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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROGRAM APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 376.3 MILLION
(US\$500 MILLION EQUIVALENT)

TO THE

PEOPLE'S REPUBLIC OF BANGLADESH

FOR A

PROGRAM ON AGRICULTURAL AND RURAL TRANSFORMATION FOR NUTRITION, ENTREPRENEURSHIP,
AND RESILIENCE IN BANGLADESH

April 6, 2023

Agriculture And Food Global Practice
South Asia Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2023)

Currency Unit = Bangladeshi Taka (BDT)

BDT 104.50 = US\$1

US\$1.32879 = SDR 1

FISCAL YEAR

July 1 - June 30

Regional Vice President: Martin Raiser

Regional Director: John A. Roome

Country Director: Abdoulaye Seck

Practice Manager: Gayatri Acharya

Task Team Leader(s): Valens Mwumvaneza, Md Mansur Ahmed, Jean Saint-Geours



ABBREVIATIONS AND ACRONYMS

ACG	Anticorruption Guidelines	GCRF	Global Crisis Response Framework
ADP	Annual Development Program	GDP	Gross Domestic Product
ANGeL	Agriculture, Nutrition, and Gender Linkages Project	GHG	Greenhouse Gas
APCU	Agency Program Coordination Unit	GoB	Government of Bangladesh
APD	Agency Program Director	GRM	Grievance Redress Mechanism
AWD	Alternative Wetting and Drying	GRS	Grievance Redress Service
BADC	Bangladesh Agricultural Development Corporation	Ha	Hectare
BARC	Bangladesh Agricultural Research Council	HYV	High Yielding Variety
BARI	Bangladesh Agricultural Research Institute	IA	Implementation Agency
BDT	Bangladesh Taka	IAPP	Integrated Agricultural Productivity Project
BMDA	Barind Multipurpose Development Authority	iBAS	Integrated Budget and Accounting System
BoP	Balance of Payments	ICT	Information and Communications Technology
BRRI	Bangladesh Rice Research Institute	IDA	International Development Association
BSd	Breeder Seed	IFAD	International Fund for Agricultural Development
CAD	Current Account Deficit	IFC	International Financial Corporation
CCDR	Country Climate and Development Report	IFSA	Integrated Fiduciary System Assessment
CN	Concept Note	IPM	Integrated Pest Management
COVID-19	Corona Virus Disease of 2019	IVA	Independent Verification Agency
CPF	Country Partnership Framework	KSC	Krishak Smart Card
CSd	Certified Seed	LC	Letter of Credit
CSA	Climate Smart Agriculture	M&E	Monitoring and Evaluation
DAE	Department of Agricultural Extension	MIS	Management Information System
DAM	Department of Agricultural Marketing	MoA	Ministry of Agriculture
DLI	Disbursement Linked Indicator	MoU	Memorandum of Understanding
DLR	Disbursement Linked Result	MTBF	Medium-Term Budgetary Framework
DTT	DLI Technical Team	NAP	National Agriculture Policy
ECoP	Environmental Code of Practice	NATP	National Agricultural Technology Program
EIRR	Economic Internal Rate of Return	NARS	National Agriculture Research System
ENPV	Economic Net Present Value	OTJ	On-the-Job Training
E&S	Environmental and Social	PAP	Program Action Plan
E&S Guidelines	Environmental and Social Risks Management Requirements and Procedures	PARTNER	Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience
ESMF	Environment and Social Management Framework	PCU	Program Coordination Unit
ESMP	Environment and Social Management Plan	PDO	Program Development Objective
ESMS	Environmental and Social Management System	PforR	Program for Results
ESSA	Environmental and Social Systems Assessment	PIP	Program Implementation Plan
FAO	Food and Agricultural Organization of the United Nations	PoA	Plan of Action
FD	Finance Division	PS	Private Sector
FM	Financial Management	PSC	Program Steering Committee
FS	Food Safety	RA	Results Area
FSd	Foundation Seed	R&D	Research and Development
FY	Fiscal Year	SAM	Social Accounting Matrix
FYP	Five Year Plan	SCD	Systematic Country Diagnostic
GAP	Good Agricultural Practices	SEA	Sexual Exploitation and Abuse
GBV	Gender-Based Violence	SH	Sexual Harassment



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Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh(PARTNER) (P176374)

TA	Thematic Area	WB	World Bank
tCO2e	Metric ton of carbon dioxide equivalent	WBG	World Bank Group
USAID	United States Agency for International Development	WO/P	Without-Project
VC	Value Chain	W/P	With-Project

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Bangladesh	Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh(PARTNER)	
Project ID	Financing Instrument	Does this operation have an IPF component?
P176374	Program-for-Results Financing	No

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Contingent Emergency Response Component (CERC)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Small State(s)	<input type="checkbox"/> Conflict
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)	

Expected Project Approval Date	Expected Closing Date
27-Apr-2023	31-Dec-2028
Bank/IFC Collaboration	Joint Level
Yes	Complementary or Interdependent project requiring active coordination

Proposed Program Development Objective(s)

The Program Development Objective (PDO) is to promote diversification, food safety, entrepreneurship, and climate resilience in the agri-food systems of Bangladesh.

Organizations

Borrower : People's Republic of Bangladesh



Implementing Agency : Bangladesh Agricultural Development Corporation

Contact: Abdullah Sazzad ndc

Title: Chairman

Telephone No: 8802-223384358

Email: chairman@badc.gov.bd

Implementing Agency : Bangladesh Agricultural Research Council

Contact: Dr. Shaikh Mohammad Bokhtiar

Title: Executive Chairman

Telephone No: 8802-22242666

Email: ec.barc@barc.gov.bd

Implementing Agency : Bangladesh Agricultural Research Institute

Contact: Dr. Debasish Sarker

Title: Director General

Telephone No: 8802-49270000

Email: dg.bari@bari.gov.bd

Implementing Agency : Bangladesh Rice Research Institute

Contact: Dr. Md. Shahjahan Kabir

Title: Director General

Telephone No: 8802-49272040

Email: dg@brri.gov.bd

Implementing Agency : Barind Multipurpose Development Authority

Contact: Md. Abdur Rashid

Title: Executive Director

Telephone No: 8802-588862668

Email: bmdahq@bmda.gov.bd

Implementing Agency : Department of Agricultural Extension

Contact: Badal Chandra Biswas



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Title:	Director General
Telephone No:	8802-55028369
Email:	dg@dae.gov.bd
Implementing Agency :	Department of Agricultural Marketing
Contact:	Omar Md. Imrul Mohsin
Title:	Director General
Telephone No:	8802-55028455
Email:	dg@dam.gov.bd
Implementing Agency :	Ministry of Agriculture
Contact:	Wahida Akter
Title:	Secretary
Telephone No:	8802-55100100
Email:	secretary@moa.gov.bd

COST & FINANCING

SUMMARY

Government program Cost	3,090.00
Total Operation Cost	1,483.00
Total Program Cost	1,483.00
Total Financing	1,483.00
Financing Gap	0.00

Financing (USD Millions)

Counterpart Funding	800.00
Borrower/Recipient	800.00
International Development Association (IDA)	500.00



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IDA Credit	500.00
Commercial Financing	140.00
Unguaranteed Commercial Financing	140.00
Cofinancing - Other Sources (IFIs, Bilaterals, Foundations)	43.00
International Fund for Agriculture Development	43.00

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	SML Amount	Total Amount
Bangladesh	500.00	0.00	0.00	500.00
National Performance-Based Allocations (PBA)	500.00	0.00	0.00	500.00
Total	500.00	0.00	0.00	500.00

Expected Disbursements (USD Millions)

Fiscal Year	2023	2024	2025	2026	2027	2028	2029
Absolute	0.00	125.00	21.75	49.88	87.00	102.83	113.55
Cumulative	0.00	125.00	146.75	196.63	283.63	386.45	500.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Finance, Competitiveness and Innovation, Governance, Poverty and Equity, Water

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)



Risk Category	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● Substantial
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Substantial
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Moderate
8. Stakeholders	● Moderate
9. Other	
10. Overall	● Substantial

COMPLIANCE

Policy

Does the program depart from the CPF in content or in other significant respects?

[] Yes [✓] No

Does the program require any waivers of Bank policies?

[] Yes [✓] No

Legal Operational Policies

Triggered

Projects on International Waterways OP/BP 7.50

Yes

Projects in Disputed Areas OP/BP 7.60

No

Legal Covenants

Sections and Description

The Co-financing Deadline for the effectiveness of the Co-financing Agreement is 6 months after the Effective Date of the Financing Agreement.



(Section 4.01 of the Financing Agreement)

Sections and Description

The Recipient shall, not later than 3 months after the Effective Date, establish and thereafter maintain throughout the duration of the Program the Program Steering Committee, headed by the Secretary of Ministry of Agriculture, with composition and terms of reference in accordance with the provisions of the Program Operations Manual, responsible for functions as specified in the Financing Agreement.

(Section I.A.2(a) of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall, not later than 3 months after the Effective Date, establish and thereafter maintain throughout the duration of the Program: (i) the Program Coordination Unit within the DAE; (ii) an APCU within each of the DAE, DAM and the Program Implementing Entities; (iii) a DTT within each of the DAE, DAM and the Program Implementing Entities; and (iv) Program Implementation Committee, with composition and terms of reference satisfactory to the Association and in accordance with the provisions of the Program Operations Manual, responsible for functions as specified in the Financing Agreement.

(Sections I.A.2(b) to (d) of Schedule 2 to the Financing Agreement; Section I.B of Schedule to each of the Program Agreements)

Sections and Description

To facilitate the carrying out of each of the Program Implementing Entity's Respective Part of the Program, the Recipient shall make part of the proceeds of the Financing available to each Program Implementing Entity under a Subsidiary Agreement between the Recipient and each Program Implementing Entity, under terms and conditions approved by the Association.

(Section I.B(a) of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient, through DAE, shall ensure DAM shall, and shall cause each of the Program Implementing Entities, to no later than 3 months after the Effective Date, create separate main Program code for the Program Expenditures.

(Section I.E.1(b) of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient, through DAE, shall within 3 months after the Effective Date, ensure that each of the DAE, DAM and the Program Implementing Entities adopt the Program Operations Manual as shall have been approved by the Association and thereafter, implement the Program in accordance with the Program Operations Manual.

(Section I.C.1(b) of Schedule 2 to the Financing Agreement; Section I.A.2 of Schedule to each of the Program Agreements)

**Sections and Description**

Each of the Program Implementing Entities shall provide to the Recipient, not later than 6 months after the Closing Date, for incorporation in the report referred to in Section 5.08 (c) of the General Conditions all such information as the Recipient or the Association shall reasonably request for the purposes of these Sections.

(Section III.2 of Schedule to each of the Program Agreements)

Sections and Description

Except as may otherwise be explicitly required or permitted under the Financing Agreement, the Program Agreements or as may be explicitly requested by the Association, in sharing any information, report, or document related to the activities described in Schedule 1 to the Financing Agreement or the Program Agreements, the Recipient shall ensure that such information, report, or document does not include Personal Data.

(Section III.A of Schedule 2 to the Financing Agreement; Section III.3 of Schedule to each of the Program Agreements)

Sections and Description

The Recipient through DAE shall select and engage by the earlier of the date which is 6 months after the Effective Date and the first date on which the Recipient undertakes a verification and thereafter maintain throughout the period of implementation of the Program, the services of one or more Independent Verification Agent(s) with qualification and experience and under terms of reference satisfactory to the Association, to perform functions listed in the Financing Agreement.

(Section III.B.1(a) of Schedule 2 to the Financing Agreement)

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	<p>The Subsidiary Agreements have been executed on behalf of the Recipient and each of the Project Implementing Entities and all the conditions precedent to their effectiveness or to the right of the Recipient to make withdrawals under each of them (other than the effectiveness of the Financing Agreement) have been fulfilled.</p> <p>(Section 5.01 of the Financing Agreement)</p>



I. STRATEGIC CONTEXT

A. Country Context

1. **Bangladesh made rapid social and economic progress in recent decades and reached lower middle-income status in 2015.** Stable macroeconomic conditions supported average annual real gross domestic product (GDP) growth of 6.7 percent between 2010 and 2019. Strong labor market gains contributed to a sharp decline in poverty, with the national poverty rate falling from 48.9 to 24.5 percent between 2000 and 2016. However, the pace of poverty reduction slowed in recent years even as growth accelerated, particularly in urban areas and in the west of the country.¹ Annual consumption growth of the bottom 40 percent (1.2 percent) trailed that of the overall population (1.6 percent) from 2010 to 2016. Bangladesh faces a high level of vulnerability to the effects of climate change. The Global Climate Risk Index ranks Bangladesh as the world's seventh most-affected country in 2000-2019² with high susceptibility to extreme weather events such as cyclones, floods, and storm surges. Extreme heat, sea level rise, strong winds, and droughts are also part of the climate and geophysical hazards that the country faces.
2. **A strong post-pandemic recovery was disrupted by rising global commodity prices and synchronous global policy tightening.** Bangladesh navigated the Corona Virus Disease of 2019 (COVID-19) pandemic with prudent macroeconomic policies, maintaining positive real GDP growth. An effective stimulus program supported a rapid economic recovery in fiscal year (FY) 21, as movement restrictions ended. However, worsening external conditions led to a surge in imports in mid-FY22. Inflation accelerated, driven by rising commodity prices and an upward adjustment in administered prices of petroleum products. In the first half of FY23, high inflation weighed on private consumption and fiscal consolidation measures slowed government consumption and investment growth. Exports remained resilient, growing by 9.8 percent in the first seven months (July-January) of FY23. On the supply side, strong industrial growth in FY22 slowed in the first half of FY23 due to energy shortages, rising input costs, and limited issuance of letters of credit (LC) for key imports. Services growth also slowed from a FY22 post-pandemic rebound, as consumer purchasing power declined with rising inflation in the first half of FY23. Modest agricultural growth was sustained, although increases in the diesel price impacted production. Monetary policy was tightened through higher policy rates, although transmission was impaired by a cap on lending interest rates. Tight liquidity conditions and narrow net interest margins weighed on private sector credit growth.
3. **The Balance of Payments (BoP) deficit widened in FY22 with rising imports.** The current account deficit (CAD) surged in the second half of FY22 amidst rising commodity and intermediate goods prices. Import price moderation and limited LC issuance narrowed the CAD in the first half of FY23, supported by resilient export growth. However, a sharp contraction in trade credit and lower medium- and long-term lending contributed to a financial account deficit, resulting in a US\$7.2 billion BoP deficit in the first half of FY23 and a 7.2 percent depreciation of the interbank exchange rate. Gross foreign exchange reserves declined by US\$12.6 billion over a one-year period to US\$32.6 billion at the end of January 2023 and authorities requested additional external financing from development partners. An International Monetary Fund program was approved by the Executive Board in January 2023.

¹ World Bank, 2021. Bangladesh Systematic Country Diagnostic Update.

² German watch (2021) Global Climate Risk Index 2021.



4. **The fiscal deficit widened to 4.3 percent of GDP in FY22 from 3.7 percent in FY21 but remained below a 5 percent of GDP target.** Tax revenue remained among the lowest in the world at 7.6 percent of GDP in FY22. Expenditure growth accelerated with higher subsidy spending as a result of elevated commodity prices. Capital expenditure rose in FY22 led by infrastructure megaprojects, before being rationalized in the first half of FY23 to narrow the budget deficit.

5. **Real GDP growth is expected to decelerate to 5.2 percent in FY23 before returning to its long-term trend.** Modest export growth is expected in FY23, led by rising ready-made garment market share. Growth is expected to accelerate in FY24, as inflationary pressure eases and reform implementation accelerates, converging to around 6.5 percent over the medium term depending on the depth of economic reforms implemented. The fiscal deficit is projected to narrow to 3.7 percent of GDP over the medium term as revenues rise with increasing trade and economic activity, higher incomes, and tax administration reform implementation. The CAD will narrow as imports normalize with moderating commodity prices. Remittance inflows are expected to rise with a higher outflow of workers and resilient demand for workers in the Gulf region. A financial account deficit is projected to contribute to external sector pressure in FY23, before returning to surplus in FY24.

6. **Structural reforms are needed to support a faster pace of growth over the medium term.** To achieve the vision of attaining upper middle-income status by 2031, Bangladesh needs to create jobs and employment opportunities by creating a competitive business environment, diversifying exports, increasing human capital, building efficient infrastructure, deepening the financial sector and establishing a policy environment that attracts private investment. At the same time, Bangladesh will need to implement coordinated policies and investments to address rising climate vulnerabilities.³ These reforms will support international competitiveness as Bangladesh prepares for graduation from the United Nations Least Developed Country status in 2026, which will gradually result in reduced access to concessional financing and preferential external market access for its exports.

B. Sectoral and Institutional Context

7. **Bangladesh has had an impressive track record of agricultural growth since the mid-1990s.** The sector grew by over 4 percent annually between 1996 and 2019⁴ and domestic food production almost doubled during the last two decades. Much of the past success in agriculture was driven by the policy reforms implemented since the 1980s, followed by strategic investments in research and infrastructure.⁵ The reforms were made in order to liberalize the agricultural inputs market in the 1980s, particularly in relation to fertilizer and irrigation. These were then followed by reforms in the seed sector in the 1990s. These reforms were accompanied by strategic investments in agricultural research and development (R&D) and extension, with a sustained policy focus on increasing rice production. As a result, Bangladesh achieved rice self-sufficiency and overall food security, two paramount objectives of past agriculture strategies. Other crops, particularly horticulture crops, have also maintained sustained growth since the 2000s and the land area under fruits, flowers, fiber, spices, and pulses increased by more than 60 percent between 2008 and 2018.⁶

³ World Bank, 2022. Country Climate and Development Report.

⁴ World Bank. 2021. World Development Indicators.

⁵ Dynamics of Rural Growth in Bangladesh, World Bank 2016.

⁶ Bangladesh Bureau of Statistics. 2020. Agriculture Census 2018.



8. **Agriculture⁷ is a key driver of rural poverty reduction in Bangladesh.** Primary agriculture accounts for 54 percent of rural employment and 43 percent of national employment.⁸⁹ Between 2000 and 2010, agriculture growth contributed 69 percent to rural poverty reduction in the country, with a more modest contribution of about 27 percent between 2010 and 2016, as the impacts of the earlier sector reforms and investments on productivity started plateauing and agricultural growth started trending downward.¹⁰

9. **A new wave of reforms and investments is needed to continue the agriculture transformation process towards higher crop productivity and diversification, as well as higher income earning potential for rural producers.** Current global constraints notwithstanding, Bangladesh appears prepared to usher in a new generation of reforms in the agriculture sector and to enable a greater level of private sector (PS) participation to help the agriculture sector diversify and take advantage of the shifting urban consumer demand. With rapid urbanization and fast income growth, the demand for fruits, vegetables, meat, eggs, and fish is expected to expand by more than 50 percent by 2030 in Bangladesh. However, domestic production faces challenges in meeting that growing demand, which has resulted in a three-fold increase in food imports, from US\$3.6 billion in 2007 to US\$10.7 billion in 2017. Considering the limited scope for land and irrigation expansion in the country, improving rice productivity would not only help consolidate food security, but would also help release land for other crops. Productivity increases are needed in the Aman and Aus seasons – during which a 75 percent yield gap remains – to help release land during the Boro season.¹¹ Such diversification would in turn contribute to enhancing farm profitability, as rice production has become comparatively less profitable due to a significant increase in labor and irrigation costs.¹²

10. **Agricultural diversification will support additional improvements in nutritional outcomes.** Bangladesh has made significant strides in reducing malnutrition. Nationally, the prevalence of stunting fell from 41 percent in 2011 to 28 percent in 2019.¹³ However, the food consumption pattern remains poorly diversified, with as much as 64 percent of the dietary energy supply coming from cereals in 2016-17¹⁴ and with an inadequate protein and micronutrient intake. Fruit and vegetable consumption in Bangladesh is, for instance, only 204 g/person/day, significantly below the minimum dietary requirements defined by the Food and Agricultural Organization of the United Nations (FAO) and the World Health Organization of 400 g/person/day.

11. **Several on-farm productivity constraints and off-farm value addition and commercialization constraints are slowing down the transformation and diversification of the agriculture sector.** On-farm productivity constraints include (i) land fragmentation (around 85 percent of farm households operate less than 1 hectare, Ha)¹⁵ and informality in land rental markets; (ii) limited access to high-yielding variety

⁷ Agriculture sector in Bangladesh is comprised of three subsectors- crop (including horticulture), livestock, and fisheries.

⁸ Bangladesh Bureau of Statistics. 2017. Quarterly Labor Force Survey 2016.

⁹ World Bank. 2019. Bangladesh Poverty Assessment.

¹⁰ World Bank 2020. *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities*.

¹¹ There are three planting seasons for rice in Bangladesh: Aus (March-April), Aman (July-August), and Boro (December-January).

