



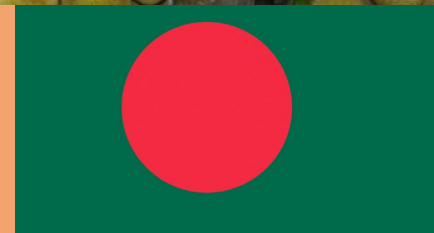
Food and Agriculture Organization  
of the United Nations



**Hand-in-Hand**  
Initiative

Investment Forum | Rome, Italy | 18-19 October 2022

**Bangladesh**  
for Investment Forum



# Outline

**1**

**Bangladesh Agriculture  
Overview**

**2**

**Enabling environment**

**3**

**Investment plan and  
opportunities**

# Section 1: Bangladesh Overview



**165M**

Population (BBS 2022),  
8<sup>th</sup> highest  
Pop density 1,113 per Km<sup>2</sup>



**USD 71B**

national budget for  
2022-23 (12% higher  
than previous year)



**USD 5.8B**

processed food market  
by 2030\*



**47%**

household income is  
spent on food now

Per Capita Income is USD 2824 (current price) in 2021-22 (a threefold increase in last decade)

GDP growth rate is 7.25% (2021-22). Currently, 41<sup>st</sup> largest economy (GDP USD 463B) in the world

Attained lower middle income country status in 2015, LDC graduation by 2026

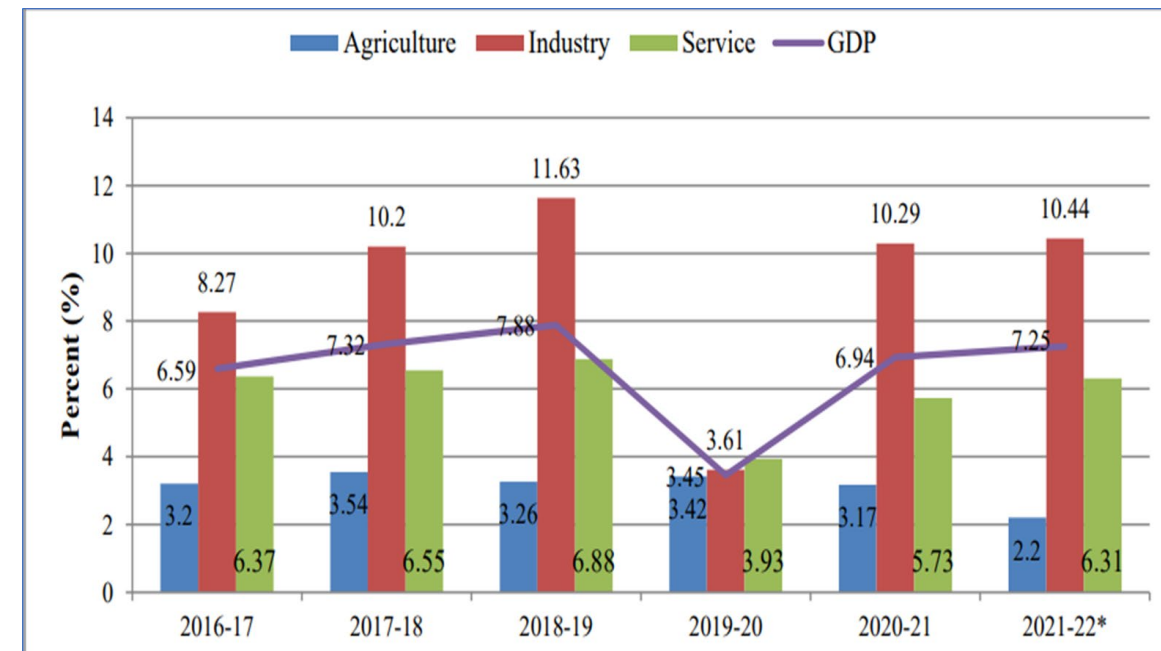
Vision of attaining upper middle-income status by 2031, high income country by 2041

