. But, BFSA has a division (Food Consumer Awareness, Risk and Food safety Management Wing) that currently deals food safety assessment activities.

¹⁵⁹ Indeed, according to ICDDR,B, 500 people visit a hospital because of diarrhoea every single day (Dhaka Tribune (2019) [National Food Safety Day: What the government is doing to ensure food safety](#). 2 February).

¹⁶⁰ BFSA annual report 2022-23

5.5.1.(b) Needs for further actions under this objectives and programme

Develop and strengthen the national food safety control system

The National Food Safety Management Advisory Council and Central Food Safety Management Committee will support BFSA to guide and develop/strengthen the national food safety control system. In applying traceability across all or specified stages of the food chain, the code of best practices should be implemented across all movement points from production to distribution. A coding system of farms is needed, and the farms should be brought under a national registration system. The National Food Recall System will empower the authority to enforce and oversee the provisions associated with food recall and traceability. Zoning of shrimp farms, registration of horticulture zones, livestock identification and registration system as notable examples will be undertaken by the responsible sectors. It will also exercise legal action against producers, packers, traders, manufacturers, processors, retail stores and food service operators, who are in violation of these provisions, and help increase accountability among the food business operators.

Block chain will be explored as a means to ensuring traceability: block chain is a decentralised, distributed and public digital ledger that is used to record transactions and does not allow any alterations without the agreement and active involvement of everyone in the network. Transactions can be viewed simultaneously and in real-time, with both greater security and transparency. Barriers and challenges across the system will need to be addressed, with regard to the availability of high-speed internet services across the value chain, capacity to use the technology and adherence to policies and regulatory frameworks.

Build friendly environment of accredited independent certification and inspection agencies

Friendly environment of accredited independent certification and inspection agencies is recognized as an important element in food control system and will need to be built. Having GAP certification facilities in Bangladesh is a prerequisite for the food safety system. BFSA could also coordinate with the private enterprises that are setting up GAP certification services, which will need to be accredited by BAB or other international accreditation bodies. Accredited third party management system certification bodies are also relied on to conduct food safety audits and issue certificate of food facilities. However, there is an urgent need for BAB to provide guidelines and procedures on conformity assessment activities, such as testing, inspection and certification that can operate to international standards. The network of mobile courts should be scaled up across the country to continue identifying food safety violations as well as indiscriminate or illegal use of pesticides and antibiotics.

Strengthen linkages with INFOSAN

In order to reinforce the country's capacity to manage food safety emergencies, BFSA should also strengthen its linkages with International Food Safety Authority Network (INFOSAN). Linkages must also be developed between Codex Alimentarius Commission and INFOSAN focal points at national and global level (see NPAN2 Strategy 6.5.8). INFOSAN is an important platform for exchange of information in case of food safety crisis and for food sharing data on emerging or routine food safety issues. Through INFOSAN, WHO, in collaboration with FAO promotes cross sectoral collaborations and information sharing during food safety emergencies, as in the COVID -19 situation where a focus on new technologies and communications, and on handwashing and hygienic practices would be the key for the future of food safety. The emergency focal point for INFOSAN serves as a critical link in sharing information with the INFOSAN Secretariat and other members on food safety issues that may be relevant at the international level, promoting

partnership, collaborations and dissemination of relevant information and guidance within the national agencies and the country.

Strengthen product certification to ensure quality and safety

The export-oriented large-scale food processing/manufacturing industries have quality and safety certification (GMP, GHP, HACCP, ISO 22000:2005, etc.), certified farms for primary producers (e.g. GAP and the Association of Southeast Asian Nations Good Aquaculture Practices (ASEAN GAqP) are almost absent in Bangladesh. Various Steps will thus be taken urgently to bring primary producers and MSMEs under various certification schemes to pledge product quality and safety for the domestic and international markets. The Bangladesh Agricultural Certification Body (BACB) established to provide Bangla GAP Certificate will need to be made functional.

Support and strengthen consumer forums

Forums like CAB and BFSN which can serve as a platform to raise awareness and involve the stakeholders towards food safety initiatives will be promoted and strengthened. Such forums can help establish a food safety culture and strengthen food safety advocacy among the community. BFSN needs to be rejuvenated as an advocacy group for food safety. At the sub national levels, “healthy market place” and “healthy street food vending” initiatives were supported through various food safety projects. Khulna and Barisal districts had emerged as “safe food upazilas”. Such food safety initiatives as well as safe food clusters at the sub national levels will be reactivated in collaboration with BFSA and BFSN.

Carry out risk assessment and risk communication

The BFSA should form a Risk Assessment Unit that can carry out the function of risk assessment and risk communication in country for betterment of food safety. This unit can provide a framework/SoPs which will collect, process and analyse food safety risks for products, processes and activities. The quality and safety of food depends on responsible action by all involved stakeholders at all stages in the food chain, including consumers. Consumers require access to adequate information about potential hazards and appropriate precautions to be taken in the final preparation and serving of food.

5.5.2 Strategy 5.2 Reduce food loss and waste.

This strategy consist of 3 area of intervention (AoI) AoI 5.2.1. Minimise on-farm food losses, AoI 5.2.2. Reduce off-farm losses, AoI 5.2.3. Tackle food waste. Progress towards achievements

5.5.2 (a) Progress towards achievement

Table 32 - Progress towards achievement of NFNSP Strategy 5.2

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
National Strategy on Food Loss and Waste formulated	-	No strategic document developed, but there is plan to develop it	-	-	MoFood, BBS
On-farm loss for main commodities	NA	NA	NA	NA	MoFood, BBS
Number of farmers trained on FLW	13210	15,264	17,209	19191	DAE
Off-farm losses for large and medium FVCs	NA	NA	NA	NA	MoFood, BBS
Number of cold storages unites available (CIP2 indicators)	65	67	67	68	DAE, BBS Statistical Yearbook
% of Upazila & Union road network in good and fair condition (CIP2 indicators)	38%	67%	77.58%	85%	LGED
Number of Domestic processed foods with nutrient labels	-	No strategic document developed, but there is plan to develop it	-	-	BSTI

National Strategy on food loss and waste (FLW) need to formulate

Food loss and waste (FLW) currently represent a pressing challenge in the design of sustainable food systems. FLW negatively impact food security and nutrition and significantly contribute to greenhouse gas (GHG) emissions, environmental pollution, degradation of natural ecosystems and biodiversity loss, and represents a waste of resources used in food production.

Tackling food loss and waste is a defined target- SDG target 12.3 - within the internationally agreed Sustainable Development Goals (SDGs). As custodians of this target, FAO and the United Nations Environment Programme (UNEP) measure and monitor progress on efforts to reduce food loss and waste against the Global Food Loss and Waste Index.

Food loss and waste can and must be drastically reduced and prevented. Investing in producing, harvesting, handling and distributing safe and nutritious food of good quality for human consumption will contribute to the reduction of food losses and food waste. Reducing food losses has the potential to generate win-wins across all dimensions of the hunger targets-by improving food availability, food access and smallholder incomes (SDG2) and by upholding climatic action, life below water and life on land (respectively SDGs 13, 14 and 15).

Processes that raise awareness of the public and private sectors and civil society will facilitate target setting at local, national, regional and global levels, raise awareness, focus efforts, mobilize resources and guarantee the implementation of impactful action towards accomplishing the Agenda 2030.

The Bangladesh Bureau of Statistics (BBS) has taken an initiative to address the problem of food loss and waste. They take a project with the technical help of FAO named “Estimation of Food Losses and Waste to Achieve SDG 12.3.1: A Pilot Study” to assess the food loss and waste of crops, livestock and fisheries sector.

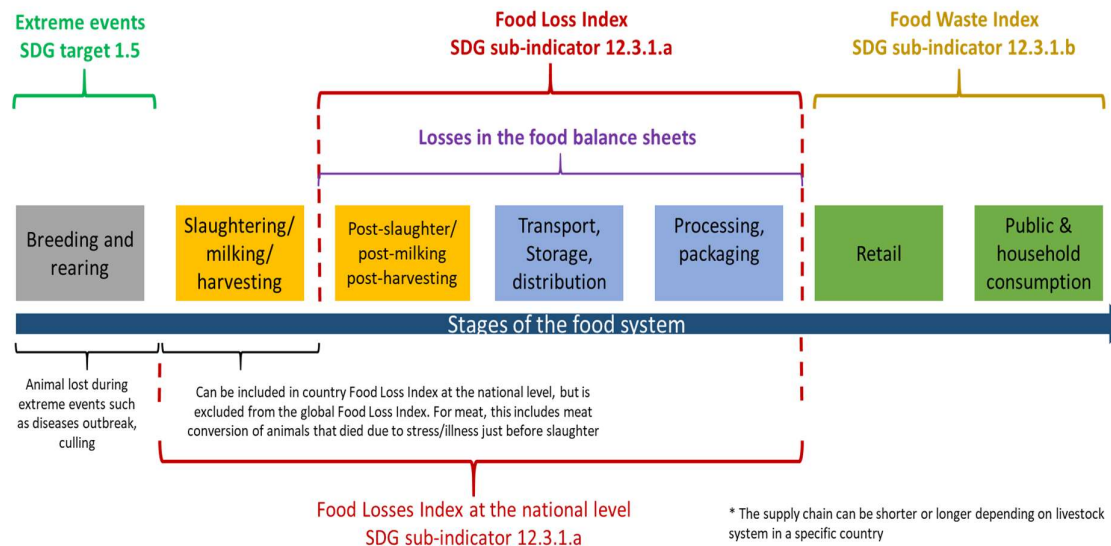


Fig.30: Flowchart of Food Loss Index (SDG sub-indicator 12.3.1.a & b)

On farm loss for main commodities

Adequate storage facility is needed to prevent on farm loss in all stage of main commodities. Existing storage conditions must be improved and modern food storage facility expanded to meet the demand for storage space and conditions. Low cost zero energy cool chambers that can store vegetables and fruits up to one week as well as irradiation facilities to reduce the cost of storage vegetables like potato and onion at 12-15°C for longer periods will be developed. A lack of storage facilities leads to sudden spikes of regional supplies and decreases prices to levels that are unprofitable for producers.