¹² Farmers make US\$56 per Ha from rice cultivation, whereas returns on alternative crops can range between US\$300 and US\$600 per Ha. World Bank 2020. *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities*.

¹³ USAID. 2021. Bangladesh: Nutrition Profile

¹⁴ Government of Bangladesh. 2018. National Agriculture Policy

¹⁵ World Bank 2020. *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities*.



(HYV) seeds and technologies for paddy and non-paddy crops;¹⁶ (iii) limited knowledge and adoption of good agricultural practices (GAP); and (iv) limited use of farmer aggregation models, which constrains the delivery of extension services, access to finance, and market linkages. Key constraints hindering off-farm value addition and commercialization include (i) the limited number of formal off-takers and limited market linkages and coordination between such off-takers and producers; (ii) inadequate and costly marketing infrastructure and logistical services, which limit value addition, contribute to post-harvest losses, and increase costs along the agri-food value chain (VC); and (iii) inadequate upholding of appropriate food safety (FS) practices and product quality standards needed to access growing lucrative markets, both domestic and export.¹⁷ On-farm and off-farm constraints are exacerbated by other cross-sectoral issues such as access to finance and overall investment climate and competitiveness challenges.¹⁸

12. Within this environment, a range of factors limit the ability of youth and women to fully benefit from opportunities presented by the transformation of the agriculture sector. Women's labor force participation in Bangladesh remains less than half of that for men. In rural areas, however, 66 percent of women are engaged in agricultural work compared to 44 percent of men.¹⁹ In spite of the large representation and feminization of agriculture, women are mostly engaged in less lucrative post-harvest activities with comparatively limited involvement in production and marketing. Agricultural work for women is primarily home-based, low or unpaid. About 11 percent of women who report working in agriculture are engaged in unpaid farm activities, compared to only two percent of men.²⁰ Women's entrepreneurship along the agri-food VC is also very limited, with the share of women-owned agribusinesses at just below two percent.²¹ Based on the gender analysis carried out for the preparation of this Program, key constraints to enhancing women's productive participation and incomes along the agri-food VC are access to information and technical knowledge, access to finance, and access to markets. Women are, for instance, more likely to access information from informal sources and to have less information on crop and pest management, HYV, and efficient fertilizer use, which are crucial to the adoption of climate resilient agricultural practices. Men, on the other hand, are more likely to receive agricultural information from a range of sources including extension services, service providers, and community meetings.²² Access to credit is essential to allow female entrepreneurs to secure inputs, labor, and equipment. This is because Bangladesh has one of the world's widest financial gender disparities.²³

¹⁶ HYV seeds and technologies newly released for rice by the Bangladesh Rice Research Institute (BRRI) would need to be disseminated more broadly. New stress-tolerant/low-carbon HYV and climate-smart technologies would need to be developed and disseminated for other crops.

¹⁷ Foodborne diseases are causing an estimated US\$1.5 billion productivity loss per year and poor compliance with international FS and quality standards is estimated to have contributed to the 9 percent decline in food exports over the past 10 years. World Bank 2019. The Safe Food Imperative: Accelerating Progress in Low- and Middle-Income Countries. Agriculture and Food Series.

¹⁸ To tackle the impact of some of these cross-sectoral constraints on the outcomes of PARTNER, the Program operates with the International Finance Corporation (IFC), which works on improving the overall business climate. The World Bank has an ongoing memorandum of understanding (MoU) with IFC to work on improving FS conditions in Bangladesh.

¹⁹ Bangladesh Bureau of Statistics. 2016. *Bangladesh Quarterly Labour Force Survey (LFS) 2015–16*. Statistics and Informatics Division, Ministry of Planning, Dhaka: Bangladesh Bureau of Statistics (BBS).

²⁰ World Bank. 2021. Bangladesh Rural Income Diagnostic.

²¹ World Bank. 2021. Promoting Rural Enterprises for Inclusive Jobs and Post-Covid Recovery in Bangladesh: Insights from An Enterprise Survey

²² Elizabeth Bryan, Edward Kato, and Quinn. 2021. Gender Differences in Awareness and Adoption of Climate-Smart Practices in Bangladesh. In *Gender, Climate Change and Livelihoods*. Eastin, Joshua; Portland, Jendra (Ed.)

²³ Only 36 percent of women have access to a bank account, compared to 65 percent of males. Roest, J. 2018. "2017 Global Findex: Behind the Numbers on Bangladesh."



The youth also face additional hurdles in succeeding in agribusiness, as only 25 percent of youth between 25 and 34 years of age are engaged in agriculture compared to 60 percent of those between 35 and 64 years of age.²⁴ Considering that unemployment is rising among the youth and is particularly significant among female youth,²⁵ efforts to support gainful employment and entrepreneurship for women and youth in agri-food VCs will be essential to increased their income and resilience.²⁶

13. Bangladeshi agriculture is significantly vulnerable to climate change impacts.²⁷ Climate change is already affecting agricultural production through temperature increases, sea level rise, saltwater intrusion, variation in the frequency and intensity of rainfall, and extreme weather events. These impacts affect crop productivity while increasing the risk of pest infestations. Increased soil and water salinity due to sea level rise is expected to result in a 15.6 percent yield reduction in rice HYVs by 2050.²⁸ Soil salinity is affecting 62 percent of coastal land, and sea level rise may reduce available cropland by about 25 percent in coastal divisions of the country. Late monsoon arrival can lead to water stress, and climate-induced changes in precipitation put pressure on groundwater recharge and surface water, affecting irrigation water supply and the timing of key cropping activities.

14. The impact of climate change on crop and livestock production is exacerbated by environmental degradation caused by poor or maladapted farming methods. This includes monocropping and high levels of synthetic pesticides and fertilizers, which are not only an inefficient use of resources but also acidify the soil, reduce water quality, depress crop yields, threaten FS, undermine food exports, and increase greenhouse gas (GHG) emissions. GHG emissions from agriculture reached 91 million metric tons of carbon dioxide equivalent (tCO₂e) in 2020, which represents 38 percent of national emissions, with livestock and rice accounting for 50 percent and 33 percent of agricultural emissions, respectively. In December 2020, the Ministry of Agriculture (MoA) issued the “Bangladesh Good Agricultural Practices Policy 2020”, which includes measures to combat GHG emissions, amongst others, and which is yet to be implemented. Unsustainable water use patterns and arsenic contamination pose additional risks to sustainable agricultural production systems. Water use efficiency in Bangladesh is one of the lowest in South Asia (e.g., MoA estimates that only 3 percent of total irrigated land uses water efficiently). Technologies and techniques to increase water use efficiency in agriculture have been introduced by the Bangladesh Agricultural Development Council (BADC) and the Barind Multipurpose Development Authority (BMDA) but are yet to be widely disseminated. They include alternate wetting and drying (AWD), solar pumping, buried pipes, energy-efficient sprinklers, and drip irrigation.

15. Addressing on-farm productivity and climate resilience constraints will require reforms that empower farmers' institutions, increase access to quality seeds, and encourage widespread adoption of GAP and climate smart agriculture (CSA) technologies and practices, along with improvements in the delivery of public and private extension services. Specifically, it will require (i) strengthening farmers' institutions such as producer organizations, common interest groups and water users' associations, which can help overcome land fragmentation, informality, and aggregation constraints; (ii) ensuring availability of, and access to quality and resilient seed varieties and other inputs to close the current yield gaps, notably by removing the remaining constraints for PS participation in input markets; (iii) developing and

²⁴ Farole, Thomas, and Yoonyoung Cho. 2017. Jobs Diagnostic Bangladesh. Job Series Issue 9, Washington, DC: World Bank.

²⁵ Farole, Thomas, and Yoonyoung Cho. 2017. Jobs Diagnostic Bangladesh. Job Series Issue 9, Washington, DC: World Bank.

²⁶ World Bank. 2021. Bangladesh Rural Income Diagnostic.

²⁷ A separate Annex PARTNER: Climate Change Technical Note provides details about Bangladesh's climate vulnerability.

²⁸ World Bank. 2019. Bangladesh: Climate-Smart Agriculture Investment Plan.



promoting CSA technologies for greater resilience to climate change; and (iv) ensuring appropriate extension advice and climate information services to farmers to encourage the uptake of CSA, a more efficient use of water resources and agricultural inputs, and the adoption of GAP (including integrated pest management – IPM).

16. Addressing off-farm constraints will require strengthening FS systems and facilities, fostering better post-harvest management practices, improving marketing and logistics infrastructure, and encouraging greater PS participation, coordination, and market linkages along the agri-food VC. Needed actions include (i) strengthening food quality control measures and FS standards, and making certification services more accessible; (ii) PS-led development of better marketing infrastructure and more effective logistical services, with a conducive policy environment promoted by the government; (iii) liberalizing input markets and promoting PS participation in innovation, R&D, seed production and distribution, extension services, off-farm marketing and transport logistics, and processing; and (iv) expansion of VC promotional bodies to facilitate coordination and market linkages between participants from all stages of the same agricultural commodity VC and expand commodity markets through market research, product development, quality standard setting, and advertising and consumer awareness campaigns.

17. Agricultural public policy and expenditures need to be reoriented to strengthen the delivery of key public goods services such as R&D and extension and to improve the efficiency in the delivery of agriculture support programs. In a departure from the heavy focus on rice and fertilizer subsidies of past agricultural policy, the Plan of Action (PoA) of the National Agricultural Policy (NAP) of 2018 emphasizes policies and investments that support diversification, nutrition, and VC development, while paying attention to rice for maintaining food security. Specific actions envisaged under the PoA include (i) investments to improve R&D capacity, particularly for crops other than rice, and removing the remaining regulatory and institutional barriers to PS participation (e.g., streamlining the cumbersome and lengthy process for registering new varieties); (ii) the generation of new stress-tolerant and nutrient-dense rice and non-rice varieties; (iii) completing the deployment by the Department of Agricultural Extension (DAE) of the “Krishak Smart Card” (KSC)²⁹ and expanding its use to provide digital extension services and improve farmers’ access to inputs and financial services; (iv) strengthening information and communications technology (ICT) infrastructure and systems, and human resource capacity for data collection, processing, and analysis; (v) fostering collaboration between VC participants and financial service providers (including for farmers using the KSC); and (vi) establishing Technology Villages to facilitate technology dissemination.

C. Relationship to the CPF and Rationale for Use of Instrument

18. The Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience (PARTNER) is aligned with the Bangladesh Country Partnership Framework (CPF) FY23–FY27 (No. 181003-BD) to be discussed by the Board of Executive Directors on April 27, 2023. It contributes to Objective 5 (Enhanced economic opportunities for women and vulnerable groups) under the CPF’s Higher Level Objective B (Improved Socio-economic Inclusion), by improving agricultural income opportunities for a large share of the rural poor through increased productivity and diversification, with particular focus on women. It is also aligned with Objective 1 (Improved business environment for broad-based PS) by addressing regulatory and policy bottlenecks to agri-food VC development and PS participation, in

²⁹ DAE aims to provide nominative KSCs to every farm family in Bangladesh.



collaboration with IFC on FS, and with Objective 8 (Enhanced sustainability and productivity in the use of natural capital for climate-smart green growth) by boosting climate resilience through CSA.

19. **PARTNER is also consistent with the key priorities identified in the 2021 Bangladesh Systematic Country Diagnostic Update (SCD), the 2022 Bangladesh Country Climate and Development Report (CCDR), the World Bank Group's (WBG) Global Crisis Response Framework (GCRF) and the Maximizing Finance for Development (MFD)³⁰ approach.** The SCD update identified “productive and sustainable management of natural capital” as a key priority and stressed the importance of agricultural growth from a combination of higher agricultural productivity, greater diversification towards high-value crops, and developing a modern resilient agri-food supply chain. The Bangladesh CCDR highlights the promotion of crop diversification and of the adoption of CSA as critical actions to be undertaken by the agriculture sector to build climate resilience. PARTNER is aligned with two of the four pillars of the GCRF: (i) Pillar 3: Strengthening Resilience; and (ii) Pillar 4: Strengthening Policies, Institutions and Investments for Rebuilding Better.³¹ The Program is also consistent with the WBG’s Country Private Sector Diagnostic, which puts emphasis on reforms around input markets, FS, and R&D to diversify agricultural production towards higher value products and VC development to meet the growing demand for food and create jobs. Lastly, PARTNER will contribute to MFD by aiming at optimizing public financial resources and crowding-in private sector financing, as it will leverage about US\$140 million in private capital mobilization from producers, input suppliers, and entrepreneurs (i.e., about 10 percent of the public investment).

20. **Elevating the WBG’s engagement to a Program for Results (PforR) instrument is coherent with the evolving nature of the WBG’s partnership with Bangladesh in the agriculture sector, which is increasingly focused on enhancing the Government of Bangladesh’s (GoB) capacity to implement its own programs.** Over the last thirty years, the WBG has supported the GoB in initiating major institutional reforms in the agriculture sector, which has resulted in the establishment of demand-driven agricultural research and advisory services and contributed to the country’s success story in becoming self-sufficient in rice, fish, and meat. An example is the implementation of the National Agricultural Technology Program, Phase 1 (2008-2014 – NATP-1) and Phase 2 (2016-2023 – NATP-2), co-financed by the World Bank (WB) and the International Fund for Agricultural Development (IFAD). The WBG’s medium term strategy in the agriculture sector is to support the GoB in strengthening the sector’s overall performance notably through improvements in the GoB’s activity planning, coordination of interventions, monitoring of program implementation, and results tracking. The Program will contribute to the implementation of the GoB’s own PoA of the NAP, while sharpening the focus on (i) public expenditures’ performance and results; (ii) coordination and collaboration within government agencies; and (iii) crowding in the PS.

II. PROGRAM DESCRIPTION

A. Government Program

21. **The objective of the GoB’s PoA of the NAP is to achieve safe and profitable agriculture, and sustainable food and nutrition security in Bangladesh.** The NAP aims to transform the agriculture sector by improving the following: R&D capacity, extension service delivery, agricultural mechanization, GAP, irrigation efficiency, post-harvest management, marketing and logistics infrastructure and services, and

³⁰ See: World Bank. 2018. “Future of Food – Maximizing Finance for Development in Agricultural Value Chains.”

³¹ The contribution of each disbursement linked indicator (DLI) to the GCRF pillars is indicated in Table 3, with a total of US\$260 million to Pillar 3 and US\$240 million to Pillar 4.



FS, among others. Through the NAP's PoA, the GoB seeks to ensure food security and improve the people's socioeconomic conditions by increasing crop productivity, production, and profitability, promoting diversification, ensuring nutritious and safe food, improving marketing systems, encouraging efficient utilization of natural resources, and promoting resilience to climate shocks.

22. **The NAP was launched in 2018 and its PoA was finalized in 2020.** The PoA's implementation covers a five-year period, from 2021 to 2025. According to the provisions of the eighth Five-Year-Plan (FYP), the agriculture sector will need an allocation of US\$2.9 billion to achieve the PoA's objectives. The PoA proposes 13 broad areas of intervention called "programs" under 3 corresponding "Thematic Areas" (TA). The NAP is expected to cover a period of ten years as previous NAPs did. Therefore, this PoA is a first phase, expected to be followed by a second covering the same NAP orientations.

23. **TA 1: Promoting Sustainable Food and Nutrition Security** aims at promoting sustainable intensification, diversification, and management of production systems to ensure food and nutrition security through six programs: (i) Crop diversification and sustainable production of safe and nutritious food; (ii) Sustainability of production systems and management of natural resources; (iii) CSA; (iv) Strengthening specialized agriculture, protected cultivation, and production systems in special geographical areas; (v) Efficient and economic extension services for fast and effective transfer of technology; and (vi) Enhancing availability of quality inputs including credit, storage, and marketing.

24. **TA 2: Increasing Income and Livelihood Opportunities for Farmers** aims at increasing farmers' incomes by promoting systems to reduce the cost of cultivation, reduce post-harvest losses, and improve marketing of agricultural products through five programs: (i) Post-harvest management (agro-processing and development of safe and quality VCs); (ii) Appropriate scale mechanization and use of clean energy at farm-level; (iii) Promotion of industrial and export-oriented crop clusters and collaboration with the PS; (iv) Increasing real income of farmers, laborers, and women farmers for their empowerment; and (v) Attracting, skilling, and retaining youth for innovation-based development in agriculture.

25. **TA 3: Modernization of Agricultural R&D, Education, and Extension** aims at supporting the development of technologies to help increase productivity while improving the use of external inputs such as chemical fertilizers and pesticides and the management of natural resources such as soil, water, and biodiversity through two main programs: (i) Quality investment in agricultural research for development; and (ii) Intellectual property rights, sovereignty on natural resources, and international partnership.

B. Theory of Change

26. **The Program's Theory of Change is presented in Figure 1.** Its main premise is that agricultural land is declining, while population is growing, and climate change is a major threat. Agriculture is highly concentrated on rice, with limited diversification. However, growth in rice productivity has slowed, and its financial returns are very low compared to alternative crops whose urban demand is rapidly growing. In addition, malnutrition remains a major concern. This requires reorienting strategic priorities towards more rapid diversification, along with a carefully balanced attention to rice. While PARTNER supports rice productivity increases by exploiting the remaining yield gaps, its major focus is on investments in research, extension, FS, VC organizations, entrepreneurship, and input use efficiency to promote crop diversification. The Program also includes an e-voucher pilot for the provision of efficient input subsidy delivery mechanisms whose lessons can inform the future repurposing of the ongoing fertilizer subsidy program. This approach will safeguard past achievements in ensuring food security while injecting new



momentum into agricultural transformation and will be critical in building the sector's climate resilience.

C. PforR Program Scope

27. **PARTNER is a subset of the government's program, the PoA of the NAP** (Table1). The PoA programs selected for inclusion in PARTNER are the most critical in ensuring that the NAP achieves its overall objectives. A few PoA programs (i.e., 8, 11, and 13) have not been included because they either (i) do not contribute directly to PARTNER's objectives; (ii) have impacts that cannot be easily measured and attributed to PARTNER; (iii) are not in line with recommendations of recent analytical studies; (iv) are heavily influenced by other externalities; or (v) are supported by other fully funded programs. "Promotion of Industrial and Export-oriented Crops Clusters & Collaboration with PS" and "Appropriate Scale Mechanization & Use of Clean Energy in Farm" under TA 2 are fully funded, either by GoB or other development partners. "Increasing Real Income of Farmers, Labors and Women Farmers for their Empowerment" aims at ensuring remunerative prices, which is heavily influenced by other externalities. "Intellectual Property Rights Sovereignty on Natural Resources and International Partnership" under TA 3 will require long legislative and administrative actions that are beyond PARTNER's scope. The MoA's ongoing input subsidy program, which accounts for a major share of the MoA's annual budget is also excluded from the PforR.³² PARTNER's geographic scope is nationwide.

28. **The GoB, the International Development Association (IDA), IFAD, and private investments will contribute to meeting PARTNER's costs.** The PoA of the NAP was developed for an initial five-year period from 2021 to 2025, while the NAP, like previous agricultural policies, provides policy orientations for ten years, from 2018 to 2028. PARTNER will be implemented from 2023 to 2028. The GoB's contribution (US\$800 million) will come from the available budget of the MoA's ongoing and approved programs aligned with PARTNER's results areas (RA) and from an incremental contribution. IFAD's and the private sector's contributions will be US\$43 million and US\$140 million, respectively (Table 2).

29. **To achieve its development objective, PARTNER will focus on three RAs** that have strong synergies with each other and are mutually supportive:³³

30. **RA 1: Promoting Sustainable and Nutritious Food Production** by supporting (i) a more efficient use of inputs and an alleviation of FS challenges through the development and adoption of GAP standards and protocols;³⁴ (ii) increased rice productivity and resilience through the development and adoption of stress-tolerant and nutrient-dense rice varieties³⁵ and of climate-smart production packages, including precision agriculture; (iii) crop diversification through the development and adoption of stress-tolerant and nutrient-dense varieties of non-rice cereals, pulses, oilseeds, spices, and horticulture crops; and (iv) increased water use efficiency through the adoption of efficient irrigation technologies.

³² In FY 2020-2021, BDT 95,000 million (US\$1.1 billion) was allocated as direct assistance to farmers under the form of "subsidizing fertilizers and other agricultural activities", which accounted for 61 percent of the MoA's total budget.

³³ The Annex PARTNER: Climate Change Technical Note elaborates DLIs' contribution to climate resilience and mitigation.

³⁴ Adoption refers to the process by which farmers integrate new techniques, tools, innovations, and approaches into their farming systems to improve productivity, efficiency, and sustainability.

³⁵ This will require the production and multiplication of breeder seeds (Bsd), foundation seeds (Fsd), and certified seeds (Csd).



Figure 1. PARTNER's Theory of Change

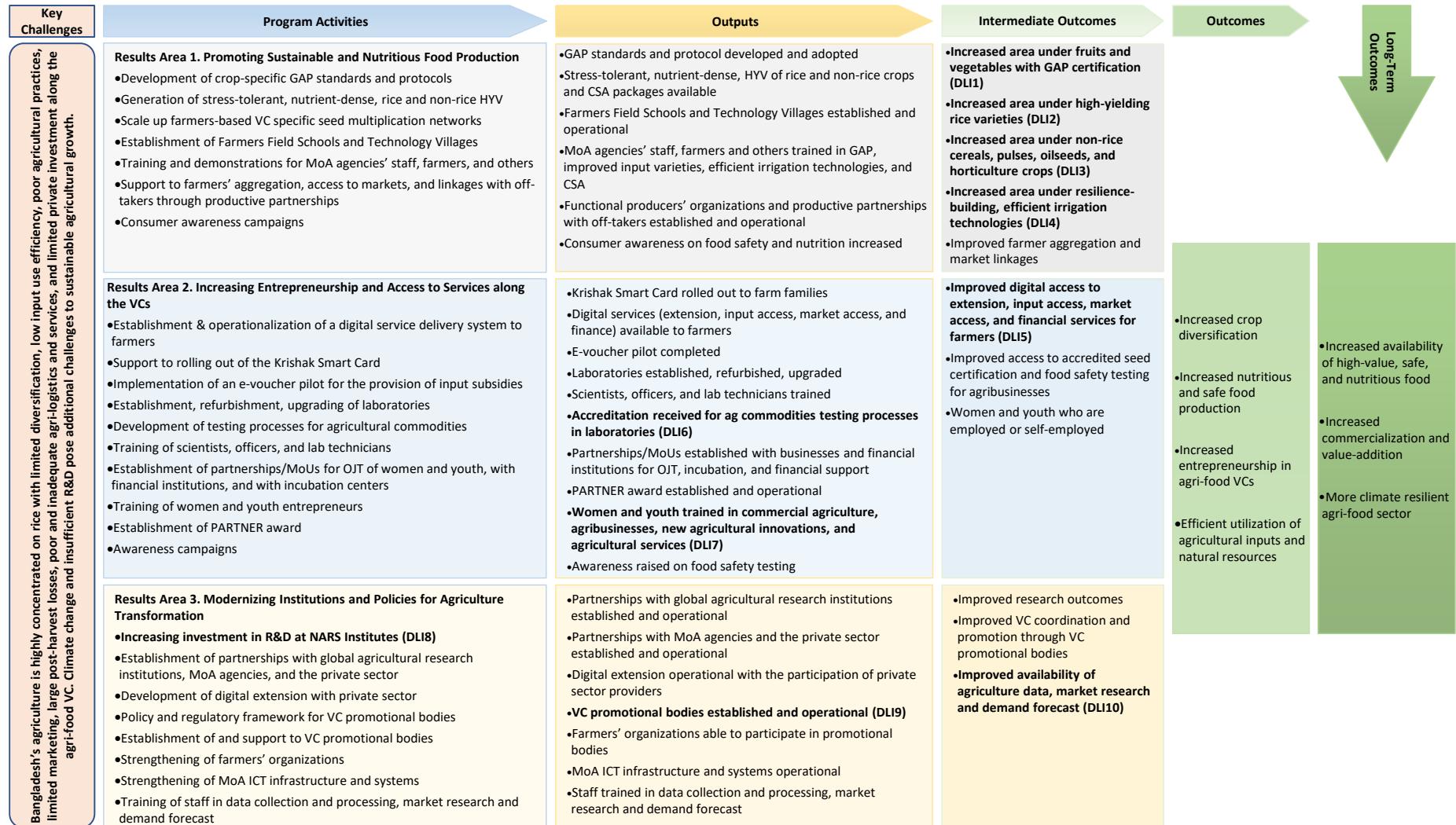




Table 1: Alignment between TAs of the PoA of the NAP and PARTNER's RAs

	NAP PoA (2021-25)		PARTNER Program (2023-28)
Development objective	<i>To achieve safe, profitable agriculture and sustainable food and nutrition security</i>		<i>To promote diversification, food safety, entrepreneurship, and climate resilience in the agri-food systems of Bangladesh</i>
TA	Programs	RA	Activities
I. Sustainable Food and Nutrition Security	1. Crop Diversifications and sustainable production of safe and nutritious food	I. Promoting Sustainable and Nutritious Food Production	1. Development, rollout, and adoption of GAP standards in fruit and vegetable production
	2. Strengthening Specialized Agriculture, Protected Cultivation and Production Systems in Special Geographical Areas		2. Development and adoption of high yielding rice varieties
	3. Efficient and Economic Extension Services for Fast and Effective Transfer of Technology		3. Crop diversification towards non-rice cereals, pulses, oilseeds, and horticulture crops
	4. Enhancing Availability of Quality Inputs including Credit, Storage and Marketing		4. Adoption of efficient irrigation technologies by farmers
	5. CSA		
	6. Sustainability of production systems and management of natural resources		
II. Increasing Income and Livelihood Opportunities for Farmers	7. Post-Harvest Management: agro-processing and development of safe & quality VC	II. Increasing Entrepreneurship and Access to Services along the VCs	5. Expansion of digital agricultural service provision through KSC
	8. Promotion of Industrial & Export-oriented Crops Clusters & Collaboration with PS ³⁶		6. Promotion of the accreditation of seed certification and FS testing processes
	9. Appropriate Scale Mechanization (ASM) & Use of Clean Energy in Farm		7. Promotion of agri-food entrepreneurship for youth and women
	10. Attracting, Skilling and Retaining Youth for Innovation-based development in Agriculture		
	11. Increasing Real Income of Farmers, Labors and women farmers for their empowerment ³⁷		
III. Modernization of Agricultural Research, Education & Extension	12. Quality investment in Agricultural Research and Extension Services for development	III. Modernizing Institutions and Policies for Agriculture Transformation	8. R&D activities for new technologies and innovations increased along with an operational evaluation system for National Agriculture Research System (NARS) institutes
	13. Intellectual Property Rights Sovereignty on Natural Resources and International Partnership		9. Establishment and operationalization of VC promotional bodies for select commodities
			10. Improvement of quality information system (agricultural statistics and market research services incl. foreign markets)

31. **RA 2: Increasing Entrepreneurship and Access to Services along the VCs** by supporting (i) a more efficient provision of services and subsidies to farmers through the development and adoption of digital agricultural services tools; (ii) improved FS and access to markets through the accreditation of seed certification and FS testing processes; and (iii) increased female and youth entrepreneurship through skills strengthening and advisory support.

³⁶ There are other fully funded programs that cover proposed export crops of jute, sugarcane, and cotton.

³⁷ Proposed measures for ensuring remunerative prices to farmers have larger macroeconomic impacts beyond this operation.



32. **RA 3: Modernizing Institutions and Policies for Agriculture Transformation** by supporting (i) increased R&D activities and more efficient extension services through greater investments in R&D, as well as partnerships with global agricultural research institutions and with the PS; (ii) improved VC coordination and promotion through the establishment of VC promotional bodies; and (iii) an improved agricultural information system through a strengthening of ICT infrastructure and systems and of human resource capacity in data collection, entry, processing, and analysis.

Table 2: Summary of PARTNER's Financing Plan

Source	Amount (U\$ Million)	Share of Financing (Percent)
1. GoB	800	54
1.1. Available budget of GoB's ongoing and approved programs	669.9	45
1.2. Incremental budget	130.1	9
2. Development Partners	543	37
2.1. IDA	500	34
2.2. IFAD	43	3
3. Private Sector	140	9
Total	1,483	100

D. Program Development Objective(s) (PDO) and PDO Level Results Indicators

33. The PDO is to promote diversification, food safety, entrepreneurship, and climate resilience in the agri-food systems of Bangladesh. It will be assessed by the following indicators:
- Increased area under non-rice cereals, pulses, oilseeds, and horticulture crops (Ha);
 - Increased area under fruits and vegetables with GAP certification (Ha);
 - Women and youth trained under the Program achieving at least a 30 percent income increase (Number); and
 - Increased area under resilience-building, efficient irrigation technologies (Ha).

E. Disbursement Linked Indicators (DLI) and Verification Protocols

34. **The proposed Program will disburse against a set of agreed upon DLIs, in accordance with demonstrated evidence of achieving a selective set of strategic and monitorable targets.** Disbursement Linked Results (DLR), budget allocations,³⁸ lead implementation agencies (IA), contributing IAs, and GCRF pillars³⁹ for each RA and each DLI are included in Table 3.⁴⁰

35. **The verification of DLI achievement will be carried out by a third-party independent verification agency (IVA) based on agreed protocols.** DAE will prepare consolidated reports on the achievement of results using monitoring and evaluation (M&E) data collected by the IAs. All M&E data collected by the IAs will be uploaded into the Management Information System (MIS), which will be updated regularly. The third-party IVA will use the MIS data and undertake necessary protocols to verify the reported results.

³⁸ For each DLI, IDA contributes 92.08 percent and IFAD contributes 7.92 percent.

³⁹ The GCRF's four pillars are (i) Pillar 1: Responding to Food Insecurity; (ii) Pillar 2: Protecting People and Preserving Jobs; (iii) Pillar 3: Strengthening Resilience; and (iv) Pillar 4: Strengthening Policies, Institutions and Investments for Rebuilding Better.

⁴⁰ Annex 2 provides a detailed discussion of each DLI. A separate Annex explains DLIs' link to climate resilience and mitigation.



Table 3. PARTNER RAs, DLIs, DLRs, Allocated Budgets, IAs, and GCRF Pillars

RA	DLI	DLR	Scalable (Y/N)	Target	IDA budget (US\$ million)	Total budget (IDA + IFAD) (US\$ million)	Lead IA	Contributing IAs	GCRF Pillars
RA 1	DLI 1 – Development, rollout, and adoption of GAP standards in fruit and vegetable production	DLR 1.1 – GAP standards and protocols for fruits and vegetables developed and approved by MoA	Y	15	55	59.73	DAE	BADC, BARC, BARI, DAM	3
		DLR 1.2 – Farmers and certification staff trained in GAP certification	Y	1 million farmers & 1,500 staff					
		DLR 1.3 – Area under fruits and vegetables with GAP certification (Ha)	Y	300,000					
	DLI 2 – Development and adoption of high-yielding rice varieties	DLR 2.1 – Stress-tolerant and nutrient-dense rice varieties generated	Y	5	51	55.39	BRRI	DAE, BADC, BARC	3
		DLR 2.2 – Network established and operational for seed multiplication and marketing (Tons of seeds)	Y	50 BSd / 4,000 FSd / 5,000 CSd					
		DLR 2.3 – New area under high-yielding rice varieties (Ha)	Y	200,000					
	DLI 3 – Crop diversification towards non-rice cereals, pulses, oilseeds, and horticulture crops	DLR 3.1 – Stress-tolerant and nutrient-dense varieties developed and on-farm trial for non-rice crops conducted	Y	15	60	65.16	BARI	DAE, BADC, BARC	3
		DLR 3.2 – Seed/samplings/propagative material multiplication and marketing network (including private sector participation) established and operational (Tons of seeds)	Y	50 BSd / 4,000 FSd / 5,000 CSd					
		DLR 3.3 – New area under non-rice cereals, pulses, oil crops, fruits and vegetables (Ha)	Y	200,000					
	DLI 4 – Adoption of improved and efficient irrigation technologies by farmers	DLR 4.1 – Policy/Regulatory framework & strategic plan developed	N	Yes	55	59.73	BADC	DAE, BMDA, BARI, BRRI	3
		DLR 4.2 – New area under efficient irrigation technologies (Ha)	Y	100,000					
RA 2	DLI 5 – Expansion of digital agricultural service provision through KSC	DLR 5.1 – Policy/Regulatory framework developed	N	Yes	65	70.59	DAE	DAM, BADC, BARC	4
		DLR 5.2 – Digital extension services delivered and e-voucher pilot for new input subsidy mechanism implemented (Number of Upazillas)	Y	495 for digital extension; 15 for e-voucher pilot					
		DLR 5.3 – Farmers receiving services (extension support, input subsidy support, and credit support) through KSC	Y	5,000,000					
	DLI 6 – Promotion of the accreditation of seed certification and food safety testing processes	DLR 6.1 – Laboratories established (including refurbished/upgraded) with adequate HR and equipment	Y	10	32	34.75	DAE	DAM, BARI, BARC, BADC, BRRI	4
		DLR 6.2 – Accredited testing processes for agricultural commodities in testing labs	Y	20					
RA 3	DLI 7 – Promotion of agri-food entrepreneurship for youth and women	DLR 7.1 – Partnerships with businesses for on-the-job training and PARTNER award mechanism established	Y	30	39	42.35	DAM	DAE, BADC, BARC	3
		DLR 7.2 – Youth and women entrepreneurs trained (including on-the-job training) in commercial agriculture, agribusinesses, new agricultural innovations, and agricultural services	Y	20,000					
	DLI 8 – Increase of R&D activities for new technologies and innovations along with development of an operational evaluation system for NARS institutes and extension services	DLR 8.1 – Increase in R&D budget for NARS institutes (Percent)	Y	161	92	99.91	BARC	BADC, BARI, BRRI, DAE, DAM	4
		DLR 8.2 – MoUs/agreements on research collaboration with research labs and on scaling up NARS's research outcomes with MoA agencies and the private sector	Y	25					
RA 3	DLI 9 – Establishment and operationalization of VC promotional bodies for select commodities	DLR 9.1 – Policy and regulatory framework developed and adopted by MoA	N	Yes	28	30.41	DAM	DAE, BARC	4
		DLR 9.2 – VC-specific promotional bodies for at least five commodities established and operational	Y	5					
	DLI 10 – Improvement of quality information system (agricultural statistics and market research services incl. foreign markets)	DLR 10.1 – Upazilas with staff equipped in high quality data collection capacity	Y	495	23	24.98	DAE	DAM, BADC, BARC	4
		DLR 10.2 – Biannual Agricultural Policy Notes (including market forecasts) prepared and published	N	Yes					



III. PROGRAM IMPLEMENTATION

A. Institutional and Implementation Arrangements

36. **The Program will use GoB's systems for implementation, oversight, financial management (FM), procurement, safeguards, M&E, and reporting arrangements.** The Program Steering Committee (PSC), the coordination units (i.e., Program Coordination Unit – PCU and Agency Program Coordination Units – APCU), and DLI Technical Teams (DTT) involved in the implementation and monitoring of PARTNER will be composed almost solely of staff of the seven IAs (i.e., BADC, Bangladesh Agricultural Research Council – BARC, Bangladesh Agricultural Research Institute – BARI, BMRA, Bangladesh Rice Research Institute – BRRI, DAE, and the Department of Agricultural Marketing – DAM) who will be asked to contribute on top of their current responsibilities.

37. **A PSC**, headed by the Secretary of MoA, composed of Heads of the IAs (Director General, Executive Chairman and Chairman, as appropriate), will provide overall strategic guidance, approve annual budget and activity plans, monitor overall implementation progress, facilitate inter-agency coordination for smooth Program implementation, and resolve issues requiring higher-level decisions.

38. **A Project Implementation Committee (PIC)** headed by the Additional Secretary (Policy Planning and Coordination Wing) of MoA will consist of technical leads from the seven IAs. It will be responsible for overseeing the technical functions under the Program, including reviewing and integrating work plans and budgets and ensuring coordination between the IAs.

39. **The PCU hosted at DAE will be responsible for oversight of Program activities implementation, Program management functions, coordination facilitation among IAs, and liaison with the WB on all Program implementation aspects.** Each of the seven IAs will be responsible for implementing activities for specific DLIs. The PCU will be led by a Program Coordinator and will comprise seven Agency Program Directors (APD) from each APCU, as well as other relevant PCU staff, including staff in charge of providing capacity building and technical support to APCUs on Safeguards, Fiduciary, and M&E. DAE is the largest of the seven IAs and has a presence in all Upazilas countrywide. Through its mission of extension services delivery, DAE accompanies farmers in the adoption of newly released technologies and shares farmers' feedback to the other IAs. Under the Program, DAE will lead four DLIs and contribute to the remaining six. As a result, DAE will have a member in each DTT, which will allow for better coordination with all APCUs.

40. **APCUs will be established in each of the seven IAs.** Each APCU will include an APD, as well as two categories of staff: (i) those contributing towards DLIs allocated to the IA; and (ii) staff supporting other IAs in completing their respective DLIs. APCUs' objectives are to monitor the coordination for completion of their allocated DLIs, oversee the functions of the DTTs, and facilitate support to contributing IAs.

41. **A DTT will be established for each DLI housed at the IA to which the DLI is allocated.** The DTT will be a cross-implementation team that will be headed by a DLI Technical Head from the lead IA and will include members from both the lead IA and contributing IAs. The DTT will be responsible for carrying out and monitoring activities for completion of allocated DLIs. It will report to the APCU of the lead IA. For instance, the DTT established for completion of DLI1 will comprise a Technical Head from DAE – which is the lead IA for DLI1 – as well as members of APCUs of contributing IAs and will report to the DAE APCU.



42. **DAE** is the largest agricultural and technology extension service provider in Bangladesh. Considering its experience and capacity in coordinating work across IAs to deliver projects, it has been selected to host the PCU. In addition, DAE will be responsible for delivering four DLIs: (i) DLI1: Development, rollout, and adoption of GAP standards in fruit and vegetable production; (ii) DLI5: Expansion of digital agricultural service provision through KSC; (iii) DLI6: Promotion of the accreditation of seed certification and FS testing processes; and (iv) DLI10: Improvement of quality information system (agricultural statistics and market research services incl. foreign markets).

43. **DAM** is responsible for agricultural marketing systems and agribusiness development in Bangladesh. The DAM APCU will be responsible for delivering: (i) DLI7: Promotion of agri-food entrepreneurship for youth and women; and (ii) DLI9: Establishment and operationalization of VC promotional bodies for select commodities.

44. **BARI** is the largest multi-crop research institute in Bangladesh. The BARI APCU will be responsible for delivering DLI3: Crop diversification towards non-rice cereals, pulses, oilseeds, and horticulture crops. Significant capacity building support will be provided to BARI to implement and monitor DLI3.

45. **BRRI** is involved in the development of rice-based technologies for sustainable food security. The BRRI APCU will be responsible for delivering DLI2: Development and adoption of high yielding rice varieties. Significant capacity building support will also be provided to BRRI.

46. **BARC** is the apex body of the NARS in Bangladesh. The BARC APCU will be responsible for delivering DLI8: Increase of R&D activities for new technologies and innovations along with development of an operational evaluation system for NARS institutes and extension services. Significant capacity building support will also be offered to BARC.

47. **BADC** is responsible for making suitable arrangements for the production, procurement, transport, storage, and distribution of essential agricultural inputs. The BADC APCU will be responsible for delivering DLI4: Adoption of improved and efficient irrigation technologies by farmers. Significant capacity building support will be provided, notably to overcome its limited manpower at Upazila and block levels.

48. **BMDA's operations and management are localized in the northwestern region in the country.** The Planning Wing of BMDA will be responsible for supporting BADC in delivering DLI4.

B. Results M&E

49. **PARTNER will be the first PforR in the agriculture and food sector in Bangladesh, which will require significant support to strengthen M&E capacity.** Multiple entities will contribute to M&E under the leadership of the PCU. The PCU will be responsible for (i) coordinating M&E activities of IAs at the Program level; (ii) developing and implementing the Program-level M&E plan; (iii) consolidating M&E information; (iv) monitoring, reporting, and evaluating Program results; (v) reviewing the M&E plan of each DLI prepared by lead IAs, controlling quality, and keeping consistency in M&E among activities; and (vi) identifying any capacity and data gaps to implement M&E plans and developing an action plan together with lead IAs. Key results of the Program and progress towards results indicators, including DLIs, will be regularly measured and reported to the WB. The PCU will be aided by PARTNER-supported information systems.



50. **The results indicators tracked in the Results Framework have been included to capture the progress made in terms of inputs, outputs, and outcomes towards the achievement of the DLRs and DLIs.** The lead IA for each indicator and each DLR/DLI will be responsible for M&E on Program activities and will report to the PCU. All IAs will prepare an M&E plan for their relevant result indicator(s) and DLR(s)/DLI(s) that will be used for monitoring progress against the agreed timeline. The M&E plan will also specify the unit of measurement, baseline values, targets, monitoring frequency, data sources, methodology for data collection, and responsibilities for data collection and reporting for each indicator. All IAs have planning units in charge of M&E. These planning units will be further staffed, trained, and equipped during PforR implementation. Should new data be required to be collected for the Program, IAs will develop a protocol for data collection. Based on the data, all IAs will prepare monthly, quarterly, and semi-annual Implementation M&E Reports and submit them to the PCU.

C. Disbursement Arrangements

51. **The achievement of the DLIs/DLRs will be used for disbursement.** The list of DLIs and DLRs and the proposed annual financial allocations across DLIs/DLRs are presented in Annex 2 and Table 3 above. There are 24 DLRs spread over five years. Most DLIs include policy and regulatory reforms that will help achieve results. Scalability would be as per the disbursement rules provided in the Financing Agreement and there would be no scalability below the targets included in the disbursement rules.