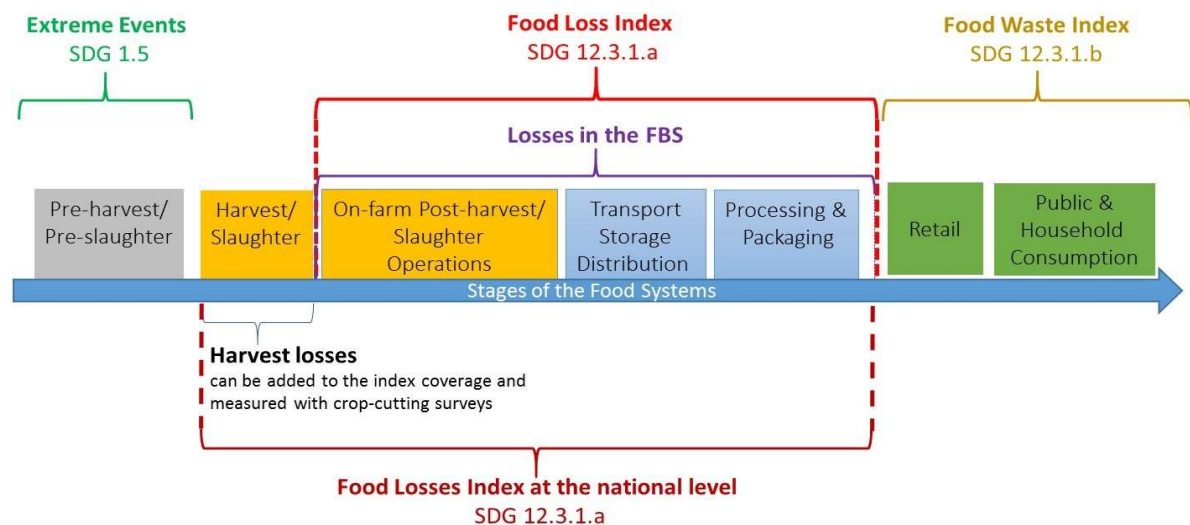


Fig.31: Flowchart of Food Loss Index (National Level)

It also limits the amounts of vegetables and non-rice commodities that can reach areas further from the market hubs, such as the North of the Country. Making storage and cold storage widely available and promoting its use can also encourage farmers to diversify their production by making alternative crops more attractive. The capacity of licensed warehousing will also be increased to help farmers store their produce safely and economically, and help the country manage its food security in times of disruption, e.g. natural disasters or foreign trade failures.

Number of farmers trained on FLW (Food Loss and Wastage) is increasing trend

FLW can take place at various stages of production to consumption, but the causes of FLW do not necessarily have to be at the same stage where the FLW occurs. Food supply chains link all the market players involved in the primary production, transport, processing, storage and distribution of food to consumers. Consumers, though not directly involved in the production, processing, or distribution of food, are also part of the food supply chain and the food system. Food reaches consumers either directly (direct purchases from farmers), or most commonly indirectly, via a number of intermediaries. Intermediate activities such as processing of raw agricultural commodities, checking consumer safety standards and packing add value to food before it is sold. Spoilage of fresh food products is a common reason for consumers to waste food; the reasons for relatively quick spoilage could have occurred as early as during harvesting.¹⁶¹ Farmers are trained on FLW, then the loss may be minimized at production level. In 2021-22 fiscal year, 17,209 farmers trained on FLW and 2022-23 fiscal year 19,191 farmers trained on FLW, which 11.52% higher than the previous year¹⁶¹.

Of farm losses for large and medium FVCs

In south Asia, food losses are mostly prevalent at production, handling and storage levels, and less at the consumption level. Losses during processing tend to be very high in developing regions because of inadequate local technologies for perishable products such as fruits and vegetables. The agro-food processing industry reportedly contributes near about 8% to manufacturing output and 1.7% of GDP. The engagement of private sector is thus paramount if this issue is to be tackled successfully and for this, the right incentives need to in place. In Bangladesh, perishable foods are at high risk given the environmental variability, climate and limited availability of cold chains. Inadequate processing facilities also elevated losses for produce such as milk. Transportation from the farm introduces a time gap between various stages of the food supply chain, from production to consumption, where food and nutrient losses can occur. This may be due damage of the produce because of inadequate temperature, mishandling, or even contamination.

Number of Cold storage slightly increased over the previous year

Cold storage capacity expanded over the reference period from 4,000 MMT at baseline to 7050 MMT in 2020/21. Bangladesh Cold Storage Association (BCSA) which is a platform of some 400 cold storage owners reported that during the 2018 harvesting season, farmers and cold storage owners together incurred a loss of BDT 125.15 billion due to low prices and unsold produce at the warehouses, and this could have been prevented by having more cold storage 230 . Therefore, through DAM, has taken a project to establish 500 zero-energy cool chambers (ZECC) on the household premises of 500 selected farmers in 31 districts over the next five years. Three thousand vegetable growers, 875 officers and 750 employees of DAM will also be trained in the usage of

¹⁶¹ DAE, MoA

ZECC storages. Cold storage capacity expanded over the reference period from 4,000 MMT at baseline to 7050 MMT in 2020/21. Bangladesh Cold Storage Association (BCSA) which is a platform of some 400 cold storage owners reported that during the 2018 harvesting season, farmers and cold storage owners together incurred a loss of BDT 125.15 billion due to low prices and unsold produce at the warehouses, and this could have been prevented by having more cold storage²³⁰. Therefore, through DAM, has taken a project to establish 500 zero-energy cool chambers (ZECC) on the household premises of 500 selected farmers in 31 districts over the next five years. Three thousand vegetable growers, 875 officers and 750 employees of DAM will also be trained in the usage of ZECC storages. The number of cold storage unit has increased from 67 to 68.

The improvement of rural roads continued but still off target

Rural connectivity plays a fundamental role in generating both on and off-farm rural income, providing employment opportunities and in ensuring physical access to food thereby supporting improving nutritional outcomes. Upazila and union road networks in good and fair condition improved to 85% in fiscal year 2022/23, which is higher than the previous year (67%). In the fiscal year 2022-23, 370 km upazila roads at a cost of Tk 392.49 crore, 1050 km union roads at a cost of Tk 1921.68 crore, 3200 km village roads at a cost of Tk 3236.88 crore and 8500 km pucca roads at a cost of Tk 3184.81 crore were maintained/rehabilitated under various projects across the country¹⁶². As a result, the quality of life of the people of the rural areas has improved with the ease of communication system, increase in agricultural production, increase in transport facilities for marketing the products of the hats and markets. Above all, poverty is being alleviated through the socio-economic development of the area and it has become easier to reach civic amenities to the rural areas.

This increasing trend shows that rural connectivity has improved which has accelerated transport connectivity in rural areas and facilitated the movement of people and goods in those areas (LGED Annual Report 202-23). Besides, to strengthen rural connectivity between rural communities, productive agricultural areas and socioeconomic centres, LGED and ADB kick-started the 449 million USD Rural Connectivity Improvement Project July 2018- June 2024. The project's interventions aim at upgrading 2630 km of rural roads to all-weather standards in 34 districts located in five divisions; improving the capacity of infrastructure agencies; and financing the enhancements to the national rural road master plan.

5.5.2.(b) Needs for further actions under this objectives and programme;

Formulate a National Strategy on Food Loss and Waste

As per the recommendations of the 8FYP, a National Strategy on Food Loss and Waste will be formulated based on detailed study of food loss and waste both in crop and non-crop sector. The Bangladesh Bureau of Statistics (BBS) has taken an initiative to address the problem of food loss and waste. They take a project with the technical help of FAO named “Estimation of Food Losses and Waste to Achieve SDG 12.3.1: A Pilot Study” to assess the food loss and waste.

Promote mechanisation and affordable loss-reducing technologies

Expanded usage of combine harvesters and other agricultural harvesting and cultivation equipment will support food loss reduction, mitigate nutrient losses, increase efficiency, save time and reduce

¹⁶² LGD annual Report 2022-23

harvesting and cultivation costs, and fostering better returns and livelihoods for farmers. On-site farm waste processing technologies will be developed to convert it into animal feed, for bioenergy purposes or soil improvement. In particular, using the recyclable waste from the fishers, quality feed may be produced, alternatively these feeds could provide rich content of protein and nutrient value to the yields. Moreover, intelligent decision-making tools, sensor technologies, and new processing technologies should be used to recover and make use of edible portions of food and retain the nutrients within that would be otherwise lost. GAP and GAqP will be strengthened.

In Bangladesh, GAP are being developed, where BARC is the Scheme Owner, DAE the certification body and BAB the accreditation body although they are yet to issue certificates. Post-harvest treatments will also be encouraged at farm level: indeed, crops that need to be stored are highly perishable or need to be transported over long distances can benefit from special treatments to slow deterioration and minimize losses¹⁶³. These may include actions such as hot water treatment for disinfection, techniques to inhibit sprouting of items such as potatoes or onions, fungicide application. These methods need to be promoted and new ones that are adapted to different types of farmers developed through R&D, in collaboration with the private sector.

In fishery supply chain a solid basement and/or control zones development near catching points can significantly decrease losses and spoilage of fish products. The adoption of these loss-reducing technologies assumes that certain prerequisites are in place. This is the case for example, or access to finance to be able to invest in these technologies and stable provision of electricity and water.

Improve and develop on-farm storage

Existing storage conditions must be improved and modern food storage facilities expanded to meet the demand for storage space and conditions, especially for perishable produce. The NAP PoA 2020 proposes to construct community storage of grains in each Union. Low cost zero energy cool chambers that can store vegetables and fruits up to one week as well as irradiation facilities to reduce the cost of storage of vegetables like potato and onion at 12-15°C for longer periods will be developed. This will also enable the safety and nutritional quality of the vegetables such as preventing the undesirable sprouting of potatoes and onions and conserving vitamin losses. A lack of storage facilities leads to sudden spikes of regional supplies and decreases prices to levels that are unprofitable for producers. It also limits the amounts of vegetables and non-rice commodities that can reach areas further from the market hubs, such as the North of the country.