52. **IFAD will provide additional resources for achieving Program results.** These resources will be provided on a prorated basis across the Program. Their disbursement will follow the achievement and verification of the same targets for each DLR. 7.92 percent of each disbursement amount will be drawn from IFAD resources until the cumulative amount disbursed from these resources reaches US\$43 million.

53. **Disbursements will be contingent upon the GoB furnishing satisfactory evidence to IDA that it has achieved specific DLRs and that this has been verified by the IVA.** Applications of withdrawal from the WB and IFAD financing will be sent to IDA any time after the WB has notified the GoB in writing that it has accepted evidence of DLR achievement. The WB will review each withdrawal application and advise IFAD to make the necessary payment, if any.⁴¹ The withdrawal amount against an achieved DLR will not exceed the financing amount confirmed for the specific DLR. All withdrawals from the credit account will be made into a consolidated fund account in Bangladesh Taka (BDT) maintained at the Bangladesh Bank.

54. **The Program will provide an advance of up to US\$135.75 million equivalent** (of which US\$125 million from IDA and US\$10.75 million from IFAD), which explains the relatively high level of expected disbursements in Year 1 of implementation compared to subsequent years. The advance will be adjusted against disbursements due when the DLRs are achieved or in the later years of the Program. Advance amounts recovered would then become available for additional advances. If DLRs are not achieved, refund of the advance is required in accordance with the provisions of the Financing Agreement.

55. **Details of the agreed disbursement rules for each DLR are provided in Annex 2.** Some DLRs are scalable, with funds being disbursed in proportion of achievement of the DLR. Some DLRs have a roll-over

⁴¹ The International Bank for Reconstruction and Development, IDA and IFAD have entered into the Cooperation Agreement dated 20 May 1978, and the Guidelines for Partnership dated 15 June 1999. Additionally, IDA and IFAD propose to enter into a Letter of Appointment establishing their relationship in respect of PARTNER, including setting out the disbursement services to be provided by IDA. The Letter of Appointment is currently being drafted.



provision with specified deadlines. The corresponding WB financing against a given DLR may be disbursed before the deadline for a yearly target if the target is achieved before the deadline as provided in the Financing Agreement and if the DLR is not time-bound.

56. **Verification protocols for each DLR are detailed in Annex 2.** An IVA commissioned by DAE will verify DLRs and submit evidence to the WB as part of the supporting documentation to report achieved results. The WB will also review the evidence for all DLRs during implementation. While the primary objective of the verification exercise is to determine if the DLRs have been met, the process will also be designed to understand why DLRs are not being met and provide valuable feedback for course-correction.

D. Capacity Building

57. **Although IAs have previous experience in project implementation, they lack trained staff to deliver results-based programs.** Support will be provided to enhance not only their technical skills but also their coordination, collaboration, and monitoring capabilities. Significant investments have been planned in the expenditure framework accordingly with over 22 percent of expenditures set aside for trainings and professional services. Planned capacity building support will include (i) developing an improved MIS using technologies such as the Geographic Information System and dashboard displays to track the DLI cycle and management processes (procurement, costs, and so on); (ii) training on monitoring participatory planning and implementation, as well as gender and socially inclusive processes; (iii) designing and implementing “performance incentives/rewards” to enhance active engagement, accountability, and coordination among stakeholders; (iv) organizing public-private sector dialogue to build awareness within the public sector about the concerns and constraints faced by the PS; (v) strengthening M&E capacity to cater to the demands of a results-centered approach to agricultural development, including (a) training for analytical skills and ICT, (b) developing or improving digital monitoring platforms, and (c) enhancing institutional arrangements such as forming an independent unit for M&E and securing adequate staffing and logistical support; (vi) training and equipping public and private extension agents at all levels on CSA, GAP, IPM, and input use efficiency; (vii) training the public and private sectors on seed quality and seed market surveillance; (viii) equipping laboratories, training staff, and providing other infrastructure for BARC, BRRI, and BARI to enhance research capability; and (ix) training DAM and BMDA and facilitating improvements in real-time data collection.

IV. ASSESSMENT SUMMARY

A. Technical (including program economic evaluation)

Strategic relevance

58. **PARTNER will support the objectives of the NAP and its PoA,** which prioritize diversification (while maintaining food security), commercialization, and mechanization as specific goals to transform the sector towards a more productive, profitable, and sustainable agricultural system. In line with the GoB’s strategic priorities for agriculture, PARTNER supports crop diversification and modernization, including CSA for a more climate resilient and market-oriented food system. The Program responds to Bangladesh’s broader policy goals and will contribute to crowding in the PS along the agri-food VC.



Technical soundness

59. **PARTNER's overall framework rests on a solid technical basis.** The Program reflects the findings and recommendations of the analytical work and sectoral diagnostics carried out by the WB in recent years⁴² and builds on experience and lessons learned from on-going and past agricultural projects in Bangladesh (e.g., NATP-2, Integrated Agricultural Productivity Project (IAPP), Agriculture, Nutrition, and Gender Linkages Project (ANGeL) and in the region supported by the WB and other partners. Overall, these assessments and experience highlight the importance of a sectoral transformation approach with a focus on productivity improvement, VC strengthening, and enhancing FS, while ensuring climate resilience of the sector. Interventions under the proposed Program consist of scaling up activities familiar to the MoA and its agencies, which have acquired extensive experience in developing and implementing sectoral policies, strategies, and action plans, in working with key stakeholders, including farmers, agribusinesses, and in strengthening public institutions serving the agriculture sector.

60. **The technical soundness of PARTNER has been assessed for each RA against relevant experience and good practices.** As extensively documented in the 2008 World Development Report,⁴³ investments in technology and extension, rural infrastructure, and human capital, coupled with policy and institutional changes, are the main sources of productivity growth. PARTNER will intervene in all these aspects while ensuring, through the promotion of CSA practices, that environmental costs are not only avoided but that the Program also contributes to climate change mitigation.

61. **Regarding crop diversification, market and agronomic conditions are favorable but some constraints persist,** which the Program will address by increasing the availability of high-quality fruit and vegetable seeds, promoting GAP practices, promoting the adoption of FS quality standards, increasing farmers' access to digital services, and supporting the establishment and operation of VC-specific promotional bodies. PARTNER will also seek to increase entrepreneurship of women and youth. Women and youth will be trained in high-value agriculture, agribusiness, and services, and women self-help groups will be promoted and strengthened to increase their access to training, services, credit, and markets.

62. **The Program will contribute not only to increased agricultural productivity but also to poverty reduction.** Empirical evidence and research show that modernizing institutions and policies for agriculture transformation, with an emphasis on R&D, can greatly contribute to agricultural productivity increases.^{44,45} Furthermore, investments that are targeted at productivity-enhancing and emissions-reducing technologies have the greatest potential for reducing poverty through income increases, lowering the cost of healthy diets, and reducing the amount of land needed for agriculture.⁴⁶

⁴² These include *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities, 2020; Climate Smart Agriculture Investment Plan, 2020; Bangladesh Rural Income Diagnostic Study, 2021; and Dynamics of Rural Growth in Bangladesh Study, 2016.*

⁴³ <https://openknowledge.worldbank.org/handle/10986/5990>

⁴⁴ The World Bank. 2007. Agriculture for Development. *World Development Report 2008*.

⁴⁵ Peter B.R. Hazell. 2008. An Assessment of the Impact of Agricultural Research in South Asia since the Green Revolution. Science Council CGIAR.

⁴⁶ Madhur Gautam, et.al. 2022. Repurposing Agricultural Policies and Support. The World Bank / IFPRI.

***Expenditure framework***

63. **PARTNER is backed by an adequate government expenditure framework and the size of the MoA's expenditures is well above the size of the PARTNER Program.** In the last five FYs, the MoA was allocated BDT 831.3 billion (i.e., around 3 percent of the total national budget). Based on the medium-term budgetary framework and projection exercise, the MoA will be allocated BDT 954 billion in the upcoming five FYs when PARTNER will be implemented. Total allocation for the seven IAs' expenditures was BDT 256.1 billion in the last five years, while projections for the next five years amount to BDT 326.6 billion. PARTNER's expenditure increase (i.e., BDT 67.3 billion, which is equivalent to US\$673 million) is only 7.1 percent and 20.6 percent of projected allocations of the MoA and IAs, respectively. This indicates a consistent and sustainable flow of funds to the IAs to carry out the activities throughout the Program.

64. **Considering the Program's intended results, the composition of the estimated expenditures is well justified.** The expenditure boundaries include all expenditure inputs needed to achieve Program results. The Program's estimated capital expenditures (i.e., goods and works) amount to US\$628.8 million, representing 46.8 percent of total expenditures, and operating expenditures amount to US\$714 million, representing 53.2 percent of total expenditures. According to the estimated expenditures by topline budget lines, machinery and equipment represent 15.4 percent, buildings other than dwellings represent 14.8 percent,⁴⁷ training (local and foreign) represents 12.4 percent, professional services represent 9.8 percent, agriculture supplies represent 8.5 percent, and administrative expenses represent 5 percent, amongst others. All the expenditure lines lie within current expenditure lines of the MoA. Thus, no expenditure line changes or additions will be required.

65. **The flow of expenditures to the sector under the medium-term budgetary framework (MTBF) will continue even after PARTNER, which will ensure the financial sustainability of the government program.** Historically, the budget of the MoA has followed an upward trend. In FY 2009-10, the total budget was BDT 60 billion, which increased to BDT 137 billion in FY 2016-17 and BDT 242 billion in FY 2022-23. The total public expenditures for the agriculture sector are determined by the MTBF and are sourced from both development partners and the GoB's own resources. Investment for PARTNER are well embedded in the MTBF. Past trends also suggest that successive MTBFs maintained priority in agricultural investments. Increasing investment levels for the sector is well prioritized in the ongoing eighth FYP and the Perspective Plan of Bangladesh 2021-2041.

Economic rationale

66. **The Program is a net carbon sink compared to the without project scenario of -59.2 million tCO₂e emissions over 20 years, and about -2.96 million tCO₂e emissions per year.** However, gross emissions are positive, and the Program would emit 126.3 million tCO₂e over 20 years.

67. **According to the *ex-ante* economic analysis, PARTNER yields an Economic Internal Rate of Return (EIRR) of 33 percent and an Economic Net Present Value (ENPV) of US\$1.902 billion** (using a 15 percent discount rate). The sensitivity analyses conducted to assess the impact of changes in key parameters such as international prices of rice, non-rice crops, and fertilizers, and technology adoption rates show that the Program would produce net economic benefits under such scenarios (Table 4).

⁴⁷ This will encompass refurbishing / improving existing structures, especially for R&D and extension, with the exception of a few new buildings for laboratories.



68. According to a social accounting matrix (SAM) simulation, PARTNER's incremental investment will increase Bangladesh's GDP by 0.31 per cent. The SAM multiplier model provides that the economy will be boosted by BDT 105.8 billion of additional GDP,⁴⁸ which is 0.31 percent of the FY 2020-21 GDP, while PARTNER's investment is 0.2 percent of GDP.⁴⁹

Table 4. PARTNER's EIRR and ENPV under various scenarios

	EIRR (percentage)	ENPV (US\$ billion)
Baseline	33	1.902
10 percent discount rate	33	3.280
With GHG valuation at low shadow prices	39	2.697
With GHG valuation at high shadow prices	47	3.594
50 percent decline in adoption rates	19	0.333
20 percent decline in international output prices & 20 percent increase in international price of fertilizers	24	0.897

B. Fiduciary

69. The FM and procurement assessments for PARTNER have been prepared to appraise the extent to which procurement practices, planning, budgeting, accounting, controls, funds flow, financial reporting and auditing systems, and practices provide reasonable assurance on the appropriate use of funds and safeguarding of assets within the existing fiduciary framework of the country. In addition, the assessment considered how the country's governance systems manage the risks of fraud and corruption and how such risks will be mitigated. The assessment also synthesized consultations held with key stakeholders on core fiduciary issues and challenges that might have a bearing on the Program.

70. **Anticorruption Guidelines (ACG):** The GoB will use its own country systems to take appropriate measures to prevent fraud and corruption connected with the Program and to remedy or prevent its recurrence. The Program will handle fraud and corruption complaints by (i) receiving complaints from concerned citizens through complaint boxes at the MoA and through a web-based portal managed by the MoA; (ii) providing guidance to citizens or Program officials on grievance handling through a dedicated helpline at the MoA; and (iii) using MoA's existing Grievance Redress and Complaints-Handling Guidelines, which have clear complaint handling procedures. Complaints can also be lodged through the Anti-Corruption Commission's hotline number and Anti-Corruption Commission's field level complaint box system. The WB's Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing, dated February 1, 2012, and revised on July 10, 2015, will apply to the PforR boundary. The GoB will use the WB's procurement debarment list before awarding contracts and share information on allegations of fraud and corruption and how they are being addressed through annual reports.

71. **Based on the Integrated Fiduciary Systems Assessment (IFSA), the Program Fiduciary Systems are adequate.** However, there are several gaps and weaknesses in the country system and Program IAs that could affect the achievement of Program objectives, such as the lack of technical preparation before

⁴⁸ The additional GDP will be created by multiple rounds of feedback effects over several years, including five years of implementation.

⁴⁹ More details about the ex-ante economic analysis and the SAM simulation are provided in Annex 3.



the procurement process; lack of established procurement units; lack of overall supervision and coordination; lack of capacity of decentralized IAs; weak enforcement of procurement legislation and lack of oversight; weak system of registration and handling of complaints; provisions of the country laws that are not consistent with basic public procurement principles; lack of proficiency in procurement management, particularly in bid/proposal evaluation; delay in procurement processes; inappropriate bidding practices by the bidders; time and cost over-runs during contract implementation; lack of strategic procurement planning; limited experience and lack of awareness of bidders of bidding opportunities in PARTNER; delays in preparing program financial statements; capacity constraint in auditing of result-based financing; delays in resolution of audit observations; delays in releasing annual budgets; delays in preparing consolidated program financial statements; Integrated Budget and Accounting System (iBAS) mapping of incremental eligible Program expenditure under the iBAS Program code and Program expenditure reconciliation by IAs; lack of FM professional resources; weak internal audit capacity, and so on.

72. **Based on the assessment and due consultation with the IAs and other stakeholders, a Program Action Plan (PAP) focusing on both risk mitigation and capacity building was agreed (Annex 6).** Mitigation measures include (i) preparing IA-wise fund flow planning as per the Annual Work Plan schedule and ensuring that budget is allocated and released to off-treasury entities as per implementation plan; (ii) mainstreaming iBAS for recording and reporting Program expenditure for all IAs, and preparation of Program financial statements; (iii) ensuring on-granting arrangement with the off-treasury IAs (i.e., BADC, BARC, BARI, BMDA, BRRI) for the downstream fund flow preferably through iBAS and release to ensure funding is available on time at the spending center; (iv) developing and implementing an internal audit modernization plan for BADC, BRRI, BARI and BMDA that includes issuance of a Model Internal Audit Charter and risk-based internal audit manual; and (v) certifying training on FM and procurement for staff in all IAs through at least one-week formal training and also deploying on full-time basis an adequate number of own qualified staff having prior experience in government procurement and FM.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

73. **Operational Policy 7.50 applies to this Program because some of its activities are likely to involve the use of water from international waterways.** The Program activities are limited to the upgrading and modernization of existing irrigation schemes whose impacts would be minimal on the quantity and quality of water in international waterways and that would also not be adversely affected by other riparians' possible water use. The exception to the notification requirement according to paragraph 7 (a) of the Policy was approved by the Regional Vice President on January 6, 2023.

D. Environmental and Social

74. **The Environmental and Social Systems Assessment (ESSA) provides a comprehensive review of relevant government systems and procedures for addressing environmental and social (E&S) issues**



associated with the Program. The ESSA describes the extent to which the government's E&S policies, legislation, program procedures, and institutional systems are consistent with the six 'core principles' of the WB Guidance⁵⁰ on E&S management in PforR operations. The assessment recommends actions to address the gaps and enhance performance during Program implementation.

75. **The ESSA has identified potential risks and opportunities and assessed the compatibility of the Program with respect to the core principles.** MoA has considerable experience in executing WB-financed projects, with demonstrated capacity in managing E&S risk for similar activities. The Program will exclude any activity that may have significant adverse E&S impacts and are sensitive, diverse, or unprecedented.

76. **Overall E&S risks are assessed to be 'Moderate'.** Program activities have no significant and irreversible impacts on environment and the associated risk is rated as 'Moderate'. The construction of infrastructure would be limited to renovation, repair, and modernization of various facilities within complexes housing the IAs, where limited number of labor force would be employed. As such, effects would be localized and could be mitigated in situ by the contractors employed. There will be no land acquisition and involuntary resettlements. The findings of the ESSA also show that social discrimination, gender-based violence (GBV), sexual exploitation and abuse (SEA) and sexual harassment (SH) risks are low. Thus, the social risk is also rated as 'Moderate'. An E&S screening was carried out to identify E&S risks and impacts with respect to contextual, institutional, capacity, and reputational risks.

77. Potential investments may include small- and medium-scale civil and construction works, use of digital technology, pest management using naturally tolerable pesticides/herbicides for HYV and other crop diversification efforts, promoting improved and efficient irrigation facilities, establishment of "Technology Villages", testing laboratories, training, research, market linkage, youth engagement, and piloting motivational incentives. The anticipated E&S impacts are mostly localized and reversible and can be mitigated through proportionate management and mitigation measures. The Program Implementation Plan (PIP) will be developed at the start of the Program and followed also for E&S risks management requirements and procedures (E&S Guidelines). A subsequent E&S management framework (ESMF) including Environmental Code of Practice (ECoP) and social management procedures will be developed at early stage of implementation. The PIP will be updated when the Program ESMF will be adapted.

78. **The IAs manage E&S impacts following the national regulatory framework and policies in the regular operations, as well as in government-financed projects.** For internationally financed projects, they develop and implement project-specific E&S management plans (ESMPs) following the E&S compliance requirements of international finance institutions to supplement the gaps of the national E&S Management System (ESMS). The involvement of multiple IAs including research organizations with low capacity to manage E&S risks would be addressed in the PAP.

79. **Overall, the ESSA found that the country's E&S policies and legal framework applicable in agriculture sector are largely compatible with the E&S core principles for WB PforR financing.** However, the ESSA recommends several measures under the Program to address institutional capacity constraints and gaps within the IAs across a range of the ESMS's limitations including policy principles and institutional setup. These measures are summarized as E&S actions incorporated in the PAP (see Annex 6). In addition,

⁵⁰ World Bank Guidance on Program for Results Financing Environmental and Social Systems Assessment (Annex-C)



a more detailed description of the main E&S issues and recommended actions to strengthen E&S systems' performance for the Program are presented in Annex 5.

80. **Citizen Engagement.** The Program has a robust citizen engagement strategy that includes (i) participatory planning, decision making, and implementation for Program activities; (ii) beneficiary feedback mechanisms (e.g., satisfaction surveys) to ensure that beneficiaries are satisfied with Program services; and (iii) development of a grievance redress mechanism (GRM) to respond to the needs of beneficiaries and to address and resolve their grievances and serve as a conduit for soliciting inquiries, inviting suggestions, and increasing community participation. The Program also includes a beneficiary feedback indicator measuring percentage of beneficiaries satisfied with services provided.

81. **WB's Grievance Redress Service (GRS).** Communities and individuals who believe that they are adversely affected as a result of a Bank supported PforR operation, as defined by the applicable policy and procedures, may submit complaints to the existing program GRM or the WB's GRS. The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the WB's corporate GRS, please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the WB Inspection Panel, please visit <http://www.inspectionpanel.org>.

E. Gender

82. **Despite their large representation in the agriculture sector, women are concentrated in the low-income activities along the agri-food VC.** Similar to wider trends on women's entrepreneurship, a small share of women is involved in agribusiness compared to men. The share of agribusinesses owned by women is just below two percent. Priority barriers for women are their access to information and technical knowledge, finance, and markets. Activities to achieve DL17 under the Program's RA2 will address such barriers through (i) technical training on commercial agriculture, agribusinesses, and agricultural innovations; (ii) linkages with VC partnerships for on-the-job training (OTJ); and (iii) provision of startup financial support through partnerships with financial institutions enabling women to be employed or self-employed and to increase their income. Financial institutions will be provided with orientation on gender considerations needed to ensure women entrepreneurs have equal access to credit. In addition, activities under DL15 of RA2 will also help increase women's access to services such as extension, finance, and market access through the KSC.

V. RISK

83. **The overall risk of the project is rated 'Substantial'.** The main risks and mitigation measures are described below.

84. **Macroeconomic risks (Substantial).** The BoP deficit and CAD increased in FY22. Real GDP growth is expected to slow to 5.2 percent and a financial account deficit is projected to contribute to external sector pressure in FY23. Structural reforms are needed to generate jobs and employment opportunities



by creating a competitive business environment, diversifying exports, increasing human capital, building efficient infrastructure, deepening the financial sector, establishing a policy environment that attracts private investment, and implementing coordinated policies and investments to address rising climate vulnerabilities.

85. **Institutional Capacity for Implementation and Sustainability (Substantial).** The substantial risk refers to the challenges in coordinating various line agencies under the MoA and their capacity to implement the respective programs and achieve intended results. Mitigation of the coordination challenge is achieved through the proposed institutional framework that combines a PCU housed at DAE – which has experience in coordinating activities across agencies – and APCUs in each of the seven IAs with clear responsibilities for each regarding their leadership over the delivery of specific DLIs and their need to facilitate inputs from contributing IAs. The institutional capacity assessment carried out during preparation also identified associated capacity building needs for both the MoA and the seven IAs.

86. **Technical Design of Program (Substantial).** The Program is designed to implement key elements of the GoB's strategy for agriculture development in Bangladesh. Thus, the design is not only comprehensive and supports the country's agricultural production system and its VCs, but it also fits the country's diversified and challenging context. However, PforRs are new to the client ministry. As a result, significant support has been provided to the MoA to improve its knowledge of this lending instrument and the technical capacity needs assessment carried out during Program preparation indicated the need to provide further technical assistance to MoA and the seven IAs during the first years of implementation to mitigate technical design risks linked to their adaption to a performance-based operation.

87. **Fiduciary (Substantial).** The substantial fiduciary risk stems from the FM and procurement gaps and weaknesses in the country system and IAs identified in the IFSA and described in the fiduciary section. A PAP focusing both on fiduciary risk mitigation, as well capacity building, was agreed with IAs (Annex 6). The implementation progress of the PAP will be reviewed periodically during Program implementation.



The World Bank

Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh(PARTNER) (P176374)

ANNEX 1. RESULTS FRAMEWORK MATRIX

Results Framework

COUNTRY: Bangladesh

Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh(PARTNER)

Program Development Objective(s)

The Program Development Objective (PDO) is to promote diversification, food safety, entrepreneurship, and climate resilience in the agri-food systems of Bangladesh.

Program Development Objective Indicators by Objectives/Outcomes

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Increased Crop Diversification							
Increased area under non-rice cereals, pulses, oilseeds, and horticulture crops (Hectare(Ha))	DLI 3	0.00	20,000.00	50,000.00	90,000.00	140,000.00	200,000.00
Improved Food Safety							
Increased area under fruits and vegetables with GAP certification (Hectare(Ha))	DLI 1	0.00	0.00	0.00	75,000.00	150,000.00	300,000.00



The World Bank

Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh(PARTNER) (P176374)

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Increased Entrepreneurship							
Women and youth trained under the Program achieving at least a 30 percent income increase (Number)		0.00	0.00	1,800.00	4,800.00	8,400.00	12,000.00
Share of which women (Percentage)		0.00	0.00	60.00	60.00	60.00	60.00
Improved Climate Resilience							
Increased area under resilience-building, efficient irrigation technologies (Hectare(Ha))	DLI 4	0.00	0.00	0.00	20,000.00	50,000.00	100,000.00
Increased area under sprinkler irrigation (Hectare(Ha))		0.00	0.00	0.00	100.00	250.00	500.00
Increased area under drip irrigation (Hectare(Ha))		0.00	0.00	0.00	100.00	250.00	500.00
Increased area under buried pipe and AWD (Hectare(Ha))		0.00	0.00	0.00	19,800.00	49,500.00	99,000.00



Intermediate Results Indicator by Results Areas

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Promoting sustainable and nutritious food production							
GAP standards and protocols for fruits and vegetables developed and approved by MoA (Number)		0.00	6.00	15.00	15.00	15.00	15.00
Farmers and certification staff trained in GAP certification (Number)		0.00	100,500.00	301,000.00	601,500.00	1,001,500.00	1,001,500.00
Share of which women (Percentage)		0.00	40.00	40.00	40.00	40.00	40.00
Increased area under high-yielding rice varieties (Hectare(Ha))	DLI 2	0.00	40,000.00	80,000.00	120,000.00	160,000.00	200,000.00
Stress-tolerant and nutrient-dense rice varieties generated (Number)		0.00	0.00	1.00	2.00	3.00	5.00
Certified rice seeds produced and marketed through the network (Tons/year)		0.00	0.00	1,000.00	2,000.00	3,500.00	5,000.00
Stress-tolerant and nutrient-dense non-rice varieties generated (Number)		0.00	0.00	3.00	7.00	11.00	15.00
Certified non-rice seeds		0.00	0.00	1,000.00	2,000.00	3,500.00	5,000.00



Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
produced and marketed through the networks (Tons/year)							
Farmers adopting improved agricultural technology (CRI, Number)		0.00	0.00	100,000.00	300,000.00	600,000.00	1,000,000.00
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	0.00	30,000.00	90,000.00	180,000.00	300,000.00
Increasing entrepreneurship and access to services along the value-chains							
Extension staff trained in e-extension service delivery and digital M&E tools (Number)		0.00	30.00	180.00	780.00	1,500.00	1,500.00
Share of which women (Percentage)		0.00	30.00	30.00	30.00	30.00	30.00
Farmers receiving services through KSC (Number)	DLI 5	0.00	0.00	500,000.00	1,500,000.00	3,000,000.00	5,000,000.00
Share of which women (Percentage)		0.00	40.00	40.00	40.00	40.00	40.00
E-voucher pilot for new input subsidy mechanism implemented in targeted Upazilas (Number)		0.00	0.00	0.00	7.00	15.00	15.00
Institutions providing financial services to at least 5,000 farmers (Number)		0.00	0.00	2.00	6.00	12.00	20.00
Laboratories receiving		0.00	0.00	0.00	2.00	5.00	10.00



Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
accreditation for a testing process (Number)							
Testing processes for agricultural commodities accredited (Number)	DLI 6	0.00	0.00	0.00	4.00	10.00	20.00
MoUs with businesses and financial institutions for OJT and financial support (Number)		0.00	0.00	10.00	20.00	30.00	30.00
Women and youth trained under the Program (Number)	DLI 7	0.00	0.00	3,000.00	8,000.00	14,000.00	20,000.00
Share of which women (Percentage)		0.00	60.00	60.00	60.00	60.00	60.00
Modernizing institutions and policies for agriculture transformation							
Increase in R&D budget for NARS Institutes (Percentage)	DLI 8	100.00	110.00	121.00	133.00	146.00	161.00
MoUs and agreements on research collaboration with international research labs and the PS (Number)		0.00	0.00	5.00	10.00	15.00	25.00
Promotional bodies for select commodities established and operational (Number)	DLI 9	0.00	0.00	0.00	2.00	5.00	5.00
Stakeholders' organizations of selected VCs strengthened with institutional capacity building support (Number)		0.00	0.00	0.00	200.00	500.00	500.00
Upazilas with staff equipped in		0.00	0.00	100.00	300.00	495.00	495.00



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Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
high quality data collection capacity (Number)							
Agricultural Annual Performance Report prepared and published (Yes/No)	No	No	Yes	Yes	Yes	Yes	Yes
Biannual Agricultural Policy Notes prepared and published (Yes/No)	No	No	Yes	Yes	Yes	Yes	Yes
Share of beneficiaries who received support from the Program who are satisfied (Percentage)	0.00	60.00	60.00	70.00	75.00	80.00	



Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Increased area under non-rice cereals, pulses, oilseeds, and horticulture crops	Measures diversification away from rice towards high-value crops by measuring the increased area under non-rice crops (relates to DLI3)	Annually	DAE, BARI, DAM	Annual crop survey by M&E teams at DAE, BARI, and DAM	BARI
Increased area under fruits and vegetables with GAP certification	Area under fruit and vegetable cultivation that receives GAP certification by DAE, based on annual audits (not cumulative) (relates to DLI1)	Annually	DAE	Document review and Annual Survey	DAE
Women and youth trained under the Program achieving at least a 30 percent income increase	Women and youth (<35 years) who received entrepreneurship training (including OJT) in commercial agriculture, agribusiness, agricultural innovations, and agricultural services under the Program and achieved an income increase of at least 30 percent from employment or self-employment on- and off-farm (relates to DLI7)	Annually	DAM, DAE	Annual Survey and Document Review; Pre and post-training income assessment controlled for inflation	DAM



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Share of which women						
Increased area under resilience-building, efficient irrigation technologies	Increased area under resilience-building efficient on-farm irrigation technologies promoted by the Program, including sprinkler, drip irrigation, and a combination of buried pipe & AWD. This indicator will contribute to climate change adaptation (i.e., sprinkler and drip irrigation will result in water conservation in drought-vulnerable areas) and mitigation (i.e., AWD will reduce methane emissions) (related to DLI4)	Annual	BADC	Process monitoring and Annual survey	BADC	
Increased area under sprinkler irrigation		Annual	BADC	Process monitoring and Annual survey	BADC	
Increased area under drip irrigation		Annual	BADC	Process monitoring and Annual survey	BADC	
Increased area under buried pipe and AWD		Annual	BADC	Process monitoring and Annual survey	BADC	



Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
GAP standards and protocols for fruits and vegetables developed and approved by MoA	Tracks the approval of GAP standards and protocols developed under the Program and approved by BARC (relates to DLI1)	Annual	BARC	Document Review	DAE
Farmers and certification staff trained in GAP certification	Farmers and certification staff who have received training on GAP certification by MoA under the Program (relates to DLI1)	Annual	DAE	Process monitoring by DAE	DAE
Share of which women		Annual	DAE	Process Monitoring	DAE
Increased area under high-yielding rice varieties	Area under high-yielding rice varieties that are developed by NARS and rolled out under the Program. The indicator also monitors varieties from BRRI100+ and up that have already been developed but have not yet been adopted by farmers (relates to DLI2)	Annual	BRRI	Sample Survey	BRRI
Stress-tolerant and nutrient-dense rice varieties generated	New rice varieties that are stress-tolerant or nutrient dense generated under the	Annual	BRRI, BARC, BADC	Document Review	BRRI



	Program and certified by the Bangladesh Seed Association for dissemination (relates to DLI2)				
Certified rice seeds produced and marketed through the network	Certified rice seeds produced and marketed by members of the rice seed multiplication and marketing network supported under the Program (relates to DLI2)	Annual	BRRI, BADC, DAE	Process Monitoring	BRRI
Stress-tolerant and nutrient-dense non-rice varieties generated	New non-rice varieties that are stress-tolerant or nutrient-dense newly generated under the Program and certified by the Bangladesh Seed Association for dissemination (relates to DLI3)	Annual	BARI, BARC, BADC, DAE	Process monitoring, Document Review	BARI
Certified non-rice seeds produced and marketed through the networks	Certified non-rice seeds produced and marketed by members of the relevant crop-specific seed multiplication and marketing networks supported under the Program (relates to DLI3)	Annual	BARI, BADC, DAE	Process monitoring, Document review	BARI
Farmers adopting improved agricultural	This indicator measures the	Annual	DAE, BADC	Process Monitoring,	DAE



technology	<p>number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank.</p> <p>NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber and non-timber forest products.</p> <p>Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project.</p> <p>Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.).</p>			Document Review, Annual Survey	
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	If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology. Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.				
Farmers adopting improved agricultural technology - Female					
Extension staff trained in e-extension service delivery and digital M&E tools	Extension staff who completed training on e-extension service delivery and digital M&E tools (relates to DLI5 and DLI10)	Annual	DAE	Document Review, Random Sampling	DAE
Share of which women		Annual	DAE	Document Review and	DAE



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				MIS	
Farmers receiving services through KSC	Farmers who received services (extension, input subsidy, market access, and credit) through KSC (relates to DLI5)	Annual	DAM, DAE	Document Review, Random Sampling	DAE
Share of which women		Annual	DAM	Document Review and Random Sampling	DAM, DAE
E-voucher pilot for new input subsidy mechanism implemented in targeted Upazilas	Delivery and completion of an e-voucher pilot to deliver input subsidies in targeted Upazilas measured by an approved completion report. Measurement: in year 2, design completed; in 3 years, pilot launched; in year 5, pilot completed (relates to DLI5)	Annual	DAE	Document Review, On-site review	DAE
Institutions providing financial services to at least 5,000 farmers	Institutions (e.g., financial institutions, fintechs, and others) which provided financial services through KSC to at least 5,000 farmers (relates to DLI5)	Annual	DAE	Document Review, Sample survey	DAE
Laboratories receiving accreditation for a testing process	Laboratories which are either established, refurbished, or upgraded with support from the Program and are	Annual	DAE	Document review, On-site review	DAE



	accredited by the Bangladesh Accreditation Board (relates to DLI6)				
Testing processes for agricultural commodities accredited	Testing processes for agricultural commodities accredited (relates to DLI6)	Annual	DAM, DAE	Document Review, On- site Review	DAE
MoUs with businesses and financial institutions for OJT and financial support	MoUs with businesses and financial institutions for OJT and financial support for women and youth (<35 years) (relates to DLI7)	Annual	DAM	Document Review, On- Site Review	DAM
Women and youth trained under the Program	Women and youth (<35 years) who received entrepreneurship training (including OJT) in commercial agriculture, agribusiness, agricultural innovations, and agricultural services under the Program (relates to DLI7)	Annual	DAM, DAE	Document Review, On- site Review, MIS	DAM
Share of which women		Annual	DAM, DAE	Document Review, On- site Review, MIS	DAM, DAE
Increase in R&D budget for NARS Institutes	Cumulative percentage increase in R&D budget (in BDT) to NARS Institutions. 100 baseline means FY 2022 Agriculture R&D budget. This implies an	Annual	BARC	Document Review	BARC



	incremental annual increase of around 10 percent (relates to DLI8)				
MoUs and agreements on research collaboration with international research labs and the PS	MoUs and agreements having been signed with international research labs on research collaboration and with the PS on scaling up research outcomes of NARS institutes (relates to DLI8)	Annual	BARC	Document Review, On-site Review	BARC
Promotional bodies for select commodities established and operational	Promotional bodies established for export-oriented commodities (mango, jackfruit, tomato, potato, and fine rice) and operational. Operational means that an organizational mechanism is developed and annual report produced (incl. activities conducted, plans for next year) (relates to DLI9)	Annual	DAM, DAE	Document Review, On-site Review	DAM
Stakeholders' organizations of selected VCs strengthened with institutional capacity building support	Registered stakeholder organizations, such as farmers, traders, processors, of selected 5 VCs who participated in capacity building program	Annual	DAE, DAM	Document Review, On-Site Review	DAM



	under the Program (relates to DLI9)				
Upazilas with staff equipped in high quality data collection capacity	Upazilas with staffs equipped in high quality data collection capacity, including hardware, software, and improved capacity (relates to DLI10)	Annual	DAE	Document Review, On-site review	DAE
Agricultural Annual Performance Report prepared and published	Agricultural Annual Performance Report prepared and published (relates to DLI10)	Annual	DAE, MoA	Document Review	DAE
Biannual Agricultural Policy Notes prepared and published	Biannual Agricultural Policy Notes (including market forecasts) prepared and published (relates to DLI10)	Biannually	DAM	Document review	DAE
Share of beneficiaries who received support from the Program who are satisfied	Stakeholders who receive Program services, such as improved rice and non-rice varieties, irrigation technologies, KSC, entrepreneurship training, and who report that they are satisfied (satisfied refers to a score of 4 or 5 out of 5) (relates to DLIs 1,2,3,4, and 5)	Annual	DAE	Process Monitoring, Document Review	DAE

**ANNEX 2. DISBURSEMENT LINKED INDICATORS, DISBURSEMENT ARRANGEMENTS AND VERIFICATION PROTOCOLS**

Disbursement Linked Indicators Matrix				
DLI 1	Development, rollout, and adoption of GAP standards in fruit and vegetable production			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Text	55,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		3,000,000.00	See each sub DLI
2025	Cumulative of all sub DLIs		6,000,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		14,000,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		12,000,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		20,000,000.00	See each sub DLI
DLI 1.1	GAP standards and protocols for fruits and vegetables developed and approved by MoA			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	5,000,000.00	
Period	Value		Allocated Amount (USD)	Formula



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Baseline	0.00		
2024	6.00	2,000,000.00	US\$1 million for each 3 new protocols approved
2025	15.00	3,000,000.00	US\$1 million for each 3 new protocols approved
2026	15.00	0.00	Not applicable
2027	15.00	0.00	Not applicable
2028	15.00	0.00	Not applicable
DLI 1.2	Farmers and certification staff trained in GAP certification		
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)
Process	Yes	Text	10,000,000.00
Period	Value	Allocated Amount (USD)	Formula
Baseline	0.00		
2024	Farmers: 100,000; Staff: 500	1,000,000.00	US\$1 million for every new 200,000 farmers trained and US\$1 million for every new 300 staff trained
2025	Farmers: 300,000; Staff: 1,000 (cumulative)	3,000,000.00	US\$1 million for every new 200,000 farmers trained and US\$1 million for every new 300 staff trained



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2026	Farmers: 600,000; Staff: 1,500 (cumulative)	4,000,000.00	US\$1 million for every new 200,000 farmers trained and US\$1 million for every new 300 staff trained	
2027	Farmers: 1,000,000; Staff 1,500 (cumulative)	2,000,000.00	US\$1 million for every new 200,000 farmers trained and US\$1 million for every new 300 staff trained	
2028	1,000,000 farmers and 1,500 staff trained (cumulative)	0.00	Not applicable	
DLI 1.3	Area under fruits and vegetables with GAP certification			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Hectare(Ha)	40,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	0.00		0.00	US\$2 million for each additional 15,000 Ha
2026	75,000.00		10,000,000.00	US\$2 million for each additional 15,000 Ha
2027	150,000.00		10,000,000.00	US\$2 million for each additional 15,000 Ha



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2028	300,000.00		20,000,000.00	US\$2 million for each additional 15,000 Ha
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DLI 2	Development and adoption of high-yielding rice varieties			
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Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Text	51,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		2,800,000.00	See each sub DLI
2025	Cumulative of all sub DLIs		10,200,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		10,200,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		10,200,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		17,600,000.00	See each sub DLI

DLI 2.1	Stress-tolerant and nutrient-dense rice varieties generated			
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Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	28,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			



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2024	0.00	0.00	Not applicable
2025	1.00	5,600,000.00	US\$5.6 million for each new variety
2026	2.00	5,600,000.00	US\$5.6 million for each new variety
2027	3.00	5,600,000.00	US\$5.6 million for each new variety
2028	5.00	11,200,000.00	US\$5.6 million for each new variety

DLI 2.2 Network established and operational for seed multiplication and marketing				
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Text	9,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	BSd - 10t, FSd - 800t, CSd - 1,000t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2026	BSd - 20t, FSd - 1,600t, CSd - 2,000t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2027	BSd - 35t, FSd - 2,800t, CSd - 3,500t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2028	BSd - 50t, FSd - 4,000t, CSd - 5,000t		3,600,000.00	US\$1.8 million for additional 10t



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				BSd, 800t FSd, and 1,000t CSD*
DLI 2.3	New area under high-yielding rice varieties			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Hectare(Ha)	14,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	40,000.00		2,800,000.00	US\$2.8 million for each additional 40,000Ha
2025	80,000.00		2,800,000.00	US\$2.8 million for each additional 40,000Ha
2026	120,000.00		2,800,000.00	US\$2.8 million for each additional 40,000Ha
2027	160,000.00		2,800,000.00	US\$2.8 million for each additional 40,000Ha
2028	200,000.00		2,800,000.00	US\$2.8 million for each additional 40,000Ha



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DLI 3	Crop diversification towards non-rice cereals, pulses, oilseeds, and horticulture crops			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Text	60,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		0.00	See each sub DLI
2025	Cumulative of all sub DLIs		12,000,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		13,200,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		13,200,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		21,600,000.00	See each sub DLI
DLI 3.1	Stress-tolerant and nutrient-dense varieties developed and on-farm trial for non-rice crops conducted			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	18,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	3.00		3,600,000.00	US\$1.2 million for each new variety



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2026	7.00	4,800,000.00	US\$1.2 million for each new variety
2027	11.00	4,800,000.00	US\$1.2 million for each new variety
2028	15.00	4,800,000.00	US\$1.2 million for each new variety

DLI 3.2	Seed/samplings/propagative material multiplication and marketing network (including private sector participation) established and operational			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Text	9,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	BSd - 10t, FSd - 800t, CSd - 1,000t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2026	BSd - 20t, FSd - 1,600t, CSd - 2,000t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2027	BSd - 35t, FSd - 2,800t, CSd - 3,500t		1,800,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*
2028	BSd - 50t, FSd - 4,000t, CSd - 5,000t		3,600,000.00	US\$1.8 million for additional 10t BSd, 800t FSd, and 1,000t CSd*