Making storage and cold storage widely available and promoting its use can also encourage farmers to diversify their production by making alternative crops more attractive. Cold storage units are beyond the investment scale of most individual farmers and finance must be provided to smallholders to help them access refrigerated units. The capacity of licensed warehousing will also be increased to help farmers store their produce safely and economically, and help the country manage its food security in times of disruption such as natural disasters or foreign trade failures. The development of specific types of storage for certain commodities should be promoted. For example, fresh fish storage in improved fish containers such as Styrofoam boxes is estimated to enable reduction in quality loss.

¹⁶³ FAO. 1989. [Prevention of post-harvest food losses fruits, vegetables and root crops a training manual](#)

Involve and sensitise all value chain stakeholders to develop solutions, including women

Sustainable solutions to reducing farm level food losses will be developed through the creation of multi-stakeholder networks that will engage scientific organizations, the private sector, farmers' associations, and civil society. Importantly, effective network and linkages among growers, processors and other VC actors should be part of these actions. This may include, inter alia, expansion of joint projects and training activities with universities and research institutes. Such networks will not be limited to looking at farm level value chains but will look at issues relating to transport, processing and safe storage. International connections will also be made to learn from other countries' experience. Training and field demonstration programmes will help sensitise producers to the issue of losses. Studies will help national and sub national level agriculturists, post-harvest processors and farmers in planning their activities across the supply chain structure. It will also enable them to identify the critical loss points, their causes and the likely solutions to address the causes.

Improve data available on on-farm food losses

FLW data collection and production, as well as in international guidance on conceptual approaches and methodologies adopted are fast evolving. For example, the methodology on SDG 12.3.1 has recently been approved and endorsed. Adoption, piloting, and effective application of this methodology requires capacity development that need to be incorporated in the national strategic priorities and actions. Achieving SDG 12.3.1 requires an improved and harmonised data ecosystem enabling production and computation of relevant indicators along with proper monitoring and reporting mechanisms in place. The main strategic goals defined in the Bangladesh Strategic Plan of Agricultural Statistics (2016-2030) will ensure that agriculture and rural statistics - including information on food losses- are coherent, reliable, and internationally comparable. This will require strengthening statistical capacity to produce food loss and waste related data. The private sector will also need to be involved in monitoring their food losses and waste. Both quantitative (or physical) FLW and qualitative (nutritional and well as economic) FLW will need to be researched for adequate interventions to be devised on different commodity value chains, including livestock, poultry and fish.

5.5.3 Strategy 5.3. Improve data, information and analysis for evidenced based planning, monitoring, evaluation, and update of policies and programs through wider partnerships;

This Strategy consists of 4 Area of Interventions **AoI 5.3.1.** Produce/generate, disseminate and ensure access to reliable and timely FNS data and information by setting up an inter-agency FNS data sharing mechanism, **AoI 5.3.2.** Develop and implement a big data analytics ecosystem for the food system, **AoI 5.3.3.** Operationalise the implementation of the NFNSP, its Plan of Action and Country Investment Plan for FNS through an effective M&E system; **AoI 5.3.4.** Ensure the cross-sectoral integration of the NFNSP, PoA and its investment plan with other FNS-related initiatives and its coherence with national socio-economic development efforts.

This **Strategy** also run by under two programmes of the country investment plan 3 (CIP3) **Programme V.1.** Generation, dissemination and access to reliable and timely FNS data and information including Big Data Programme; **Programme V.2.** Operationalisation of the implementation of the NFNSP, its Plan of Action and Country Investment Plan and integration with other FNS development efforts.

5.5.3.(a) Progress towards achievements

Table 33- Progress towards achievement of NFNSP Strategy 5.3 and CIP3 program (V.1-V.2)

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
n. of protocols for FNS data generation/exchange approved by BBS	-	None	-	-	BBS
Frameworks governing data access and use for all government institutions that collect and/or storing agricultural/ FNS data in place	-	None	-	-	BBS, BNNC
Existence and monitoring of Hand-in-Hand (HiH) benchmark indicators	0	0	0	0	FAO
The new CIP produced and operationalised	-	-	CIP3 Produced	CIP3 Produced	FPMU

Number of protocols for FNS data generation/exchange approved by BBS

A variety of government and non-government FNS surveys and surveillance systems continue to inform policy analysts and policymakers thus contributing to shaping nutrition-sensitive policies and programmes and providing updates on coverage and effectiveness of nutrition-specific interventions. BDHS is the main reference to track progress on maternal, child health status, child nutrition and feeding practices at the country level. BDHS 2017-18 collected data between October 2017 and March 2018 and its key indicator report was published in November 2019.¹⁶⁴ In addition, the Household Income Expenditure Survey (HIES) which last took place in 2020 is a national representative survey measuring monetary poverty, the standard of living and nutritional status up to district level. The Bangladesh Integrated Household Survey (BIHS), conducted by IFPRI in 2011/12, 2015 and 2018/19, is the only nationally representative survey of rural Bangladesh to collect data on dietary intake of individual household members and anthropometric measurement and women's empowerment through the Women's Empowerment Index (WEAI).

The Health Facility Survey (BHFS, 2017) implemented by the National Institute of Population Research and Training (NIPORT) includes reporting on health care service, facilities and nutrition services. The Nutrition Information and Planning Unit (NIPU), established in IPHN, tracks the implementation of NNS services at the district level. It brings together local-level nutrition data collected from different sources such as Community Clinics, Upazila Health Complexes through the DHIS2 portal. In April 2019, the National Information Platform for Nutrition (NIPN) was officially launched by the MoFood and the European Union. It provides support to the country's strategic decisions by strengthening nutrition-related information systems and improving data analysis.

Framework governing data access and use for all government institutions that collect and/or storing agricultural/FNS data in place

The data being produced, used, and circulated in the government and the entire public sector as a whole is critical and imperative for each organization to function with utmost efficiency. The

¹⁶⁴ GoB (2019) [Bangladesh Demographic and Health Survey 2017-18 – Key Indicators](#). Ministry of Health and Family Welfare.

ability to access and manage this data should be a vital part of the sector's mission. For this reason, a good amount of focus and understanding should be given to the system data management.

Data collected is increasing by the numbers everyday especially now that we are cruising through the age of digitization. And as data continues to grow, state and the local governments are taking steps towards working for proper data storage, back-ups, and allocation. They are also making an effort to make each of the data available, accessible, and useful to the public.

While the process is already being implemented, there are still some areas in which they can effectively improve in terms of managing a huge chunk of data.

Inter-department data accessibility is one. Most government institutions have their own data. In providing services and in order to help the public save time, it is helpful to have internal sharing of public records like basic information. Here, an individual won't have to fill up the same fields multiple times for various institutions.

A good recovery system is also very important. There are certain data that need to be accessed easily in case there is an extreme need for it. Data in private matters, like health records, should be heavily protected to avoid fraud, and stored safely, but still accessible to the right users.

Another is improvement in the area of training and development. When professionals working for the government know the value and efficiency of proper data handling, no data will be breached or compromised. With proper knowledge and with a proper system, even fraud can be avoided. Data management is effective in a sense that it can work greatly for the advantage of the sector. It will work to serve the sector's mission and at the same time, the public relying heavily on it. Remember that when data is inaccurate, it can greatly affect the whole process of the sector. Bad data means inaccurate reporting and when it does happen, the reputation of an individual, agency, or organization can be tainted.

Existence and Monitoring of Hand-in-Hand (HiH) benchmark indicators

The Hand-in-Hand (HIH) Initiative supports the implementation of nationally led, ambitious programmes to accelerate agri-food systems transformations by eradicating poverty (SDG1), ending hunger and malnutrition (SDG2), and reducing inequalities (SDG10). It uses advanced geospatial modeling and analytics, as well as a robust partnership-building approach to accelerate the market-based transformation of agrifood systems-to raise incomes, improve the nutritional status and well-being of poor and vulnerable populations, and strengthen resilience to climate change. The Initiative prioritizes countries and territories where poverty and hunger are highest, national capacities are limited, or operational difficulties are greatest due to natural or man-made crises. Areas of intervention have included developing value chains for priority commodities, building agro-industries and efficient water management systems, introducing digital services and precision agriculture, reducing food losses and waste, and addressing climate challenges and weather risks. The Hand-in-Hand Initiative, launched in 2019, is a flagship of FAO and one of its core priority programme areas.

Formulate priority investment plan based on evidence (exhaustively costed) for crop sector based on targets set for 2030 & 2041, assess investments by Govt., private, public-private, public-DPs, mobilize resources towards planned investments/projects/programs— including global financing for CSA and evolve result based monitoring and evaluation; data-driven decision support system

17-Oct-23

The CIP3 produced and operationalized

Achieving the goal and objectives of the NFNSP 2020, its PoA and those of the 8FYP and the 2030 Sustainable Development Goals (SDGs) requires well-targeted financial resources. Finance is one the means of implementation of the SDGs which in addition to technology development and transfer, capacity-building, inclusive and equitable globalization and trade, regional integration, as well as the creation of a national enabling environment is required to implement the sustainable development agenda. Thus, SDG 17 endeavours to ‘strengthen the means of implementation and revitalize the global partnership for sustainable development’ which the CIP3 2021-25 contributes to.

The CIP3 is a powerful tool that can help mobilise and orient funds towards sustainable, nutrition sensitive and resilient investments. Its yearly monitoring gauges the ongoing and planned efforts towards reaching the outcome of each programme. This enables the government and DPs to direct financing where priorities lie and to identify gaps in a coordinated manner across sectors, ministries, GoB and DPs in order to avoid duplications and leverage synergies. This is in keeping with the ‘whole of society approach’ adopted by the GoB for the SDGs implementation, which seeks to include all segments of society in planning and implementing the SDGs.