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DLI 3.3	New area under non-rice cereals, pulses, oil crops, fruits and vegetables			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Hectare(Ha)	33,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	20,000.00		0.00	US\$6.6 million for each additional 40,000 Ha
2025	50,000.00		6,600,000.00	US\$6.6 million for each additional 40,000 Ha
2026	90,000.00		6,600,000.00	US\$6.6 million for each additional 40,000 Ha
2027	140,000.00		6,600,000.00	US\$6.6 million for each additional 40,000 Ha
2028	200,000.00		13,200,000.00	US\$6.6 million for each additional 40,000 Ha
DLI 4	Adoption of improved and efficient irrigation technologies by farmers			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Text	55,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula



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Baseline	0.00			
2024	Cumulative of all sub DLIs	4,000,000.00	See each sub DLI	
2025	Cumulative of all sub DLIs	0.00	See each sub DLI	
2026	Cumulative of all sub DLIs	10,200,000.00	See each sub DLI	
2027	Cumulative of all sub DLIs	10,200,000.00	See each sub DLI	
2028	Cumulative of all sub DLIs	30,600,000.00	See each sub DLI	
DLI 4.1	Policy/Regulatory framework & strategic plan developed			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	No	Yes/No	4,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	No			
2024	Yes		4,000,000.00	US\$4 million for yes
2025	Yes		0.00	Not applicable
2026	Yes		0.00	Not applicable
2027	Yes		0.00	Not applicable
2028	Yes		0.00	Not applicable



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DLI 4.2	New area under efficient irrigation technologies			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Hectare(Ha)	51,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	0.00		0.00	Not applicable
2026	20,000.00		10,200,000.00	US\$10.2 million for each additional 20,000 Ha
2027	50,000.00		10,200,000.00	US\$10.2 million for each additional 20,000 Ha
2028	100,000.00		30,600,000.00	US\$10.2 million for each additional 20,000 Ha
DLI 5	Expansion of digital agricultural service provision through KSC			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Text	65,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			



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2024	Cumulative of all sub DLIs	5,000,000.00	See each sub DLI
2025	Cumulative of all sub DLIs	4,500,000.00	See each sub DLI
2026	Cumulative of all sub DLIs	15,000,000.00	See each sub DLI
2027	Cumulative of all sub DLIs	22,500,000.00	See each sub DLI
2028	Cumulative of all sub DLIs	18,000,000.00	See each sub DLI

DLI 5.1				
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	No	Yes/No	5,000,000.00	
Period				
Baseline	No			
2024	Yes		5,000,000.00	US\$5 million for yes
2025	Yes		0.00	Not applicable
2026	Yes		0.00	Not applicable
2027	Yes		0.00	Not applicable
2028	Yes		0.00	Not applicable



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DLI 5.2	Digital extension services delivered and e-voucher pilot for new input subsidy mechanism implemented			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Text	15,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	10 Upazilas covered by digital extension		0.00	US\$1 million per new 100 Upazilas covered by digital extension* and US\$2 million per new 3 Upazilas where e-subsidy pilot conducted
2025	60 Upazilas covered by digital extension		0.00	US\$1 million per new 100 Upazilas covered by digital extension* and US\$2 million per new 3 Upazilas where e-subsidy pilot conducted
2026	260 Upazilas covered by digital extension, and e-subsidy pilot conducted in 7 Upazilas		6,000,000.00	US\$1 million per new 100 Upazilas covered by digital extension* and US\$2 million per new 3 Upazilas where e-subsidy pilot conducted
2027	495 Upazilas covered by digital extension, and e-subsidy pilot conducted in 15 Upazilas		9,000,000.00	US\$1 million per new 100 Upazilas covered by digital extension* and US\$2 million per new 3 Upazilas where e-subsidy pilot conducted
2028	495 Upazilas covered by digital extension, and e-		0.00	US\$1 million per new 100 Upazilas



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	subsidy pilot conducted in 15 Upazilas		covered by digital extension* and US\$2 million per new 3 Upazilas where e-subsidy pilot conducted	
DLI 5.3	Farmers receiving services (extension support, input subsidy support, and credit support) through KSC			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	
Output	Yes	Number	45,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	500,000.00		4,500,000.00	US\$4.5 million for every new 500,000 farmers
2026	1,500,000.00		9,000,000.00	US\$4.5 million for every new 500,000 farmers
2027	3,000,000.00		13,500,000.00	US\$4.5 million for every new 500,000 farmers
2028	5,000,000.00		18,000,000.00	US\$4.5 million for every new 500,000 farmers



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DLI 6	Promotion of the accreditation of seed certification and food safety testing processes			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Text	32,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		0.00	See each sub DLI
2025	Cumulative of all sub DLIs		4,600,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		6,400,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		16,500,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		4,500,000.00	See each sub DLI
DLI 6.1	Laboratories established (including refurbished/upgraded) with adequate HR and equipment			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	23,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	2.00		4,600,000.00	US\$4.6 million for every 2 labs



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			established
2026	5.00	4,600,000.00	US\$4.6 million for every 2 labs established
2027	10.00	13,800,000.00	US\$4.6 million for every 2 labs established
2028	10.00	0.00	Not applicable

DLI 6.2 Accredited testing processes for agricultural commodities in testing labs				
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Number	9,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	0.00		0.00	Not applicable
2026	4.00		1,800,000.00	US\$0.9 million for every 2 new processes accredited
2027	10.00		2,700,000.00	US\$0.9 million for every 2 new processes accredited
2028	20.00		4,500,000.00	US\$0.9 million for every 2 new processes accredited



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DLI 7	Promotion of agri-food entrepreneurship for youth and women			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Text	39,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		0.00	See Description
2025	Cumulative of all sub DLIs		5,700,000.00	See Description
2026	Cumulative of all sub DLIs		11,700,000.00	See Description
2027	Cumulative of all sub DLIs		12,600,000.00	See Description
2028	Cumulative of all sub DLIs		9,000,000.00	See Description
DLI 7.1	Partnerships with businesses for OTJ training and PARTNER award mechanism established			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	9,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	10.00		2,700,000.00	US\$0.9 million for every 3 new



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				MoUs
2026	20.00		2,700,000.00	US\$0.9 million for every 3 new MoUs
2027	30.00		3,600,000.00	US\$0.9 million for every 3 new MoUs
2028	30.00		0.00	Not applicable
DLI 7.2	Youth and women entrepreneurs trained (including on-the-job training) in commercial agriculture, agribusinesses, new agricultural innovations, and agricultural services			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Number	30,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	3,000.00		3,000,000.00	US\$3 million for every new 2,000
2026	8,000.00		9,000,000.00	US\$3 million for every new 2,000
2027	14,000.00		9,000,000.00	US\$3 million for every new 2,000
2028	20,000.00		9,000,000.00	US\$3 million for every new 2,000



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DLI 8	Increase of R&D activities for new technologies and innovations along with development of an operational evaluation system for NARS institutes and extension services			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Text	92,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		9,200,000.00	See each sub DLI
2025	Cumulative of all sub DLIs		18,400,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		18,400,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		18,400,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		27,600,000.00	See each sub DLI
DLI 8.1	Increase in R&D budget for NARS institutes			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Percentage	46,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	100.00			
2024	110.00		9,200,000.00	US\$9.2 million for achieving specific R&D budget targets (see Verification)



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			Procedure)
2025	121.00	9,200,000.00	US\$9.2 million for achieving specific R&D budget targets (see Verification Procedure)
2026	133.00	9,200,000.00	US\$9.2 million for achieving specific R&D budget targets (see Verification Procedure)
2027	146.00	9,200,000.00	US\$9.2 million for achieving specific R&D budget targets (see Verification Procedure)
2028	161.00	9,200,000.00	US\$9.2 million for achieving specific R&D budget targets (see Verification Procedure)
DLI 8.2	MoUs/agreements on research collaboration with research labs and on scaling up NARS's research outcomes with MoA agencies and the PS		
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)
Intermediate Outcome	Yes	Number	46,000,000.00
Period	Value	Allocated Amount (USD)	Formula
Baseline	0.00		
2024	0.00	0.00	Not applicable



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2025	5.00		9,200,000.00	US\$9.2 million for every 5 new MoUs/agreements
2026	10.00		9,200,000.00	US\$9.2 million for every 5 new MoUs/agreements
2027	15.00		9,200,000.00	US\$9.2 million for every 5 new MoUs/agreements
2028	25.00		18,400,000.00	US\$9.2 million for every 5 new MoUs/agreements
DLI 9	Establishment and operationalization of VC promotional bodies for select commodities			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Text	28,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		5,000,000.00	See each sub DLI
2025	Cumulative of all sub DLIs		0.00	See each sub DLI
2026	Cumulative of all sub DLIs		9,200,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		13,800,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		0.00	See each sub DLI



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DLI 9.1	Policy and regulatory framework developed and adopted by MoA			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	No	Yes/No	5,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	No			
2024	Yes		5,000,000.00	US\$5 million for yes
2025	Yes		0.00	Not applicable
2026	Yes		0.00	Not applicable
2027	Yes		0.00	Not applicable
2028	Yes		0.00	Not applicable
DLI 9.2	VC-specific promotional bodies for at least five commodities established and operational			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Number	23,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	0.00		0.00	Not applicable



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2026	2.00		9,200,000.00	US\$4.6 million for every new body
2027	5.00		13,800,000.00	US\$4.6 million for every new body
2028	5.00		0.00	Not applicable
DLI 10	Improvement of quality information system (agricultural statistics and market research services incl. foreign markets)			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Text	23,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	Cumulative of all sub DLIs		0.00	See each sub DLI
2025	Cumulative of all sub DLIs		5,100,000.00	See each sub DLI
2026	Cumulative of all sub DLIs		7,700,000.00	See each sub DLI
2027	Cumulative of all sub DLIs		7,700,000.00	See each sub DLI
2028	Cumulative of all sub DLIs		2,500,000.00	See each sub DLI



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DLI 10.1	Upazilas with staff equipped in high-quality data collection capacity			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Process	Yes	Number	13,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
2024	0.00		0.00	Not applicable
2025	100.00		2,600,000.00	US\$2.6 million for every 100 new Upazilas*
2026	300.00		5,200,000.00	US\$2.6 million for every 100 new Upazilas*
2027	495.00		5,200,000.00	US\$2.6 million for every 100 new Upazilas*
2028	495.00		0.00	Not applicable
DLI 10.2	Biannual Agricultural Policy Notes (including market forecasts) prepared and published			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	No	Yes/No	10,000,000.00	
Period	Value		Allocated Amount (USD)	Formula
Baseline	No			



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2024	No	0.00	US\$2.5 million for every Yes
2025	Yes	2,500,000.00	US\$2.5 million for every Yes
2026	Yes	2,500,000.00	US\$2.5 million for every Yes
2027	Yes	2,500,000.00	US\$2.5 million for every Yes
2028	Yes	2,500,000.00	US\$2.5 million for every Yes

**Verification Protocol Table: Disbursement Linked Indicators**

DLI 1	Development, rollout, and adoption of GAP standards in fruit and vegetable production
Description	More efficient use of inputs and alleviation of food safety challenges through the development, rollout, and adoption of GAP standards in fruit and vegetable production
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BARI, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 1.1	GAP standards and protocols for fruits and vegetables developed and approved by MoA
Description	GAP standards and protocols for fruits and vegetables developed and approved by MoA. Target: 15 GAP protocols to be developed and approved by MoA.
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BARI, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of approval of GAP standards and protocols by BARC. The third-party VA will verify this evidence through document review.
DLI 1.2	Farmers and certification staff trained in GAP certification
Description	Farmers and certification staff trained in GAP certification
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BARI, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of farmers and certification staff having completed trainings on GAP. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.



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DLI 1.3	Area under fruits and vegetables with GAP certification
Description	Area under fruits and vegetables with GAP certification. Target: 300,000 Ha.
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BARI, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of farms (including size) having received GAP certification for fruits and vegetables cultivation based on annual audits. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 2	Development and adoption of high-yielding rice varieties
Description	Increased rice productivity and resilience through the development and adoption of high-yielding rice varieties
Data source/ Agency	Lead agency: BRRI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 2.1	Stress-tolerant and nutrient-dense rice varieties generated
Description	Stress-tolerant and nutrient-dense rice varieties generated
Data source/ Agency	Lead agency: BRRI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BRRI will submit documentary evidence of new rice varieties that are stress-tolerant or nutrient dense having been generated under the Program and having been certified by the Bangladesh Seed Association for dissemination. The third-party VA will verify this evidence through document review.



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DLI 2.2	Network established and operational for seed multiplication and marketing
Description	Tons of seeds produced and marketed through the seed multiplication network. Target = total 50 tons BSd, 4,000 tons FSd, and 5,000 tons CSd produced and marketed through the network. * Disbursement will take place when the targets for all three types of seeds are achieved.
Data source/ Agency	Lead agency: BRRI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BRRI will submit documentary evidence of BSd, FSd and CSd of rice having been produced and marketed by members of the rice seed multiplication and marketing network supported under the Program. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 2.3	New area under high-yielding rice varieties
Description	New area under high-yielding rice varieties developed by NARS and rolled out under the Program as well as varieties from BRRI100+ and up, which had already been developed but had not yet been adopted by farmers.
Data source/ Agency	Lead agency: BRRI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BRRI will submit documentary evidence of farms (including size) under high-yielding rice varieties developed by NARS and rolled out under the Program as well as varieties from BRRI100+ and up, which had already been developed but had not yet been adopted by farmers. The current number of farms and their size should be updated and reported annually (instead of reporting cumulative numbers). The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 3	Crop diversification towards non-rice cereals, pulses, oilseeds, and horticulture crops
Description	Crop diversification through the development and adoption of stress-tolerant and nutrient-dense varieties of non-rice cereals, pulses, oilseeds, spices, and horticulture crops
Data source/ Agency	Lead agency: BARI; Contributing Agencies: DAE, BARC, BADC



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Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 3.1	Stress-tolerant and nutrient-dense varieties developed and on-farm trial for non-rice crops conducted
Description	Stress-tolerant and nutrient-dense varieties developed and on-farm trial for non-rice crops conducted. Target = 15 varieties.
Data source/ Agency	Lead agency: BARI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BARI will submit documentary evidence of new non-rice varieties which are stress-tolerant or nutrient dense having been generated under the Program and having been certified by the Bangladesh Seed Association for dissemination. The third-party VA will verify this evidence through document review.
DLI 3.2	Seed/samplings/propagative material multiplication and marketing network (including private sector participation) established and operational
Description	Tons of seeds produced and marketed through the seed multiplication network. Target = total 50 tons of BSd, 4,000 tons of FSd, 5,000 tons of CSd produced and marketed through the network. * Disbursement will take place when the targets for all three types of seeds are achieved.
Data source/ Agency	Lead agency: BARI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BARI will submit documentary evidence of BSd, FSd and CSd of non-rice crops having been produced and marketed by members of the relevant crop specific seed multiplication and marketing networks supported under the Program. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 3.3	New area under non-rice cereals, pulses, oil crops, fruits and vegetables
Description	New area under non-rice cereals, pulses, oilseeds, and horticulture crops



Data source/ Agency	Lead agency: BARI; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BARI will submit documentary evidence of farms (including size) under stress-tolerant or nutrient dense non-rice varieties developed and rolled out under the Program. The current number of farms and their size should be updated and reported annually (instead of reporting cumulative numbers). The third-party VA will verify this evidence through on site review and sample survey based on documentation received. It is possible that the area measured overlaps with the area under GAP certification (DLI 1) and the area under efficient irrigation systems (DLI 4). The indicator does not account for crop management practices.
DLI 4	Adoption of improved and efficient irrigation technologies by farmers
Description	Increased water use efficiency through the adoption of improved and efficient irrigation technologies by farmers
Data source/ Agency	Lead agency: BADC; Contributing Agencies: DAE, BMDA, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 4.1	Policy/Regulatory framework & strategic plan developed
Description	Policy/Regulatory framework developed and a strategic plan for adoption of efficient irrigation technologies approved
Data source/ Agency	Lead agency: BADC; Contributing Agencies: DAE, BMDA, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BADC will submit documentary evidence of approval of the strategic plan for adoption of efficient irrigation technologies The third-party VA will verify this evidence through document review.



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DLI 4.2	New area under efficient irrigation technologies
Description	New area under resilience-building efficient irrigation technologies. Target = 100,000Ha.
Data source/ Agency	Lead agency: BADC; Contributing Agencies: DAE, BMDA, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BADC will submit documentary evidence of farms (including size) under resilience-building efficient irrigation technologies promoted under the Program, including sprinkler, drip irrigation, and buried pipe & AWD. The current number of farms and their size should be updated and reported annually (instead of reporting cumulative numbers). The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 5	Expansion of digital agricultural service provision through KSC
Description	More efficient provision of services and subsidies to farmers through the development and adoption of digital agricultural services tools
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 5.1	Policy/Regulatory framework developed
Description	Strategic plans approved for rolling out of the KSC and e-voucher pilot for new inputs subsidy mechanism
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of approval of the strategic plans for rolling out of the KSC and e-voucher pilot for new inputs subsidy mechanism. The third-party VA will verify this evidence through document review.



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DLI 5.2	Digital extension services delivered and e-voucher pilot for new input subsidy mechanism implemented
Description	1) Upazilas covered by digital extension (Target = 495 Upazilas); * As there are 495 Upazilas in total, the final disbursement can be obtained after completion of the activity over the remaining 95 Upazilas (from 400 to 495) instead of 100 2) Upazilas where e-subsidy pilot is conducted (Target = 15 Upazilas)
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of Upazilas where digital extension services are delivered and e-voucher pilot implemented. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 5.3	Farmers receiving services (extension support, input subsidy support, and credit support) through KSC
Description	Farmers receiving services (extension support, input subsidy support, and credit support) through KSC. Target = 5,000,000.
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of farmers having received services through KSC. The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 6	Promotion of the accreditation of seed certification and food safety testing processes
Description	Improved food safety and access to markets through the accreditation of seed certification and food safety testing processes
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)



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Procedure	See each sub DLI
DLI 6.1	Laboratories established (including refurbished/upgraded) with adequate HR and equipment
Description	Laboratories established (including refurbished/upgraded) with adequate HR and equipment and ready for certification
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of laboratories having been either established, refurbished or upgraded with support from the Program and having been accredited for a testing process by Bangladesh Accreditation Board. The third-party VA will verify this evidence through document review.
DLI 6.2	Accredited testing processes for agricultural commodities in testing labs
Description	Testing processes for agricultural commodities accredited
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC, BARI, BRRI
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of testing processes for agricultural commodities accredited in testing laboratories supported or not by the Program. The third-party VA will verify this evidence through document review.
DLI 7	Promotion of agri-food entrepreneurship for youth and women
Description	Increased female and youth entrepreneurship through skills strengthening and advisory support
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI



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DLI 7.1	Partnerships with businesses for OTJ training and PARTNER award mechanism established
Description	MoUs with businesses and financial institutions for OTJ training and financial support for women and youth
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAM will submit documentary evidence of MoUs having been signed with businesses and financial institutions for OTJ training and financial support for women and youth. The third-party VA will verify this evidence through document review.
DLI 7.2	Youth and women entrepreneurs trained (including on-the-job training) in commercial agriculture, agribusinesses, new agricultural innovations, and agricultural services
Description	Youth and women entrepreneurs trained (including OTJ training) in commercial agriculture, agribusinesses, agricultural innovations and agricultural services
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC, BADC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAM will submit documentary evidence of women and youth having received training (including OTJ training) in commercial agriculture, agribusinesses, new agricultural innovations, and agricultural services under the Program. The third-party VA will verify this evidence through sample survey based on documentation received.
DLI 8	Increase of R&D activities for new technologies and innovations along with development of an operational evaluation system for NARS institutes and extension services
Description	Increased R&D activities and more efficient extension services through greater investments in R&D, as well as partnerships with global agricultural research institutions and with the PS
Data source/ Agency	Lead agency: BARC; Contributing Agencies: BADC, BARI, BRRI, DAE, DAM
Verification Entity	Third-Party Verification Agency (to be recruited)



Procedure	See each sub DLI
DLI 8.1	Increase in R&D budget for NARS institutes
Description	Incremental annual increases in R&D budget for NARS Institutes. Disbursements of US\$9.2 million for achieving following levels of R&D budget: - Target 1: 110 percent of baseline budget; - Target 2: 121 percent of baseline budget; - Target 3: 133 percent of baseline budget; - Target 4: 146 percent of baseline budget; - Target 5: 161 percent of baseline budget. Baseline budget means FY 2022 Agriculture R&D budget. Payment for a given Target can only happen once.
Data source/ Agency	Lead agency: BARC; Contributing Agencies: BADC, BARI, BRRI, DAE, DAM
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BARC will submit documentary evidence of percentage increase in R&D budget (in BDT) having been granted to NARS Institutes. The third-party VA will verify this evidence through document review.
DLI 8.2	MoUs/agreements on research collaboration with research labs and on scaling up NARS's research outcomes with MoA agencies and the PS
Description	MoUs/agreements on research collaboration with research labs and on scaling up NARS's research outcomes with MoA agencies and the PS
Data source/ Agency	Lead agency: BARC; Contributing Agencies: BADC, BARI, BRRI, DAE, DAM
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	BARC will submit documentary evidence of MoUs and agreements having been signed with international research labs on research collaboration and with the PS on scaling up of research outcomes of NARS institutes. The third-party VA will verify this evidence through document review.
DLI 9	Establishment and operationalization of VC promotional bodies for select commodities
Description	Improved VC coordination and promotion through the establishment and operationalization of VC promotional bodies
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC



Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 9.1	Policy and regulatory framework developed and adopted by MoA
Description	Policy developed and adopted by MoA for VC specific promotional bodies
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAM will submit documentary evidence of policy and regulatory framework having been adopted by MoA for VC specific promotional bodies The third-party VA will verify this evidence through document review.
DLI 9.2	VC-specific promotional bodies for at least five commodities established and operational
Description	VC-specific promotional bodies for at least five commodities established and operational
Data source/ Agency	Lead agency: DAM; Contributing Agencies: DAE, BARC
Verification Entity	Third-Party Verification Agency (to be recruited)
Procedure	DAM will submit documentary evidence of promotional bodies established for export-oriented commodities (mango, jackfruit, tomato, potato, and fine rice) and operational. Operational means that an organizational mechanism is developed and annual report produced (incl. activities conducted, plans for next year). The third-party VA will verify this evidence through document review.
DLI 10	Improvement of quality information system (agricultural statistics and market research services incl. foreign markets)
Description	Improved agricultural information system through a strengthening of ICT infrastructure and systems and of human resource capacity in data collection, entry, processing, and analysis
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC



Verification Entity	Third Part Verification Agency (to be recruited)
Procedure	See each sub DLI
DLI 10.1	Upazilas with staff equipped in high-quality data collection capacity
Description	Upazilas with staff equipped in high-quality data collection capacity. *As there are 495 Upazilas in total, the final disbursement can be obtained after completion of the activity over the remaining 95 Upazilas (from 400 to 495) instead of 100
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third Part Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of Upazilas with staff equipped in high quality data collection capacity – including: hardware, software and improved staff capacity The third-party VA will verify this evidence through on site review and sample survey based on documentation received.
DLI 10.2	Biannual Agricultural Policy Notes (including market forecasts) prepared and published
Description	Biannual Agricultural Policy Notes (including market forecasts) prepared and published. Yes means that all 2 biannual notes published.
Data source/ Agency	Lead agency: DAE; Contributing Agencies: DAM, BARC, BADC
Verification Entity	Third Part Verification Agency (to be recruited)
Procedure	DAE will submit documentary evidence of Biannual Agricultural Policy Notes, including market forecasts having been published. The third-party VA will verify this evidence through document review.

**ANNEX 3. (SUMMARY) TECHNICAL ASSESSMENT****1. Description and Assessment of Program Strategic Relevance and Technical Soundness****a. Strategic Relevance**

1. **PARTNER will support the objectives of the NAP 2018 and its 2020 PoA targets.** The NAP is the GoB's medium-term sector strategy for agricultural transformation in the country, and NAP's PoA, finalized in 2020, defines specific areas of intervention and sets targets and timelines. Considering the contribution of the sector to national GDP and employment (15 percent in 2017 and 41 percent in 2015-16, respectively), the NAP is of high strategic relevance for Bangladesh. PARTNER will contribute to achieving the objectives of the NAP 2018, which prioritizes diversification, commercialization, and mechanization in agriculture as specific goals to transform the agriculture sector towards a more productive, profitable, and sustainable agricultural system. In addition to the NAP and the eighth FYP, PARTNER's design reflects priorities documented in other relevant policies for the sector adopted by the government such as the Delta Plan 2100, the Agriculture Extension Policy 2020, the Agriculture Mechanization Policy 2020, and the Good Agriculture Practice Policy 2020.
2. **The Program will leverage US\$140 million⁵¹ in private capital mobilization from farmers,⁵² input providers, and entrepreneurs through activities under DLIs 1, 4, and 7:**
 - a) DLI 1: Investments on farm are required to achieve the target for adoption of GAP standards under DLI 1. These investments are estimated at US\$417 per Ha in total. The logic of the Program is that government will contribute the equivalent of US\$174, while farmers will have to invest US\$243 per Ha themselves. Another key assumption of the Program for the achievement of DLI 1 is that private input suppliers will have to invest in their capacity to produce new inputs needed for the adoption of GAP. These investments are estimated at \$47 per Ha. In total, investments of US\$72.9 million from farmers and US\$14.1 million from input suppliers will be needed to achieve the end target of 300,000 Ha under GAP under DLI 1.
 - b) DLI 4: The same logic is applied for the adoption of efficient irrigation technologies under DLI 4. In this case, on farm investments are estimated at US\$707 per Ha in total. The logic of the Program is that government will contribute the equivalent of US\$472, while farmers will have to invest US\$235 per Ha themselves. Another key assumption for the achievement of DLI 4 is that private irrigation equipment suppliers will have to invest in their capacity to produce these new technologies. These investments are estimated at US\$236 per Ha. In total, investments of US\$23.5 million from farmers and US\$23.6 million from irrigation equipment suppliers will be needed to achieve the end target of 100,000 Ha equipped with efficient irrigation technologies under DLI 4.

⁵¹ The investment amounts presented below are based on the *Development Project Proforma* developed by the GoB as part of the preparation of PARTNER. The underlying assumptions for on-farm investments are further corroborated by WB analytics and publications (e.g., *World Bank (2021): Bangladesh Rural Income Diagnostic*)

⁵² Farmers are considered legal entities in Bangladesh because farming households (i) are financially and managerially independent from government and carry out farming as a business; and (ii) receive specific public support (e.g., targeted subsidies) as individually identified and verified economic actors. Indeed, the Program will also help improve the ongoing registration of farmers by accelerating the rollout of the farmers registry under DLIS.



- c) DLI 7: Entrepreneurs will also need to invest US\$6 million in their own businesses as part of the support provided by government to women and youth entrepreneurship through a matching grant program under DLI7.⁵³

b. Technical Soundness

3. **PARTNER's overall framework rests on a solid technical basis.** The Program reflects the findings and recommendations of the analytical work and sectoral diagnostics carried out by the WB in recent years. These include *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities, 2020*; *Climate Smart Agriculture Investment Plan, 2019*; *Bangladesh Rural Income Diagnostic Study, 2021*; and *Dynamics of Rural Growth in Bangladesh Study, 2016*. These assessments highlight the importance of a sectoral transformation with a focus on productivity improvement, VC strengthening, and enhancing FS, while ensuring climate resilience of the sector. The Program's technical design is also based on long-standing experience in agricultural development in the country and abroad. Interventions under the proposed Program consist of scaling up activities familiar to the MoA and IAs, which have acquired extensive experience in developing and implementing sectoral policies, strategies, and action plans, in working with key stakeholders, including farmers, agribusinesses, and in strengthening public institutions serving the agriculture sector. The MoA has shown ownership of its sector policies and strategies throughout NAP preparation and implementation, with technical support from FAO.
4. **The Program is built on experience and lessons learned from on-going and past agricultural projects in Bangladesh** (e.g., NATP-2, IAPP, ANGeL) and the region supported by the WB and other partners. Program design also benefits from lessons learned through the WB's global experience with similar PforRs and other agricultural transformation programs, especially in South and South-East Asia.

2. Description and Assessment of Program Expenditure Framework

Table 5. Topline Budget Lines of PARTNER Expenditures (US\$ million)

Economic Code	Description	IDA & IFAD	GoB	Total	Percent
A. Capital Expenditure					
21111	Residential buildings	0.0	20.4	20.4	1.5
41112	Buildings other than dwellings	65.5	132.8	198.3	14.8
41113	Other structures	23.4	75.9	99.3	7.4
41114	Land improvements	5.2	59.8	65.0	4.8
41121	Transport equipment	27.5	5.2	32.7	2.4
41122	Machinery and equipment other than transport equipment	11.8	10.3	22.1	1.6
41123	Machinery and equipment not elsewhere classified	65.4	119.6	185.0	13.8
41133	Computer software and databases	2.3	3.9	6.2	0.5
Sub Total		201	428	629	46.8
B. Operating Expenditure					
31111	Officers' pay	2.8	11.4	14.3	1.1
31112	Staff's pay	0.5	6.3	6.8	0.5
31113	Allowances	1.1	10.4	11.5	0.9

⁵³ US\$20 million in matching grants with a co-financing ratio for entrepreneurs of 30 percent (i.e., US\$6 million).



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32111	Administrative Expenses	19.7	47.7	67.4	5.0
32411	Domestic travel and transfer	3.0	3.4	6.4	0.5
32211	Fees, charges and commissions	1.4	2.3	3.7	0.3
38211	Other miscellaneous expenditure ⁵⁴	0.1	1.3	1.4	0.1
32431	Petrol, oil and lubricants	10.7	8.4	19.1	1.4
32551	Printing and stationery	4.3	3.4	7.6	0.6
32561	General supplies and materials	2.5	40.7	43.2	3.2
32312	Domestic training	53.4	73.2	126.6	9.4
32311	Foreign training	35.8	5.1	40.9	3.0
32511	Agriculture supplies	49.7	64.9	114.6	8.5
32541	Food supplies	5.8	0.4	6.1	0.5
32571	Professional services	86.9	44.7	131.5	9.8
32581	Repairs and maintenance	24.0	26.4	50.4	3.8
36321	Capital grants	30.5	5.6	36.1	2.7
32573	Special expenses (contingency)	8.2	15.7	23.8	1.8
32521	Medical and surgical supplies	0.0	0.0	0.1	0.0
32572	Honorarium and special expenses	1.6	0.9	2.4	0.2
Sub Total		342	372.0	714	53.2
TOTAL (A+B)		543.0	800.0	1,343.0	100.0
C. Private Sector Investment				140.0	
GRANT TOTAL (A+B+C)				1,483.0	

Source: Bank staff compilation based on the data provided by counterpart

5. **The Program is expected to mobilize US\$140 million of private capital for the program**, from producers, input suppliers, and entrepreneurs. Expenditures related to private capital mobilization are, however, not considered eligible expenditures.
6. **PARTNER is backed by an adequate government expenditure framework and the composition of the estimated expenditures is well justified**. As shown in the Assessment Summary section above, past and projected allocated budgets to the MoA and the seven IAs indicate that there will be a consistent and sustainable flow of funds to the IAs perform Program activities during its implementation. The Assessment Summary also shows that the composition of expenditures is consistent with the Program's intended results and Table 5 provides more information on topline budget lines of PARTNER expenditures.
7. **IAs have a good track record of executing development programs**. Each year, 85 percent of the annual development programs (ADP) implemented by the MoA are executed by the seven IAs. For instance, the IAs executed 71 of the MoA's 85 ADPs in FY 2020-21 and 59 of the 70 ADPs in FY 2021-22. According to the ADP implementation progress report, the MoA implemented 98 percent of the ADPs in both FYs, despite the COVID-19 pandemic.
8. **The execution of the indicative expenditures by BRRI and DAM may be challenging**. During the upcoming five FYs, the IAs will be budgeted US\$3.265 billion through the national budget. Under PARTNER, the IAs will be allocated an additional US\$673 million, which is 20.6 percent over the projected budget allocation. While executing such an additional budget is plausible overall,

⁵⁴ Other miscellaneous expenditure under the Budget and Accounting Classification System code 38211 refers to expenditures that are not elsewhere classified and includes, among others, land development tax, municipal rate and taxes, seeds and horticulture, insurance, and so on.



incremental budgets for BRRI and DAM account for 99 percent and 84.3 percent of their projected regular budgets, respectively.

9. **IAs have sufficient capacity to carry out their planned activities and achieve intended results.** The budget execution rate for all IAs exceeds 90 percent, except DAE (82 percent). For DAE, during COVID-19 (FYs 2019-20 & 2020-21), the execution rate fell compared to pre-COVID-19 (FY 2018-19), which is explained by the nature of DAE's work, as reduced mobility greatly affected extension service delivery.
10. **The MoA and the IAs have identified priority spending areas for upcoming years:** (i) research to increase the production of rice and non-rice crops; (ii) production of quality seeds; (iii) extension for the adoption of improved crop production technologies by farmers (training, demonstrations, field days, rallies, fairs, media publicity); (iv) optimal use of surface water; (v) dissemination of information and communication technology at the field level; and (vi) optimal use of organic fertilizers in crop cultivation.
11. **The flow of expenditures to the sector will continue even after PARTNER.** As shown in the Assessment Summary, past trends of the MTBFs show that the fiscal sustainability of the government program will be maintained even after the closing of the Program.

3. Program Economic Evaluation

a. Rationale for Public Provision and Financing

12. **There is a strong rationale for public provision and financing for PARTNER.** Overdependence on rice for food security, low productivity levels, and fast-changing diets require the country to embrace a new phase of transformation for the agriculture sector. The Program will support the GoB in addressing these challenges by improving productivity and promoting crop diversification, while improving FS along the VC. This will require investments in public goods, such as in R&D, FS infrastructure, and extension services, areas in which the PS is not in a strong position and has few incentives to engage. However, through the adoption of adequate policy and regulatory frameworks, the Program will facilitate private investments in areas such as quality seed research, production, and distribution.
13. **PARTNER will contribute to a more coordinated approach.** Challenges to provide inclusive growth opportunities, including for women and youth, and to attain nutritional security for a growing population—while dealing with climate change impacts—require a coordinated approach. PARTNER will strengthen the sector's performance in terms of activity planning, coordination and monitoring, and results tracking and reporting. Establishing a sector-wide MIS will contribute to evidence-based policy making and promote repurposing when needed to achieve the GoB's sector development goals.

b. PARTNER's GHG Analysis and Economic Impact and Evaluation

14. **The Program is a net carbon sink compared to the without project (WO/P) scenario of -59.2 million tCO₂e emissions over 20 years, and about -2.9 million tCO₂e emissions per year.** However, gross emissions are positive, and the project would emit 126.3 million tCO₂e over 20 years. Improved water management in irrigated rice has the largest mitigating effect, with about -87.8 million tCO₂ emissions followed by improving management of annual crops and horticulture produce (i.e., net carbon sink of -15.2 million tCO₂e emissions compared to WO/P scenario) and by growing perennials (i.e., about -10.4 million tCO₂e emissions). The large carbon sink for crop management is based on the assumptions that 50 percent of land under annual crops is enriched with manure leading to high



carbon content. In contrast, conversion of land use from irrigated rice to annual crops and perennials – which disturbs the soil – leads to a net carbon source of 39.4 tCO₂e emissions. Changes in aggregated fertilizer use leads to a net carbon source of 16 million tCO₂e, as changes in synthetic fertilizer due to changes in land use from irrigated rice to crops and horticulture should lead to a net carbon sink of -5.05 million tCO₂e emissions. However, compost/manure is expected to increase by 50 percent, which leads to a net carbon source of 18.6 tCO₂e emissions. It should be considered that the positive effect of increasing soil carbon through manure application has already been considered through improved crop management. The use of certain pesticides is likely to increase, leading to a net carbon source of 1.1 tCO₂ emissions. Energy use from VC activities has not been included in the analysis.

15. **PARTNER investment will increase Bangladesh GDP by 0.31 percent.** The SAM simulation exercise utilized the latest available SAM for Bangladesh (2017 data), which consists of 219 accounts. The simulation exercise injects a lumpsum amount of BDT 67.3 billion (US\$673 million) into the exogeneous investment account for the agricultural sector. For this specific simulation, the GDP multiplier is 1.57, which implies that one million BDT of extra investment in the agricultural sector will lead to BDT 1.57 million of additional GDP. While the Program's investment will add to agricultural GDP growth, other sectors of the economy will also experience GDP growth, as the agricultural sector has strong forward and backward linkages. Among the expected additional GDP, 80.6 percent will be from agriculture, 7.2 percent from manufacturing, and 12.2 percent from services.
16. **PARTNER yields an EIRR of 33 percent and an ENPV of US\$1.902 billion.** A 20-year cash flow model is used to assess ex-ante efficiency of the Program's investment. Annual cash flows are estimated as the difference between with project (W/P) and WO/P net benefits. The analysis focuses on rice productivity increase and crop diversification, which benefit from the adoption of GAP and more efficient irrigation technologies, increased access to extension services and market information for better on-farm decision making, and increased investment on agricultural research for the development of new HYVs and production packages. It is assumed that PARTNER will increase productivity in 98,932 Ha of Boro area, 296,796 Ha of Aman area, and 98,932 Ha of Aus area. In addition, PARTNER will contribute to convert 494,659 Ha of Boro area into non-rice crops (maize, lentil, potato, tomato, eggplant, mango, and banana). Detailed crop budgets were constructed using the Bangladesh Integrated Household Survey for 2018-19 to estimate the WO/P situation. The W/P situation crop budgets were adjusted according to fertilizer use and yield data from BARC⁵⁵ and a WB study.⁵⁶ The Yearbook of Agricultural Statistics 2020 provided information on rice yields per season and seed variety for consistency checkup, and on crop area for project aggregation.
17. **Placing a monetary value on the GHG mitigation benefits increases the EIRR to 39 percent.** As recommended by the WB,⁵⁷ the economic analysis of the Program was also conducted with the shadow price of carbon. For the low-price scenario, the analysis assumed a shadow price of carbon of US\$43 per tCO₂eq for 2023, reaching US\$65 at the end of the 20-year period. In the case of the high-price scenario, the carbon price started at US\$86 (2023) and reached US\$131 by 2042. Compared to the baseline, the EIRR for the low-price scenario is 6 percentage points higher and it reaches 47

⁵⁵ Bangladesh Agricultural Research Council. 2018. Fertilizer Recommendation Guide-2018.

⁵⁶ Madhur Gautam and Rashid Faruqee. 2016. Dynamics of Growth in Bangladesh: Sustaining Poverty Reduction. The World Bank.

⁵⁷ Guidance note on shadow price of carbon in economic analysis. November, 2017.



percent for the high-price scenario. This does not include the effects of VC activities or job creation initiatives for women and youth.

18. **Program interventions can help increase annual farm income significantly.** Through the promotion and adoption by farmers of high-quality seeds, GAP/IMP/CSA practices, increased mechanization, and a more efficient use of inputs, especially that of fertilizers, crop yields and profitability could increase from three (maize) to twelve folds (eggplant). In the case of Aus rice, which currently shows negative profitability (considering family labor costs), the Program can reverse that situation and make Aus rice production profitable (US\$300 per Ha). In the case of lentil, even though the NAP PoA states the intention to convert 400 000 Ha of Boro rice into pulses (lentil, chickpea, and grass pea), it was found that, in economic terms and on average, lentil profitability is lower than that of W/P Boro rice. Thus, during Program implementation, specific technologies for specific regions should be properly assessed in terms of financial and economic profitability. It is worth noting that the model makes conservative assumptions in terms of yield increases and technology adoption rates. Thus, farm income figures could be higher.
19. **PARTNER is quite robust to sensitivity analysis.** Sensitivity analyses were conducted to assess the impact of changes in key parameters such as international prices of rice, non-rice crops, and fertilizers, and technology adoption rates. The results show that the Program is robust to changes in international prices of rice and non-rice crops and of fertilizer. A 20 percent decline in the international price of rice and non-rice crops simultaneously taking place with a 20 percent increase in international fertilizer prices reduces the EIRR to 24 percent and the ENPV to US\$897 million. However, the Program is sensitive to technology adoption rates. Reducing the adoption rate to half the baseline rates (from 15 to 7.5 percent in Year 1, and 70 to 35 percent in Year 5, for example) can significantly reduce the EIRR to 19 percent (which is still 4 percentage points above the discount rate) and ENPV to US\$333 million. Adoption rates used in the baseline are in fact conservative. Al Mamun et.al. (2021)⁵⁸ found that HYV adoption rate has increased over time, reaching 72 percent for Aus, 73.5 percent for Aman, and 98.4 percent for Boro in 2019-20. Using a discount rate of 10 percent (instead of 15 percent, as suggested by the GoB) yields an ENPV of US\$3.280 billion.
20. **PARTNER could yield significant additional returns.** Additional potential net benefits (increased women and youth employment, increased farmer's income due to improved product quality and reduced post-harvest losses) were not considered in the model.

c. WB's Added Value

21. **Value added of the WB's support.** PARTNER investments have the potential to generate significant economic benefits and improve farmers' incomes and food and nutrition security in Bangladesh. In addition, the WB's support will help in the exchange of new knowledge based on both its long-term engagement in Bangladesh on agriculture-related issues, as well as its vast global experience in implementing agricultural and rural development programs and projects. WB's involvement will help expose the MoA and the IAs to the international experience in agricultural productivity growth, diversification, appropriate-scale mechanization, GAP/IMP/CSA practices, VC integration, and so on. The WB can also draw on successful lessons learned in WB-supported projects in the country such as NATP-2, the Modern Food Storage Facility Project and its additional financing, the Nuton Jibon

⁵⁸ Al Mamun M.A. et.al. 2021. Growth and trend analysis of area, production and yield of rice: A scenario of rice security in Bangladesh. PLoS ONE 16 (12).