5.5.3 (b) Need for further actions under this objectives and programme;

Develop, invest and apply appropriate technologies for agri-food value chain

Public warehouses will be modernized and the expansion of private storage and cold storage in particular should be encouraged. Simple innovations such as replacing sacks by plastic crates which can reduce damage and losses in tomatoes, mangoes and others perishable vegetables during transport will be disseminated for uptake. Alternative packaging techniques such as vacuum packing, nitrogen flushing will also be encouraged to preserve the freshness and nutritional quality of food for longer periods.

Some innovations have already taken place along the agri-food value chain in Bangladesh with for example the rapid uptake of plastic crates in place of woven baskets and jute sacks to handle high-value, nutritious products such as mango¹⁶⁵. Domestic abattoirs, live bird and fish markets will need to be modernized with periodic surveillance conducted. For perishable horticultural commodities, controlled atmosphere storage, modified atmosphere storage, heat treatments (hot water, hot air, irradiation), use of ethylene scrubbers and ethylene inhibiting compounds, postharvest fungicides, sanitizers such as electrolyzed oxidizing water, biotechnological tools will be expanded in order to prolong storage life and reduce losses. Other countries’ experiences will be drawn upon.

Enhance food-processing capacity for smooth development

Food processing involves the transformation of products originating from agriculture, forestry and fisheries and this plays an important role in tackling FLW by allowing foods to be preserved, conserving micronutrients and enhancing shelf life of the products. For example, crops, grains, fish, horticulture and dairy can be preserved by drying, mechanical dehydration, pasteurization, ultra-heat treatment and freezing, as notable methods. This includes minimal processing as well as secondary (the conversion of ingredients into edible products) and tertiary processing (the

¹⁶⁵ World Bank. 2020. Promoting Agri-Food Sector Transformation in Bangladesh

production of prepared convenience foods). In Bangladesh, women have an important role in food processing and need to be trained to use appropriate and novel techniques.

Improve transport infrastructure and established cool chain

Transportation infrastructure from the production site further down the supply chain requires improvement with for example, the development of transport with refrigerated, cooling and ventilation systems (and more generally integrated cold chains). In Bangladesh, agricultural freight is handled mostly by road transport and intermodal connections and efficient networks need to be developed. Other means of transport, notably inland water transport must be developed. The number of fish landing centres will be enhanced in coastal areas which should help reduce loss and improve the quality of fish products and seafood.

Involve all value chain stakeholders to develop solutions and sensitise them to the issue of food losses

As suggested for farm level losses, efforts will be made to create multi-stakeholder involvement in order to devise solutions and draw from existing experiences both nationally and abroad. Communities should document their best practices and be engaged in planning and implementation through a participatory and consultative process. Initiatives will be taken to sensitise all actors of the value chain to the problem of food losses and training imparted on how they can contribute to minimise it. Such measures will target farmers/truck drivers and workers involved in loading, delivery and logistics operations for example as well as women given their important role in post-harvest activities.

Raise awareness on food waste issues and implement prevention and mitigation measures

While campaigns already exist to educate the population on the importance of safe and nutritious food, emphasis will be placed on the problem of food waste and on the measures that individuals, households, schools and communities can take to tackle the problem. Awareness will be raised on portion or serving sizes and standardized food preparation quantities both in homes and in institutional food service. Women will be targeted for their key role in ensuring FNS within the household. “Plate” waste in hospitals, canteens, school cafeterias, restaurants and hotels also require attention. Restaurants and events’ organisers will also need to be targeted by awareness campaigns with clear guidance on the actions they may take to reduce waste. Training and outreach programmes on how to appropriately conserve and preserve food will be conducted using different platforms such as television cookery programmes, virtual learning modules and community-based activities. Public campaigns and advocacy such as the UN’s International Awareness Day on FLW or FAO’s and Messe Düsseldorf’s Save Food Global Initiative will be promoted. Innovative initiatives around the globe will be examined and their relevance to Bangladesh gauged for possible adoption. Among them: the Love Food, Hate Waste campaign, which has resulted in significant changes in reducing household waste by bringing together government agencies, community organisations, chefs, businesses, trade bodies and local authorities and individuals can be suitably adapted.

Introduce innovative/modern solutions for waste reduction through mobile applications and networking

Learning from other country experiences, mobile applications to maximise the sale or donation of food will be developed for Bangladesh in collaboration with the private sector. [Feeding India](#) for

example, collects excess food from excess food from restaurants and caterers and delivers it to undernourished people through a network of volunteers. [Too Good To Go](#) is an application currently present in 12 European countries that enables food outlets to sell the food that will otherwise go to waste at reduced prices.

5.5.4 Strategy 5.4- Strengthen regulatory management, climate resilience and gender roles; The strategy consist of three area of interventions (**AoI**) **AoI 5.4.1.** Develop and implement effective regulatory instruments and guidelines for priority issues, **AoI 5.4.2.** Strengthen gender mainstreaming for food and nutrition security; **AoI 5.4.3.** Develop and promote climate-resilient food systems. **Strategy 5.4** run by under one programme of the country investment plan 3 (**CIP3**); **Programme V.3** Effective regulatory instruments and guidelines;

5.5.4 (a) Progress towards achievements

Table 34 - Progress towards achievement of NFNSP Strategy 5.4 and CIP3 program V.3

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Number of courses delivered on GAP	469	515	669	559	DAE
Mortality attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease (per 1000 population, numbers in parentheses denote the ranks) a) Heart attack b) Brain stroke c) Respiratory disease d) Liver cancer e) Asthma f) Other Fever g) High blood Pressure h) Pneumonia i) Heart disease j) Diabetes	a) 0.88 (1) b) 0.27 (4) c) 0.33 (3) d) 0.13 (10) e) 0.23 (6) f) 0.14 (8) g) 0.17 (7) h) 0.25 (5) i) 0.4 (2) j) 0.13 (9)	a) 1.03 (1) b) 0.45 (3) c) 0.52 (2) d) 0.21 (7) e) 0.29 (4) f) 0.20 (9) g) 0.21 (8) h) 0.24 (5) i) 0.23(6) j) 0.16 (10)	a) 1.02 (1) b) 0.53 (3) c) 0.56 (2) d) 0.23 (6) e) 0.28 (4) f) 0.27 (5) g) 0.19 (9) h) 0.22 (7) i) 0.21(8) j) 0.18 (10)	a) 1.02 (1) b) 0.64 (2) c) 0.57 (3) d) 0.27 (4) e) 0.27 (5) f) 0.23 (6) g) 0.22 (7) h) 0.22 (8) i) 0.21(9) j) 0.21 (10)	SVRS, BBS
Women's share in overall Agriculture engagement	55%	59%	60.4%	61%	DAE
Mangrove area a) Natural mangrove b) Costal mangrove Plantation (paraben)	601,700 Ha 10,600 Ha	601,700 Ha 10,470 Ha	601,700 Ha 12, 290 Ha	601,700 Ha 9, 450 Ha	MoEFC&C
N. of gov officers in BFSa, BNNC and FPMU a) BFSa b) BNNC c) FPMU	a) 97 b) 11 c) 21	a) 97 b) 11 c) 21	a) 104 b) 10 c) 20	a) 100 b) 10 c) 18	FPMU
N. of training/workshop/seminar provided to BFSa, BNNC and FPMU by projects	BFSa-06 BNNC-10 FPMU-12	BFSa-06 BNNC-12 FPMU-15	BFSa-22 BNNC-20 FPMU-12	BFSa-22 BNNC-48 FPMU-10	FPMU
n. of different organisations in the Local Consultative Groups (LCGs) on Agriculture, Rural Development and Food Security (ARDFS), Disaster Emergency Response (DER) and Health a) ARDFS b) DER c) Health	a) ARDFS- Govt.-25 DPs- 46 b) DER- Govt.-17 DPs-18 c) Health- Govt.-13	a) ARDFS- Govt.-25 DPs- 46 b) DER- Govt.-17 DPs- 18 c) Health- Govt.-13	a) ARDFS- Govt.-25 DPs- 46 b) DER- Govt.-17 DPs-18 C) Health- Govt.- 13	a) ARDFS- Govt.-25 DPs- 46 b) DER- Govt.-17 DPs-18 C) Health- Govt.- 13	FPMU

	DPs - 14	Govt.- 13 DPs - 14	DPs - 14	DPs - 14	
n. of collaborative platforms between local actors	-	Coordination via DNCC and UNCC, no other formal collaborative platforms exist	-	-	BNNC

Delivery of training on GAP trend is increasing

Training on good agricultural practices (GAP), good hygienic practices (GHP) and good manufacturing practices (GMP) is essential for the improvement of food safety. HACCP and personnel hygiene practices must be effectively implemented at all levels of food production and in all processing units. In order to control environmental contamination, street food handlers and distributors must be educated on appropriate practices. In 2022/23, 559 courses deliver on good agricultural practices, while 669 courses delivered in 2020/21. The MoA, officials from the quarantine section who are in charge of checking compliance with the requirements of importing countries, and field services have set up cluster groups of farmers at the district level and upazila level to create traceability and GAP, testing pesticides, there is no facility of MRL testing but this is not enough, and exports continue to be limited due to lack of compliance.

Heart attack, Brain Stroke and Respiratory Disease are increased in 2023

The SVRS (Sample Viral Registration Survey 2023, BBS) lists top 10 major causes of deaths (per 1000 population). Heart attack ranked 1st and followed by brain stroke (2nd), respiratory disease (3rd), liver cancer (4th), asthma (5th), other fever (6th), high blood pressure (7th), Pneumonia (8th), heart disease (9th) and Diabetes (10th) in 2023. Heart attack also was ranked 1st in 2022, 2021, 2020 and 2019. In base year (2019) it was 0.88 (per 1000 population), which is increased in 2023 (1.02)¹⁶⁶.