Livelihood Improvement Project, the Sustainable Coastal & Marine Fisheries Project and the Livestock and Dairy Development Project, including three recently approved operations: the Climate Smart Agriculture and Water Management Project, Bangladesh Meteorological Information System, and the Resilience, Entrepreneurship and Livelihoods Improvement Project. PARTNER will also benefit from the findings and recommendations of the WB's analytical work carried out in recent years, such as *Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities, 2020*; *Climate Smart Agriculture Investment Plan, 2020*; *Bangladesh Rural Income Diagnostic Study, 2021*; and *Dynamics of Rural Growth Study, 2016*.

4. Technical Risk Rating

22. **The technical risk of PARTNER is “Substantial”.** The Program is designed to implement key elements of the GoB’s strategy for agriculture development. Thus, the design is not only comprehensive and supports the country’s agricultural production system and its VCs, but it also fits the country’s diversified and challenging context. Furthermore, PforRs are new to the MoA, which will require significant technical assistance to the IAs. Seven IAs will be responsible for the implementation of the Program, which will demand extraordinary coordination efforts. This risk will be mitigated through (i) support of consultants and technical experts to the PCU for the coordination of the IAs; (ii) mainstreaming capacity building within the PAP; and (iii) the establishment of a sound monitoring and reporting system.
23. **The technical risk of PARTNER’s intervention in seed markets will require special attention.** A recent assessment of four key areas (seeds, FS, social safety nets, and nutrition)⁵⁹ by the United States Agency for International Development (USAID) identified the following key constraints in the seed market: (i) research institutes are often unable to meet market demand, leading to shortages and sub-optimal use by farmers of saved seed; (ii) institutes do not have incentives to maintain BS germplasm purity; (iii) many farmers use old varieties and many institute-released new varieties are of little interest to farmers; (iv) the GoB continues to furnish rice and other seeds at heavily subsidized prices, making it difficult for the PS to compete; (v) market surveillance is uneven, with very few agents and inadequate lab capacity, which leads to concerns among farmers about being sold fake or expired seeds; and (vi) regulation can stifle innovation and PS activity. In addition, during PARTNER’s implementation, some sophisticated machineries, lab equipment, and infrastructure will be procured for the research that BRRI and BARI will conduct. BRRI and BARI scientists may not be able to install or operate such equipment, posing an additional risk for implementation. PARTNER addresses several of the above issues. The Program will train scientists to operate lab equipment. It greatly emphasizes the strengthening of improved seed production and distribution, as well as farmers’ access to quality seeds. The Program will also develop a policy framework to foster PS’s participation in the seed system. Additional risk mitigation actions such as improving market surveillance and overall seed quality may need to be undertaken.
24. **PARTNER will need to ensure well-functioning extension services.** Agricultural extension services – both public and private – play a critical role in getting farmers to adopt new seeds, use inputs in a way to ensure FS, and plant diversified crops needed for proper nutrition. The above-cited USAID assessment found that (i) less than 5 percent of farmers are visited annually by GoB agriculture agents;

⁵⁹ USAID. 2020. Bangladesh Policy and Regulatory Assessment to Inform the New Agricultural Policy Activity.



however, when visits did occur and seeds were discussed, farmers found the information useful; (ii) GoB agents tend to favor larger farmers in scheduling visits; (iii) women are hardly ever visited; (iv) GoB extension agents' efficacy is undermined by bifurcated reporting structures (DAE and district/local political heads); (v) GoB's extension agents are not university graduates; and (vi) there is limited formal interaction between GoB and private extension agents. PARTNER will address most issues identified by the USAID assessment, as the Program will strengthen extension service capacity (i.e., training, e-extension, market-led extension), design, operate a digital agricultural extension platform, and foster PS's participation in extension services. The Program will ensure that women farmers and small farmers have access to extension services. Additional measures to create synergy among GoB and PS extension agents, and to prevent GoB extension agents from being diverted from their role of delivering extension services will be needed.

25. **PARTNER's intervention in an innovative area such as the provision of digital agricultural services will require several risk-mitigation measures.** PARTNER proposes digital agriculture service use cases involving e-vouchers, e-extension, financial services, and market linkage services delivered via the KSC and various applications, using public and private platforms. Risks of delivering digital services to small farmers include (i) not addressing the digital divide in an effective manner, favoring large and medium farmers as smallholders are less attractive clients when it comes to innovations; (ii) not including or appealing to women farmers; (iii) insufficient farmer-centered digital services; (iv) missing out on data governance; and (v) government and public national and international institutions lagging behind the fast-moving digital transformation in the agriculture sector driven by PS. Mitigation measures that can overcome these risks involve (i) establishing digital building blocks such as farmer registries, digital literacy, improved access to feature/smart phones, and increasing rural connectivity; (ii) adopting global best practices on equitable gender design (e.g., including women in user experience research, sensitizing male heads of households to women using digital agriculture services, designing content catering to women-specific agriculture needs, collecting gender disaggregated data and developing a business case for women inclusion); (iii) producing evidence-based answers to difficult design questions (e.g., does the Program value proposition resonate with farmers? Will the go-to-market plan lead to farmer adoption? Are the extension and advisory content or financial services use cases relevant and exciting enough to farmers to lead to behavior change?) through careful consideration for agile user experience research and service design (design, testing and iteration); (iv) managing data as a precious asset with a focus on equity and fair distribution of benefits. Promoting open data related to digital agriculture allows to provide a public good that will greatly improve the delivery of digital agriculture services; and (v) conducting needed public interventions with measures ranging from improved laws and regulations, awareness building and demonstration of new technologies, rural digital infrastructure, promotion of digital SME/start-ups and human capital development.

5. Summary of the Program's contribution to climate adaptation and mitigation

26. A separate *PARTNER: Climate Change Technical Note* elaborates climate risks and vulnerabilities and PARTNER's contribution to climate resilience, adaptation, and reduction of GHG emissions in Bangladesh's agriculture sector. Key climate actions include:
- a) In RA1: (i) support towards crop diversification to build resilience to extreme weather events; (ii) development and dissemination of submergent resistant, short-duration, salinity- and stress tolerant HYV; and (iii) support to the adoption of improved irrigation technologies to build



resilience to water scarcity. Building capacity for improved and balanced fertilizer use, supporting the planting of perennials, and adoption of energy-efficient irrigation technologies can reduce GHG emissions.

- b) In RA2: (i) introduction of an e-voucher system, which facilitates access to climate-resilient seed varieties, technologies, and extension; (ii) introduction of testing processes to build resilience to climate-exacerbated food safety risk; and (iii) trainings on climate risks, resilience, and opportunities for mitigation for youth and women entrepreneurs.
- c) In RA3: (i) support for research on resilience-building technologies, which is a key priority in Bangladesh's agricultural research system; (ii) raising awareness about climate risks, resilience, and mitigation, such as reducing food loss and waste, of members of VC promotional bodies; and (iii) introducing agrometeorological information in agricultural information systems. Resilience-building and energy-efficiency in public buildings will be ensured in RA2 and RA3.

**ANNEX 4. (SUMMARY) FIDUCIARY SYSTEMS ASSESSMENT**

1. The IFSA's objective is to conclude whether the Program's fiduciary systems provide reasonable assurance that the financing proceeds will be used for intended purposes, with due attention to the principles of economy, efficiency, fit-for-purpose, value for money, integrity, transparency, and fairness. The IFSA comprises separate assessments of the risks and mitigation measures relating to the Program's procurement, FM, governance, and corruption aspects.
2. The WB's ACG for PforRs (2016) shall be applicable for the Program. The responsibility for ensuring compliance with the WB's ACG, including reporting to the WB, rests with the MoA and its subordinate IAs. The borrower's anti-Fraud and Corruption systems were assessed as part of the IFSA in the agriculture sector. The IFSA provides an understanding of risks and resulting mitigation measures.
3. The five-year Program cost is estimated to be US\$1,483 million. Based on IFSA, it is concluded that the Program Fiduciary Systems are adequate. The successful implementation of the fiduciary action plan stated in the IFSA would provide reasonable assurance that the financing proceeds will be used for intended purposes.
4. Based on the assessment and due consultation with the seven IAs and other stakeholders, a PAP focusing both on risk mitigation and capacity building was agreed (Annex 6). The implementation PAP will be reviewed periodically during Program implementation. The mitigation plan includes (i) preparing IA-wise fund flow planning as per the Annual Work Plan schedule and ensuring that budget is allocated and released to off-treasury entities as per implementation plan; (ii) mainstreaming iBAS for recording and reporting Program expenditure for all IAs, and preparation of Program financial statements; (iii) ensuring on-granting arrangement with the off-treasury IAs for the downstream fund flow preferably through iBAS and release to ensure funding is available on time at the spending center; (iv) arranging training on iBAS++ in coordination with Finance Division (FD) for the designated FM persons of IAs; (v) monthly reconciliation between IAs and the Chief Accounts and Finance Officer within seven working days of the following month; (vi) developing and implementing an internal audit modernization plan for BADC, BRRI, BARI and BMDA that includes issuance of a Model Internal Audit Charter and risk-based internal audit manual; (vii) certifying training on FM and procurement for staff in all IAs through at least one-week formal training on procurement and FM and also deploying on full-time basis an adequate number of own qualified staff having prior experience in government procurement and FM.
5. IAs will leverage fiduciary capacity enhancement interventions under the ongoing Strengthening Public Financial Management Program to Enable Service Delivery PforR on Public Financial Management reform. This includes (i) finalization and approval of model internal audit charter and risk based internal audit manual; (ii) analysis of options for recruitment of Internal Auditors and decision on the right mix of expertise and sourcing by FD; (iii) sensitizing all selected Ministries, Departments, and Agencies on the formation of Internal Audit Units; (iv) FD establishing a system for annual procurement planning and post-review and training on the system conducted in FD; (v) timely and reliable payments of salaries and vendor invoices with a strengthened Treasury Single Account and automated payment system; and (vi) enabling budget holders in Ministries, Departments, and Agencies to effectively and transparently use financial information from iBAS++.



6. The IDA funds will be disbursed to the government Single Treasury Account (Consolidated Fund) upon submission of withdrawal applications for DLI advances and results on verification of achievement of DLRs. Funds are expected to be spent from the Treasury account by the IAs. The government will reach on-granting agreements with off-treasury IAs to ensure fund flow to Program spending centers and reporting arrangement of Program expenditure. DAE being the main coordinating agency would submit the withdrawal applications for DLI/DLR advance and DLI/DLR values for each DLI/DLR of the Program upon achievement of DLI/DLR. The PoA of the NAP was developed for an initial five-year period from 2021 to 2025 while the NAP, like previous agricultural policies, provides policy orientations for ten years, from 2018 to 2028. PARTNER will be implemented from 2023 to 2028, with a total budget of US\$1.483 billion. IDA and IFAD will contribute with US\$500 million and US\$43 million, respectively, while GoB will contribute US\$800 million and the private sector US\$140 million. The GoB's contribution comes from the available budget of the MoA's ongoing and approved programs that are aligned with PARTNER's RAs (US\$669.9 million) and from an incremental contribution of US\$130.1 million.

7. The economic code of the Program will be included in the Financing Agreement to define the Program boundary that will be used for reconciliation of Program expenditure at the closure of the Program, and audit of Program financial statement. The counterpart will share the unique Program code of PARTNER and bank account details for disbursement before submission of first withdrawal application. The Detailed Project Pro forma of PARTNER is under preparation by GoB. The counterpart financing from GoB will also be included in the 9-digit Task/Scheme/Program, unique code for PARTNER that will be used by all IAs. The inclusion of all Program activities undertaken by the seven IAs in the unique Program code will enable effective monitoring of utilization of Program budget by each IA.

8. Program financial statement will be generated from iBAS++ against the unique Program code, which will be assigned within three months of effectiveness. After the Program period, reconciliation of the Program's total eligible expenditures (US\$1,343 million)⁶⁰ against disbursements under IDA financing of US\$500 million and IFAD financing of US\$43 million will be conducted. In case of underutilization of total Program budget (i.e., IDA disbursement exceeding total Program expenditure, excluding IFAD's disbursement), the counterpart will have to refund that shortfall after the end of the Program period. A similar approach for reconciliation and refund for shortfall applies for IFAD's part of disbursement.

9. The Program's audit will be carried out by the Comptroller and Auditor General constitutionally appointed by the President. Currently, there is no overdue audit report from any of the IAs under PARTNER or any other IA/project implementation unit under the MoA for any ongoing /closed Bank operation. The audit report is to be submitted within nine months of the end of the financial year.

10. The Program is not expected to include any large contracts valued at, or above, the Operation Procurement Review Committee thresholds. The Program will also exclude activities that are likely to have significant adverse impacts on the environment and/or affected people. The IAs will report to the WB if any large contracts appear during Program implementation. The WB will also monitor fiduciary systems and contract management reports to identify any large value contracts throughout implementation.

11. *Utilization of grants:* As per the expenditure framework there is an allocation under Capital grant (36321). The expenditure under grant will be considered as expenditure only after utilization of the grants by the Recipient.

⁶⁰ Expenditures related to private capital mobilization (i.e., US\$140 million) are not considered eligible expenditures.

**ANNEX 5. SUMMARY ENVIRONMENTAL AND SOCIAL SYSTEMS ASSESSMENT**

1. The MoA is preparing PARTNER for financing from IDA under a PforR. The Program aims to support a transformational shift of agriculture in support of diversification towards high-value crops, ensuring food and nutrition security, and building long-term sector resilience to climate change in line with the NAP. It also aims at empowering women's role in agriculture and increasing job opportunities for the youth, as well as increasing the volumes of quality and safe produce marketed in the country, crowding in the PS as much as possible. The objective of the proposed Program is to promote diversification, FS, entrepreneurship, and resilience in the agrifood systems of Bangladesh. The Program will increase food quality and certification through the adoption of food standards for primary producers and the establishment of accredited testing facilities. The Program will contribute to improving market integration through productive alliances between producer organizations and off-takers. This will also contribute to the reduction of current substantial post-harvest losses.
2. The Program will use the national system for implementation, FM, procurement, E&S safeguards, monitoring and oversight, and reporting arrangements. All Program activities will be integrated in the corresponding line agency for implementation and each IA, including BRRI, BARI, BARC, DAE, DAM, BADC, and BMDA, will set up an APCU. A PSC will guide Program implementation. The PD heading the PCU at DAE will lead the overall Program management including overseeing implementation of Program activities, carrying out Program management functions, facilitating coordination among IAs, and liaising with the WB on all Program implementation related aspects.
3. The Program will support a part of the overall government program (PoA of NAP). The ESSA provides a comprehensive review of relevant government systems and procedures for addressing E&S issues associated with the Program. The ESSA describes the extent to which the government's E&S policies, legislation, program procedures, and institutional systems are consistent with the six 'core principles' of the WB Guidance⁶¹ on E&S management in PforR operations. The assessment recommends actions to address the gaps and to enhance performance during Program implementation.
4. The ESSA has identified potential risks and opportunities and assessed the compatibility of the Program with respect to the core principles. MoA has considerable experience in executing WB-financed projects, with demonstrated capacity in managing E&S risk for similar activities. The Program will exclude any activity that may have significant adverse E&S impacts and are sensitive, diverse, or unprecedented.
5. Overall E&S Risks of the Program are assessed to be 'Moderate'. The Program activities have no significant and irreversible impacts on environment and the associated risk is rated as 'Moderate'. The construction of infrastructure would be limited to renovation, repair, and modernization of various facilities within the existing complexes housing the IAs, where limited number of labor force would be employed. As such, the risk would be minimal, effects would be localized and could be mitigated in situ by the contractors employed. There will be no land acquisition or involuntary resettlements. Risks of social discrimination, GBV, and SEA/SI are also low. Thus, the social risk is rated as 'Moderate'. An E&S screening was carried out to identify E&S risks and impacts with respect to contextual, institutional, capacity, and reputational risks facing the Program.

⁶¹ WB Guidance on Program for Results Financing Environmental and Social Systems Assessment (Annex-C)



6. Potential investments may include small and medium scale civil and construction works, use of digital technology, pest management using naturally tolerable pesticides/herbicides for HYV and other crop diversification efforts, promoting improved and efficient irrigation facilities, establishment of “Technology Villages”, testing laboratories, training, research, market linkage, youth engagement, and piloting motivational incentives. The anticipated E&S impacts are mostly localized and reversible and can be mitigated through proportionate management and mitigation measures. The PIP will be developed at Program commencement and followed also for E&S Guidelines and a subsequent ESMF including ECoP and social management procedures will be developed for the Program at the early stage of implementation. The PIP will be updated when the Program ESMF will be adapted.

7. The IAs manage E&S impacts following the national regulatory framework and policies in the regular operations and projects with finance from the government's own resources. In case of international finance in their projects, they develop and implement project specific ESMPs following the E&S compliance requirements of the international finance institutions to supplement the gaps of the national ESMS. The involvement of multiple IAs including research organizations with their low capacity to manage E&S risks is noted and will be addressed in the PAP.

8. Overall, the ESSA found that the country's E&S policies and legal framework applicable in the agriculture sector are largely compatible with the E&S core principles for WB PforR finance. However, the ESSA recommends several measures under the Program to address institutional capacity constraints and gaps within the IAs across a range of ESMS limitations including policy principles and institutional setup. These measures are summarized as E&S actions incorporated in the PAP. Specific recommendations were made to address the identified risks, gaps and needs in the ESSA. These measures for improvement of the ESMS have been discussed with the MoA and the seven IAs.

ANNEX 6. PROGRAM ACTION PLAN

Action Description	Source	DLI#	Responsibility	Timing		Completion Measurement
Establishing and operating Program ESMS	Environmental and Social Systems		PCU/DAE	Other	Within three months after effectiveness	ESMF and other E&S management tools (Environmental and Social Impact Assessment, ESMP, Pest Management Plan, Labor Management Plan, and Gender & GBV Prevention Plan) are rolled out and integrated in the E&S Program Operations Manual.
Strengthening Program E&S management	Environmental and Social Systems		PCU and all IAs	Recurrent	Yearly	Trainings on E&S risk & impact mitigation, labor management, GBV risks & incidents, stakeholder engagement and GRS issues are conducted. The subcontractors & labor contractors are trained about E&S compliance.
Development of corporate ESMS	Environmental and Social Systems		MoA and all IAs	Other	Within three months after effectiveness	Corporate ESMS prepared, approved by MoA and operationalized across MoA and its organizations. Measures taken for establishing an Environmental, Social and Communications Unit at MoA/DAE with relevant desks at the IA institutions.
Facilitating E&S compliance monitoring and reporting	Environmental and Social Systems		DAE/MOA and other IAs	Recurrent	Continuous	Daily record of community engagement, participation and grievance resolution including site supervision issues associated with Program activities at IAs' sites and local offices. Quarterly E&S Monitoring Reports and site-specific E&S tools prepared.
Ensuring efficient budget execution and accurate institutional reporting arrangements	Fiduciary Systems		PCU/DAE and all IAs	Due Date	30-Jun-2023	iBAS/iBAS++ is mainstreamed for recording & reporting Program expenditure for all IAs.
Improving timeliness & effectiveness of audits (internal and external)	Fiduciary Systems		MoA	Other	Within three months after effectiveness	Comptroller and Auditor General is provided with capacity building support; and it submits the Program External Audit Report by March 31st each year. An internal audit modernization plan is developed and implemented.

Strengthening the procurement and FM capacity of the staff	Fiduciary Systems	PCU	Other	Within three months after effectiveness	Training on FM & procurement for staff is certified. One-week formal training on procurement and FM is provided in all IAs. Prepared FM operation manual and risk management manual. Deploy at all times adequate number of qualified staff in all IAs.
Establishing and operating M&E systems at the Program level	Technical	PCU and all IAs	Other	Within three months after effectiveness	Develop a comprehensive M&E plan and Manual. Establish well-functioning M&E system. Hire the required staff at PCU and APCU level. Develop reports formats for M&E reports to be generated on monthly, quarterly and annual basis.
Facilitating compliance of M&E as per the M&E manual developed	Other	All IAs	Recurrent	Continuous	Regular monitoring on monthly, quarterly and annual basis. Develop reports as per the report formats developed in the manual.
Strengthening M&E systems	Other	All IAs	Recurrent	Continuous	M&E officer at the PCU to provide capacity building training to staff at APCU level. Field level staff of the Implementing Agencies provided capacity building training, wherever necessary.
Ensuring adequate procurement reporting arrangements	Fiduciary Systems	PCU/DAE and all IAs	Recurrent	Yearly	A copy of the annual procurement performance report prepared under the GoB's own system for monitoring procurement performance by the IAs under the Program should be submitted for the Bank's information and supervision within 60 days of FY end.
Reporting fraud and Corruption related complaints	Fiduciary Systems	All IAs through DAE	Recurrent	Semi-Annually	A semi-Annual report is consolidated and shared with the Bank every 6 months for the duration of the Program