Women's share in Agriculture engagement is increasing in trend

Agriculture is still the main driving force in the economy of rural Bangladesh. Food and nutrition security of a vast segment of the country's population is dependent on headways in the agricultural sector. Agricultural development is linked to poverty alleviation, living standard of the people, employment generation and opportunity, agro-based industrial growth etc. Its contribution to Gross Domestic Product (GDP) currently stands at 11.30 % , while it provides employment to 40.6 % of the labour force. The rural economy in the country has become more diverse and dynamic over the past few decades due to its sustained growth. Corporate presence including contract-based production is now clearly visible in the sector. Agro-based industrialization is bringing dynamism to the country's rural milieu. Against this backdrop, the contribution of womenfolk to the agriculture sector carries much significance.

The involvement of women in agricultural jobs was incorporated for the first time in in the labour force survey of 1995-96. Tasks like cattle, rearing, poultry farming, paddy husking, boiling and

¹⁶⁶ SVRS, BBS 2022

drying, processing and preservation of food were included in its as economic activities. These tasks are mostly carried out by women in the villages. In 2019-20 fiscal year, 55 % women are engaged in agriculture sector. They mostly engaged in cattle rearing, poultry farming, paddy husking, boiling and drying, processing and preservation of food. The women share of agriculture employment is 60.4% in fiscal year 2021/22, which is slightly increased in fiscal year 2022/23 (61%), that mean that more women are engaged in agriculture sector and contribute the economic development of Bangladesh.

Vegetable production has increased five-folds during the previous few decades due to proliferation of its cultivation mostly by women. They playing a crucial role in the expansion of horticulture and gardening in the country. They are also environment-friendly and play a supportive role in activities like tree plantation, forestation. Land conservation, preservation of biodiversity.

Natural Mangrove and Coastal afforestation Area is stagnant

Bangladesh has a coastline of 580 km across 19 coastal districts. With two-thirds of landmass less than five meters above sea level and 30% of its arable land in coastal areas, the country is highly vulnerable to sea level rise, cyclones, storms, and storm induced tidal flooding. It has been demonstrated internationally that mangroves act as effective bio-shield against coastal surges.

The Sundarbans is a mangrove area in the delta formed by the confluence of the Ganges, Brahmaputra and Meghna Rivers in the Bay of Bengal. Four protected areas in the Sundarbans are enlisted as UNESCO World Heritage Sites, viz. Sundarbans National Park, Sundarbans West, Sundarbans South and Sundarbans East Wildlife Sanctuaries. Despite these protections, the Indian Sundarbans were considered endangered in a 2020 assessment under the IUNCN Red List of Ecosystems framework. The Sundarbans mangrove forest covers an area of about 601,700 Hectare (Land- 402185 ha, water 199515 ha, Analysis by Satellite Image 2015) of which forests in Khulna, Baherhat and Satkhira district. The most abundant tree species are sundari (*Heritiera fomes*) and gewa (*Excoecaria agallocha*). The forests provide habitat to 453 faunal wildlife, including 290 birds, 120 fishes, 42 mammals, 35 reptile and eight amphibian species.

Coastal plantations/ afforestation prevent coastal soil erosion, soil degradation and trap sediment by slowing down current. These reduce potential loss and damage of lives and assets during natural disasters, like cyclones, sidr, aila and storm surges, by reducing wind speed and velocity of water. Thus, coastal afforestation is considered as an effective adaptive measure against extreme weather events expected to increase under climate change.

Coastal afforestation with mangrove and non-mangrove species provides variety of useful ecological and bio-physical functions, like increasing forest cover of the country, alleviating environmental degradation, acting as highly efficient carbon sink, offering habitat and breeding ground for wildlife and fisheries, and improving recreational value of coastal area. Coastal afforestation also offers socio-economic benefits to the coastal community from harvesting non-timber forest products or other benefits as per the agreed benefit-sharing mechanisms of a particular initiative.

Coastal afforestation/plantation has been implemented in Noakhali, Lakshipur, Bhola, Patuakhali, Borguna, Pirojpur, Chattogram and Cox'sbazar coastal area. Newly afforestation/plantation (locally known as Paraban) has been 9,450 Hectares in 2022-23, which was 12, 290 Hectares in 2021-22 fiscal year¹⁶⁷. It should be emphasis on mangrove plantation in coastal districts for sustainable plantation.

Number of Govt. Officers in BFSA, BNNC and FPMU is increasing

The Bangladesh Food Safety Authority (BFSA) was formed in February 2015 under the Food Safety Act 2013 is an autonomous national food safety regulatory agency which works as a statutory organization. It is governed by a five-member decision making body. The agency has its own mobile court that can fine and sentence people for food adulteration.

Bangladesh National Nutrition Council (BNNC) under the Ministry of Health and Family Welfare, is responsible to formulate and updating of the National Nutrition Policy, approval of nutrition programmes for different ministries and institutes; and monitoring and evaluation of nutrition research programmes. Other functions to organising national and international conferences and training courses; publishing and disseminating technical and general information on nutrition; and providing financial support for nutrition related research projects.

Food Planning and Monitoring Unit (FPMU) is a wing of the Ministry of Food, act as the lead office on food and nutrition security issues in Bangladesh. FPMU has a pivotal role in coordinating, monitoring and evaluating interventions under the Country Investment Plan. The total Officers of BFSA, BNNC and FPMU is 134 in 2021/21, which is slightly decreased (134 to 128) in 2022/23. The strength of this organizations may be contributed food security, nutrition and food safety issues of Bangladesh. The government should give special emphasis to strengthen these organizations to conduct various skill develop specialised training, exposers visits and higher degree in abroad.

Training/Workshop/Seminar provided to BFSA, BNNC and FPMU by projects is increasing in trend

Comprehensive specialised training programmes are required along with the introduction of standardized methods of analysis is needed for effective capacity development for officials of BFSA, FPMU and BNNC. Capacity enhancement activities needed for building synergistic conditions to work with cross-sectoral and sectoral partners in joint implementations of Food Nutrition Security (FNS) initiatives will be implemented. Workshops, seminars and training programmes, including learning exchange visits, fellowships and human resource time sharing will be organized. In baseline year 2019-20, the number of training/workshop/seminar conducted by projects in BFSA, BNNC and FPMU are 06, 10 and 12. And the number of training, workshop/seminar has increased in 2021-22 (BFSA-22, BNNC-20 and FPMU-12). In fiscal year 2022/23, the number of training, workshop/seminar has increased in 2021-22 (BFSA-22, BNNC-48 and FPMU-10). These training, seminars and workshops enhanced the knowledge of officials, which they can apply their respective jobs.

¹⁶⁷ MoEF&CC

Number of different organizations in the Local Consultative Groups (LCGs) on Agriculture, Rural Development, Food Security (ARDFS), Disaster Emergency Response (DER) and Health

The LCGs exist to foster coordination between Development Partners (DPs) and the Government of Bangladesh, to ensure a strong and wider participation in the LCG on ARDFS, the LCG on DER, and the Health and Nutrition Consortium which is a health related LCG for development of agriculture, food and nutrition security, disaster response and health development. Wider and more active participation in the LCGs by the civil society and private sector will be sought. It is important to ensure that nutrition related issues are more often brought up for discussions along with funding considerations and investments. There are 25 govt. organizations and 46 Development Partners are in LCGs on ARDFS and 17 govt. organizations and 18 Development Partners are in LCGs on DER, and 13 govt. organizations and 14 development partners are in LCGs on Health.

Number of collaborative platform is needed at local level

An approach to nutrition planning and programming in which different departments coordinate and collaborate to address both direct and indirect to find out the underlying causes of malnutrition. Nutrition action is a multi-sector, multi-stakeholder and multi-level (national, subnational, urban, rural) issue. Effective multi-sectoral coordination along with collaborative planning, programming and monitoring across sectors at national, regional, and local levels are necessary to accelerate and sustain nutrition improvements.

Strong owning and partnership among the government, development partners and other stakeholders bring together the necessary sectors to effectively improve nutrition in targeted areas. Expanding linkages and joint planning between humanitarian assistance and development programs to build resilience, reduce the negative impacts of periodic or recurrent shocks, and improve economic and social opportunities for sustainable nutritional outcomes.

Bangladesh National Nutrition Council (BNNC) headed by the Honourable Prime Minister, is working to supervise and monitor the nutrition programs across the country to achieve the goals of the Bangladesh National Plan of Action for Nutrition (NPAN-2). The government has formed District Nutrition Coordination Committees (DNCC) and Upazila Nutrition Coordination Committees (UNCC) are dedicated to planning, developing and implementing District and Upazila level nutrition plans

Coordination and leveraging private and public sector resources to strengthen all parts of the food system, from small processors, agribusiness, food and beverage companies, to wholesale and retail sellers is essential. Promoting positive partnerships with businesses small and large can increase the creation, availability, and access to safe and nutritious foods. Improved nutrition is the platform for progress in health, education, employment, empowerment of women and the reduction of poverty and inequality, and can lay the foundation for peaceful, secure and stable societies.”

BNNC continued its efforts to improve the nutrition governance both at national and sub-national level during the reporting period by improving horizontal (inter-sectoral coordination with various line ministries, platform meetings, executive committee and standing technical committee, SUN Networks, etc.) and vertical coordination (with DNCCs and UNCCs); advocacy for resource mobilisation (internal and external), developing monitoring system to monitor the functionality of sub-national committees and advocacy plan for high visibility for nutrition, etc.

5.5.4.(b) Need for further actions under this objectives and programme;

Set up a FNS data strategy for a comprehensive network of FNS information systems

The [Bangladesh Strategic Plan for Agriculture and Rural Statistics \(SPARS, 2016-2030\)](#), for instance, aims to strengthening and development of well-coordinated and integrated agriculture and rural statistical system. With the goal of strengthening the capacity to monitor progress towards reducing undernutrition and to direct funding to more cost-effective and evidence-based programmes, the NIPN, 2018-2021 recognises as main challenge data generation methods, data frequency and validation processes. Improved coordination between the agriculture-specific, nutrition and FNS data collection and institutional frameworks will require a FNS data strategy under the leadership of BBS. To this end, enhancing the role of BBS as a central repository and data provision and validation unit will be essential. To ensure no overlapping, reliable and timely data and filling of data gaps, a comprehensive FNS data assessment will need to be performed with an emphasis on disaggregated and location specific data. Based on that, agreements, MoUs and protocols for data exchange among the various institutions will be established.

Strengthen capacity and budget allocation of all FNS data collecting agencies through an RBM approach

All public data collecting agencies, including BBS, need to be strengthened through technical capacity development and training to address the vital concern of providing timely and more accurate FNS related data and information. An RBM approach will be systematically applied to assess institutional needs and gauge activity planning of different agencies involved. Data and information collection especially at subnational level, dissemination and online access will be given priority to improve transparency. To this end, the Monitoring & Evaluation (M&E) function within data collecting agencies, including BBS, will be also strengthened including at local level, emphasising data quality, timeliness and access. In line with the 8FYP, independent evaluations and assessments will be implemented to ensure that expected goals are met.

Develop human resources to harness the opportunities offered by big data analytics

In order to fully harness the opportunity offered by Big data analytics, human resources will continue to be developed, leveraging on the national education system and ICT curriculum, and the large pool of online workers¹⁶⁸. This will include a training need assessment of FNS related institutions and the delivery of ICT training of public workers in those key FNS institutions.

Develop a big data governance framework

This action is closely aligned with Strategy 5.5 aimed at strengthening FNS governance, policy coherence, capacity strengthening and leadership across stakeholders. BBS, MoF, MoC, MoInd, MoEFCC, MoA, and all other government agencies collecting and/or storing agricultural and FNS-related data will have to work with data providers and data users to establish clear frameworks governing data access and use in line with the e-Government Master Plan for Digital Bangladesh (2019) and the PP2041. The regulatory and governance framework will have to be adjusted and

¹⁶⁸ ICT Division. 2019. [E-Government Master Plan for Digital Bangladesh \(2019\)](#). Government of Bangladesh

private data protection ensured, in particular in reference to the provision of private sector data for public use and agro-food related research (including food safety).

Strengthen the monitoring framework leveraging on existing initiatives and synergizing with the private sector

The monitoring framework will require an in-depth review to make it more relevant for the various stakeholders. Engaging them in the process will ensure that the outputs produced meet expectations. To this end, a survey of the various stakeholders (including the private actors) will be carried out to understand the usefulness of the monitoring products. This will, in turn, increase the commitment and active participation by the various actors to the process thereby also contributing to a strengthened policy uptake. The monitoring framework will be adjusted based on the required monitoring. These adjustments will be leveraged based on available human and financial resources. The monitoring products may be used by MoF to account for FNS investment volumes, to align DPs' technical and financial support to country investment's needs and gaps, to feed into the United Nations Sustainable Development Cooperation Framework Programme for Bangladesh as well as the SDG progress report. They may also find a role for the private sector and investors within the framework of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI). In addition, synergies with AIMS, HiH and the SUN networks at various levels will be exploited. An early engagement of all stakeholders is required to tailor the monitoring process and outcomes to their needs.

5.5.5 Strategy 5.5 Strengthen FNS governance, policy coherence, capacity strengthening and leadership across stakeholders; this strategy consist of 4 area of interventions AoI 5.5.1. Strengthen policy uptake, nutrition leadership and institutional capacity of relevant secretariats and public institutions; **AoI 5.5.2** Strengthen the capacities at subnational level including local government, non-state actors and consumer associations by facilitating knowledge exchange and partnerships; **AoI 5.5.3.** Strengthen private sector capacity by promoting the transfer of technologies and knowledge; **AoI 5.5.4.** Establish frameworks for national and subnational FNS stakeholder partnerships to ensure mutual accountability, transparency and effectiveness and operationalise an umbrella organization for the active engagement of stakeholders, especially youth.

It also covers 2 programme pillar 5 under CIP-3 Strategy 5.5 run by under two programmes of the country investment plan 3 (CIP3); **Programme V.4** Strengthened policy uptake, nutrition leadership and institutional capacity at national and subnational level of government; **Programme V.5** Strengthened FNS governance through enhanced participation of private sector and other non-State actors.

5.5.5.(a) Progress towards achievements

Table 35 - Progress towards achievement of NFNSP Strategy 5.5 and CIP3 program (V.4-V.5)

NFNSP & CIP3 output proxy indicators	2019/20 Baseline	2020/21	2021/22	2022/23	Source
Annual Monitoring Report	1	1	1	1	FPMU
Number of different organisations in the LCGs on ARDFS and DER	a. ARDFS- Govt.-25 DPs- 46 b. DER- Govt.-17 DPs-18 c. Health- Govt.- DPs -	a. ARDFS- Govt.-25 DPs- 46 b. DER- Govt.-17 DPs-18 c. Health- Govt.- DPs -	a. ARDFS- Govt.-25 DPs- 46 b. DER- Govt.-17 DPs-18 c. Health- Govt.- DPs -	a. ARDFS- Govt.-25 DPs- 46 b. DER- Govt.-17 DPs-18 c. Health- Govt.- DPs -	FPMU
Number of members in FNS umbrella organization	-	-	-	-	FPMU, BNNC
n. of accredited food testing laboratory facility in private sector	4	4	4	4	BAB

Annual Monitoring Report produced

The annual Monitoring Reports (MR) of the FNS-CIP3 will be better used identify new projects, and thereby help align the Government's investments closely to NFNSP-2020 goals. The MRs annually track both FNS results and projects investments. Gaps identified in the MR of FNS-CIP3 will be consolidated with the MR of the NPA2, with coordination between FPMU and BNNC, and this will lead to proposals for annual adjustments to the FNS investments portfolio, which will be channelled to the FPMC for approval. The MR of the FNS-CIP3 is published around June each year, reporting investment data up to the end of the previous fiscal year.

Number of different organization in the LCGs on ARDFS and DER

The LCGs exist to foster coordination between Development Partners (DPs) and the Government. To ensure a stronger and wider participation in the LCG on ARDFS, the LCG on DER, and the Health and Nutrition Consortium which is a health related LCG for better coordination and investment in those sectors (agriculture, food and nutrition security, disaster response and health sectors). Wider and more active participation in the LCGs by the civil society and private sector will be sought. It is important to ensure that nutrition related issues are more often brought up for discussions along with funding considerations and investments. There are 25 govt. organizations and 46 Development Partners are in LCGs on ARDFS and 17 govt. organization and 18 Development Partners are in LCGs on DER.

Number of members in FNS umbrella organizations

The current FNS governance structure consists of the top level "Food Planning and Monitoring Committee (FPMC)" which is chaired by the Minister for Food and comprised of 21 members including the Ministers and Secretaries of the FNS-related ministries. The mandate of the committee includes advising the government to take up necessary measures for ensuring food and nutrition security and food safety. The committee is responsible for providing an overall leadership and oversight in planning, coordination and monitoring in all aspects of food and nutrition security and food transformation system. NFNSP-2020 will promote active participation of local

governments, civil society, and the private sector at sub-national levels (grass roots, sub-district and district) to improve monitoring and coordination at the local level

Strengthening the capacity to effectively participate and collaborate in the implementation of NFNSP is another formidable challenge which needs to be dealt-with by formulating an appropriate coordination strategy. Policy coherence is key to multi-sectoral program development and implementation to 18 tackle food and nutrition insecurity. NFNSP will develop a framework for ensuring policy coherence across sectors.

Number of accredited food testing laboratories facility in private sector is stagnant

Accreditation is an international practices in which certification of competency, authority or credibility is presented for any products, goods and organization. Organizations that issue credentials of certify third parties are themselves formally accredited by accreditation bodies. The testing labs accredited to do the job are thus entrusted to ensure compliance with established technical requirements involving physical, chemical, forensic, quality and security standards.

Laboratory accreditation is a procedure by which an authoritative body gives formal recognition of technical competence for specific tests/ measurements, based on third party assessment and following international standard and if any, national standards.

Accredited laboratories can objectively state conformance of product or service to specified requirements. It is important for the purchaser, regulator, government, and the public to be able to identify accredited testing and calibration laboratories. Laboratory accreditation plays an important role in social sectors such as Medical, Food, Environmental and Forensic Science testing laboratories and in export sectors where products and goods are necessitated to test prior to exporting. The private sector has only four accredited food testing laboratories facility in Bangladesh. The four laboratories are as follows, Nestle Sreepur QA Laboratory, Nestle Bangladesh, PRAN Quality Control Laboratory, PRAN Group, Narsingdi, SGS Food & Agricultural Testing Laboratory, Dhaka and Wafen Research Laboratory, Dhaka, Bangladesh.

5.5.5 (b) Need for further actions under this objectives and programme;

Enact a Right to Safe Food Act

Bangladesh has a good number of policies on food and food related issues, which require a structured policy framework for enforcement. The Bangladesh Law Commission has recommended enactment of a Right to Food Act and constitution of a Food Commission to oversee its implementation and monitoring. It has also observed that sensitisation of policy makers is required to see the relevance and need for such a measure¹⁶⁹. Keeping in mind the importance of food safety, steps will accordingly be taken to enact a Right to Food Act.

Develop new regulations with guidelines for enforcement, to prevent and control NCDs

Following up on the 4th Health, Population and Nutrition Sector Programme (4th HPNSP) Operational Plan (OP) Non-Communicable Disease Control (2017), a national STEPS survey¹⁷⁰ in 2018 concluded that targeted interventions are required to combat the rising burden of NCDs¹⁷¹. Implementation of the multi-sectoral action plan for prevention and control of NCDs (2018-2025) with a three-year operational plan, will be accelerated with focus on the action areas of advocacy, leadership and partnerships; health promotion and risk reduction; health systems strengthening for early detection and management of NCDs and their risk factors; and surveillance, monitoring and evaluation, and research. An operational PoA with regulations and guidelines for enforcement will be developed for the remaining period 2021 to 2025, including nutrition labelling, reformulation of food standards limiting high sugar, salt and fat, and banning industrial trans fats; restriction of food advertising particularly marketing of unhealthy foods to children and imposing tax on sugar sweetened drinks and ultra-processed junk foods. Mass awareness will be generated through print and electronic media campaigns giving nutrition advice and education on NCDs.

Strengthen the capacity of BBS to disaggregate data by gender and social groups

The role of data for a proper understanding of the ground situation of FNS by social group and gender to enable targeted policy making especially for poor and vulnerable women is crucial. While numerous laws, policies and plans endeavour to address gender equality and women's empowerment, the data and statistics needed for monitoring and reporting are not available for many areas, are uneven and/or are not updated¹⁷². Steps will be taken to improve gender disaggregated data production by strengthening the capacity of BBS on gender statistics, including through data collection on priority data needs such as time-use, violence against women, and sex-disaggregated population statistics, to enable gender mainstreaming in food transformation systems.

¹⁶⁹ Bangladesh Law Commission. 2015. [A Study on Ground Situation of Right to Food in Bangladesh](#)

¹⁷⁰ STEP-wise Surveillance for NCD risk factors (STEPS) is a WHO-developed, standardized framework for monitoring the magnitude of NCD risk factors in a country. It comprises of 3 steps: STEP 1 determines behavioural risk factors by questionnaire assessment, STEP 2 figures out physical risk factors by physical measurements and STEP 3 finds out biochemical risk factors by biochemical measurements.

¹⁷¹ NIPSOM, GoB & WHO. 2018. [Bangladesh NCD Risk Factor Survey 2018](#)

¹⁷² UN Women website. [How are we making women count in Bangladesh?](#)

Integrate gender dimension into food loss and Waste assessment and prevention strategies

The NFNSP- 2020 recognises the importance of reducing FLW along the value chain with strategy 5.2. dedicated to this issues. Women play a major role especially in the postharvest phase of food processing and value addition and factors inhibiting their access to inputs, technology and other resources influences of FLW. The gender dimension will be integrated in the FLW assessment exercise and prevention strategies developed using tools like FAO's four-step approach for gender-responsive food loss reduction.

Establish National Environment Management Council (NEMC)

In line with the recommendation in the PP 2041, a National Environment Management Council (NEMC), chaired by the Prime Minister will be established. It will have representatives from the ministries of finance, planning, environment and forestry, land, agriculture, water, fisheries and livestock, law, energy and power, industry and transport as members, and the department of environment will provide the secretariat service. The main function of the NEMC will be to ensure the proper integration of environmental concerns in the development agenda and monitor implementation progress in different sectors including increasing resilience of crop and livestock production systems in a sustainable manner.

Restore mangroves in coastal areas

Bangladesh has a coastline of 580 km across 19 coastal districts. With two-thirds of landmass less than five meters above sea level and 30% of its arable land in coastal areas, the country is highly vulnerable to sea level rise, cyclones, storms, and storm-induced tidal flooding. It has been demonstrated internationally that mangroves act as an effective bio-shield against coastal surges. Mangrove forest restoration was a key intervention under the Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) project (2016-20) implemented by the MoEF&CC in collaboration with United Nations Development Programme (UNDP)-Global Environmental Facility in eight upazilas across five districts, to increase resilience of the coastal community to climate change and enhance their food security. The project promoted coastal livelihoods through development of floating fruit and vegetable gardens and fish ¹⁷³. Based on the evaluation report of the project, steps will be taken to expand projects of this type over a wider area.

Improve the investment in climate adaptation

By creating an environment that is conducive to investment in the agri-food sector, including foreign investment, knowledge transfers are likely to increase either directly or through spill overs that will benefit the food system. Bangladesh's ranking in the World Economic Forum's 2019 Global Competitiveness Index is 105th out of 141 countries, leaving much scope for improvement in most of the components of this index (for example on ICT adoption, skills, business dynamism and innovation capacity). This may involve changes in law and regulations. It may also involve public investments such as infrastructure (roads, markets) which will create an environment that is appealing to investors.

¹⁷³ Bangladesh Forest Department. 2018. Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) Programme in Bangladesh: Co-management and benefit sharing from coastal afforestation

Establish and operationalise an umbrella organization

An umbrella organisation that can bring together multitude of actors or groups into cohesive entities is required to streamline the diverse efforts taking place in the country to try and tackle the causes and underlying factors of food and nutrition insecurity. This involves all the ministries working on FNS, NGOs, academia, research institutions, other CSOs, and the private sector, both at subnational, national and international levels. This will require careful thinking and consensus on the best setup in terms of purpose and role, size, location, structure, role and governance arrangement of this organization. While choices will need to be made with regards to the scope of the work of this institution given the breadth the issue of FNS, one of its important roles will be to actively engage stakeholders such as associations, clubs, foundations, platforms and other institutions, especially youth.

The role and engagement of the FBCCI will be key for instance which need to be strengthened. Resources will be allocated for the setup of this institution and its operationalisation. Mechanisms to ensure regular and durable funding will need to be put in place to ensure it is able to commit to long-term endeavours.

Annex-1: .CIP3 Programmes and correspondence PoA Strategies and Areas of Intervention

NFNSP PoA			CIP3	
OBJECTIVE 1			PILLAR I: Availability of safe and nutritious food for healthy diets	PoA covered
To ensure availability of safe and nutritious food for healthy diets				
Strategy 1.1 Increase productivity while ensuring sustainable production of cereals and nutritious foods including horticulture, fisheries and livestock	1	AoI 1.1.1. Develop improved climate-smart technologies for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient-content	Programme I.1. R&D and improved technology for more productive nutrient-rich and sustainable agriculture in rural and urban areas	1.1.1.; 1.2.2; 1.2.3
	2	AoI 1.1.2. Disseminate improved technologies and practices at farmer and farm level through effective and participatory extension services	Programme I.2. Gender, climate and nutrition sensitive extension services	1.1.2
	3	AoI 1.1.3. Expand and promote the use of water-efficient and environmentally friendly alternative irrigation technologies, including surface irrigation	Programme I.3. Efficient and environmentally friendly irrigation technology	1.1.3
	4	AoI 1.1.4. Improve timely access to credit including micro-credit, to small-scale producers through suitable institutional reforms	Programme I.4. Improved efficiency of agricultural inputs	1.1.4; 1.1.5; 1.1.6; 1.1.8
	5	AoI 1.1.5. Improve input use efficiency for productivity gains, sustainability, and health and environmental protection	Programme I.5. Enhanced role of POs and cooperatives	1.1.9
	6	AoI 1.1.6. Promote the production of quality feed and fodder through appropriate support to feed and fodder industries for fisheries and livestock		
	7	AoI 1.1.7. Stimulate the blue economy by promoting the sustainable development of marine fisheries and aquaculture in coordination with other non-agricultural uses and the private sector		
	8	AoI 1.1.8. Develop and promote eco-friendly and responsible practices for animal health along the principles of “One Health”		
	9	AoI 1.1.9. Strengthen the role of POs and cooperatives to reduce the cost of production, improve market access, and increasing the prices received by producers		
Strategy 1.2 Scale up nutrition-sensitive diversification of food production	10	AoI 1.2.1 Promote diversification into horticulture, fisheries, livestock, poultry and dairy products with high nutrient and micronutrient content including regional and ethnic foods	Programme I.6. Promotion of agricultural diversification into commodities with high nutrient and micronutrient content and market value including regional and ethnic foods	1.2.1.
	11	AoI 1.2.2. Increase funding and improve efficiency of R&D for sustainable agriculture	Programme I.7. Developed Blue economy	1.1.7
	12	AoI 1.2.3. Improve the availability of safe nutritious food through innovation and expansion		

		of appropriate methods of urban-based food production
OBJECTIVE 2: To ensure access to safe and nutritious food at an affordable price		
Strategy 2.1 Improve market access and stabilize food markets	13	AoI 2.1.1. Promote the establishment, improvement and management of post-harvest marketing infrastructure and processing facilities for horticultural products, pulses and legumes, livestock and fisheries
	14	AoI 2.1.2. Set up financial intermediation services with improved access to credit for agro-processors along with other complementary services
	15	AoI 2.1.3. Maintain an orderly market management by securing property rights, regulating competition and stabilizing prices
	16	AoI 2.1.4. Ensure trade liberalisation and facilitation to support the supply of quality food at all times
Strategy 2.2 Improve value chain and marketing systems	17	AoI 2.2.1. Stimulate innovation-led efficiency gains in FVC by shortening the chain, improving cooperation among agents and by reducing food losses and waste
	18	AoI 2.2.2. Encourage and support the establishment and growth of financially viable MSMEs
	19	AoI 2.2.3. Create an enabling environment to attract private investment in infrastructure, processing, value addition, marketing and eliminate business barriers
	20	AoI 2.2.4. Promote inclusive cooperative/group-based processing and marketing
	21	AoI 2.2.5. Strengthen ICT-based market information system to provide real time support to farmers
Strategy 2.3 Preserve and enhance nutrient content along the value chain	22	AoI 2.3.1. Preserve and promote food safety and nutrients along the value chain including during transportation, processing, packaging, storage, wholesale and retail
	23	AoI 2.3.2. Promote the fortification and nutrition enhancement of relevant foods where desirable and efficient
	24	AoI 2.3.3. Promote innovation and development of appropriate technologies to preserve nutritional

PILLAR II: Access to safe and nutritious food at an affordable price	PoA AoI covered
Programme II.1. Efficient FVCs through transport infrastructure	2.1.1.
Programme II.2. Efficient FVCs through innovation and improvements in post-harvest processing and marketing, improved infrastructure, reduced FLW and enhanced cooperation among agents	2.1.1.; 2.2.1
Programme II.3. Orderly market management by securing property rights, regulating competition and stabilizing prices	2.1.3
Programme II.4. Trade liberalisation and facilitation to support the supply of quality food at all times	2.1.4
Programme II.5. Availability of financial intermediation, ICT market information systems and other complementary services for agroprocessors including for the most vulnerable sections of the population	2.1.2; 2.2.2; 2.2.5; 2.4.2
Programme II.6. Enabling environment to enhance infrastructure, processing, value addition, marketing and eliminate business barriers	2.2.3, 2.3.3
Programme II.7. Promotion of inclusive cooperative/group-based processing and marketing	2.2.4
Programme II.8. Preservation and promotion of food safety and nutrients along the value chain including through fortification	2.3.1; 2.3.2; 2.3.4

Strategy 2.4 Raise incomes of the poor and food insecure		value, in local and export processing zones (EPZ), including under Public-Private Partnership (PPP)
	25	AoI 2.3.4. Build the capacity of the private sector to test food and communicate results to and engage with value chain actors for adequate remedial actions, and establish food traceability mechanisms
	26	AoI 2.4.1. Expand and promote agriculture-driven, off-farm employment and other employment along the food chain by expanding vocational training opportunities particularly for rural youth, women and disabled people
	27	AoI 2.4.2. Provide adequate credit, technology, information, training and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis on the most vulnerable sections of the population
OBJECTIVE 3: To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements		
Strategy 3.1 Develop a long-term national plan for ensuring safe, nutritious and sustainable diets in alignment with recommended nutrient	28	AoI 3.1.1. Develop a national-level food production, supply and consumption plan based on a nutrient gap analysis considering energy and nutrient demand for a healthy and active life
	29	AoI 3.1.2. Support the implementation of DDP plans for a healthy and sustainable food system
	30	AoI 3.1.3. Expand human resources and strengthen institutional arrangements to improve performance of nutrition services with special emphasis on field level
Strategy 3.2. Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe	31	AoI 3.2.1 Develop and promote local foods, healthy cooking and food combinations, safe storage including knowledge on nutrient labelling
	32	AoI 3.2.2. Scale-up integrated nutrition education strategies to enhance consumption of healthy, diets, increase awareness of the nutrient composition of local foods as well as to prevent and control malnutrition (undernutrition and overnutrition)
Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation	33	AoI 3.3.1. Expand programs for immunization, control of ARI, prevention of cholera and diarrhoeal diseases
	34	AoI 3.3.2. Strengthen the implementation of NNS delivery integrated with community clinics targeting children and women suffering from persistent weakness and micronutrient deficiencies
	35	AoI 3.3.3. Scale up the supply of safe water for consumption and domestic use

Programme II.9. Promotion of agriculture-driven, off-farm employment and other employment along the food chain particularly for rural youth, women and disabled people	2.4.1
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PILLAR III: Consumption and utilization of healthy and diversified diets for achieving nutrition improvements	PoA AoI covered
Programme III.1. Development of a national-level food production, supply and consumption plan based on a nutrient gap analysis	3.1.1.
Programme III.2. Operationalization of healthy diets for nutrition outcomes	3.1.2
Programme III.3. Expanded human resources and strengthened institutional arrangements to improve performance of nutrition services with special emphasis on enhancing child nutrition outcomes at sub national levels	3.1.3
Programme III.4. Enhanced nutrition knowledge, good dietary practices and consumption of safe and nutritious diets for the prevention and control of malnutrition and NCDs	3.2.1; 3.2.2
Programme III.5. Expansion of programmes for immunization, control of ARI, prevention of cholera and diarrhoeal diseases	3.3.1
Programme III.6. NNS delivery and early childcare practices to promote maternal and child nutrition	3.3.2
Programme III.7. Supply of safe water for consumption and domestic use enhanced,	3.3.3, 3.3.4

	36	AoI 3.3.4. Improve sanitary facilities and hygiene practices, including the prevention of animal to human transmission of disease and prevention and control of food and water- borne illness	improved sanitary facilities and hygiene practices to better impact food utilization and nutrition outcomes	
OBJECTIVE 4: To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions			PILLAR IV: Access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions	PoA AoI covered
Strategy 4.1 Improve management of the public food stock and distribution system	37	AoI 4.1.1. Inform decision-making and improve planning for price support to farmers, market stabilization and public food distribution	Programme IV.1. Improved management of the public food stock and distribution system	4.1.1; 4.1.2; 4.1.3
	38	AoI 4.1.2. Enhance the management of procurement, public food stocks and prices stabilization activities and implement a nutrition sensitive PFDS		
	39	AoI 4.1.3. Ensure adequate storage of food grain maintaining quality and prevent deterioration of stored foodstuffs in the PFDS		
Strategy 4.2. Improve disaster preparedness, responses, rehabilitation and mitigation	40	AoI 4.2.1. Increase the resilience of agriculture systems through various mechanisms notably climate-smart technologies, adoption of stress-tolerant crop varieties and implementation of good agriculture, animal husbandry and fisheries practices for the production of healthy foods	Programme IV.2. Increased resilience of agriculture systems	4.2.1
	41	AoI 4.2.2. Increase the disaster-coping ability of poor farming families, support home-based farming especially through “Amar Bari Amar Khamar” (My Home My Farm), and protect poultry, livestock and other assets	Programme IV.3. Disaster-coping ability of vulnerable families	4.2.2; 4.2.3
	42	AoI 4.2.3. Ensure operation of emergency shelters with nutritious and safe food, safe drinking water, sanitation and healthcare for disaster-affected people, especially for women, elderly, disabled and children		
	43	AoI 4.2.4. Facilitate and coordinate disaster response, mitigation and rehabilitation through timely and strategic storage of public food stock, rapid distribution to disaster-affected people, and effective mobilization through various modalities including public-private partnerships	Programme IV.4. Facilitation and coordination of disaster response, mitigation and rehabilitation	4.2.4
Strategy 4.3. Strengthen social protection for poor and vulnerable groups, including disabled and displaced	44	AoI 4.3.1. Strengthen social protection in disadvantaged areas and for disadvantaged groups	Programme IV.5. Strengthened social protection in disadvantaged areas and for disadvantaged groups with particular attention to nutrition sensitivity	4.3.1; 4.3.3
	45	AoI 4.3.2. Ensure safety nets for the poorest and nutritionally vulnerable, especially female-headed households, during periods of seasonal crises and food shortages		
	46	AoI 4.3.3. Develop and implement nutrition-sensitive social protection programs, including	Programme IV.6. Safety nets in place during periods of seasonal crises and food shortages	4.3.2

		food fortification, nutrition education, and behaviour change communications
	47	AoI 4.3.4. Ensure proper coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation		
Strategy 5.1. Improve food safety, quality control, and awareness of food safety and hygiene	48	AoI 5.1.1. Ensure conformity and compliance of food safety policies (laws, standards and regulations)
	49	AoI 5.1.2. Develop, improve, and establish traceability mechanisms and enforce regulatory frameworks to control food hazards within the food supply chain
	50	AoI 5.1.3. Develop and promote education and consumer awareness on food safety
Strategy 5.2. Reduce food losses and waste	51	AoI 5.2.1. Minimise on-farm food losses
	52	AoI 5.2.2. Reduce off-farm losses
	53	AoI 5.2.3. Tackle food waste
Strategy 5.3. Improve data, information and analysis for evidence-based planning, monitoring, evaluation, and update of policies and programs through wider partnerships	54	AoI 5.3.1. Produce/generate, disseminate and ensure access to reliable and timely FNS data and information by setting up an inter-agency FNS data sharing mechanism
	55	AoI 5.3.2. Develop and implement a big data analytics ecosystem for the food system
	56	AoI 5.3.3. Operationalise the implementation of the NFNSP, its Plan of Action and Country Investment Plan for FNS through an effective M&E system
	57	AoI 5.3.4. Ensure the cross-sectoral integration of the NFNSP, PoA and its investment plan with other FNS-related initiatives and its coherence with national socio-economic development efforts
Strategy 5.4 Strengthen regulatory management, climate resilience and gender roles	58	AoI 5.4.1. Develop and implement effective regulatory instruments and guidelines for priority issues
	59	AoI 5.4.2 Strengthen gender mainstreaming for food and nutrition security
	60	AoI 5.4.3. Develop and promote climate-resilient food systems
Strategy 5.5. Strengthen FNS	61	AoI 5.5.1 Strengthen policy uptake, nutrition leadership and institutional capacity of relevant secretariats and public institutions

Programme IV.7. Coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development		4.3.4
PILLAR V: Cross-sectoral issues		PoA AoI covered
Food safety marker: Improved food safety, quality control, and awareness of food safety and hygiene		5.1.1; 5.1.2; 5.1.3
FLW marker: Minimised on-farm and off-farm food losses, and waste		5.2.1; 5.2.2; 5.2.3
Programme V.1. Generation, dissemination and access to reliable and timely FNS data and information including Big Data		5.3.1; 5.3.2
Programme V.2. Operationalisation of the implementation of the NFNSP, its Plan of Action and Country Investment Plan and integration with other FNS development efforts		5.3.3; 5.3.4
Programme V.3. Effective regulatory instruments and guidelines		5.4.1
Gender marker: Gender mainstreamed for food and nutrition security		5.4.2
Climate resilience marker: Climate-resilient food system		5.4.3
Programme V.4 Strengthened policy uptake, nutrition leadership and institutional capacity		5.5.1; 5.5.2

	62	AoI 5.5.2. Strengthen the capacities at subnational level including local government, non-state actors and consumer associations by facilitating knowledge exchange and partnerships	at national and subnational level of government	
	63	AoI 5.5.3. Strengthen private sector capacity by promoting the transfer of technologies and knowledge	Programme V.5. Strengthened FNS governance through enhanced participation of private sector and other non-State actors	5.5.3; 5.5.4
	64	AoI 5.5.4. Establish frameworks for national and subnational FNS stakeholder partnerships to ensure mutual accountability, transparency and effectiveness and operationalise an umbrella organization for the active engagement of stakeholders, especially youth		

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