Poverty rate reduced by half: 20.5% in 2019, down from 40% in 2005

Prevalence of undernourishment 11.4% in 2019-21 declined from 15.9% in 2000-2002

10/6/2022

Broad Sectoral GDP Growth at Constant Prices



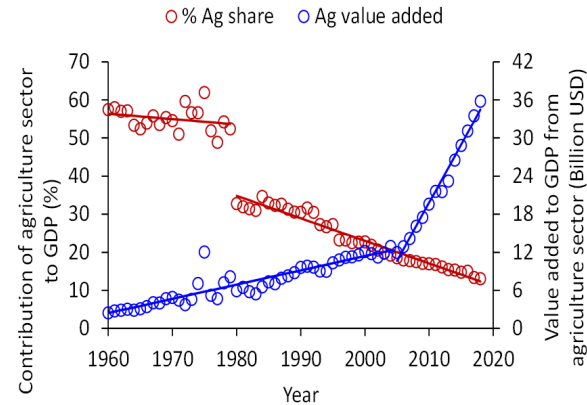
Source: Bangladesh Bureau of Statistics 2022; Bangladesh Investment Development Authority;  
\*Foreign Investors Chamber of Commerce & Industry publication

# Agriculture Sector- Employment and Economic Transformation



~13%  
Agriculture  
contribution to GDP

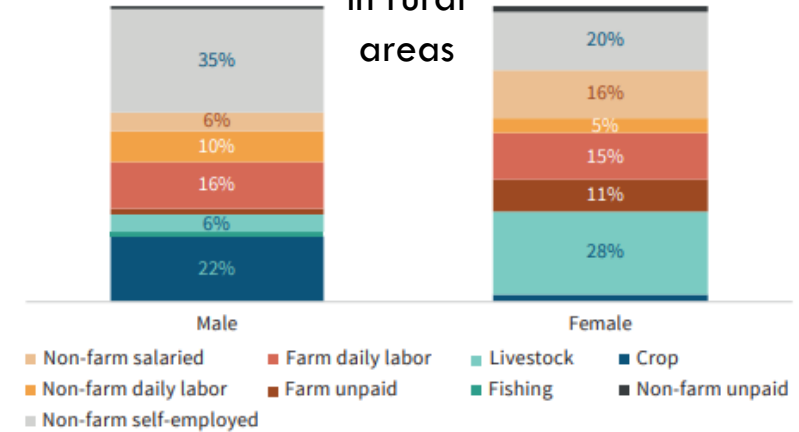
Agriculture share to GDP & value added to GDP from agriculture



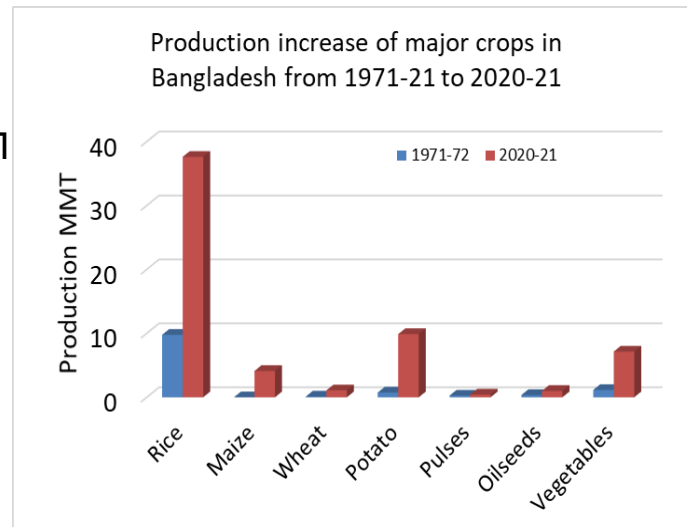
37%  
National labor force in  
agriculture

Types of employment for rural people

70% people  
live  
in rural  
areas

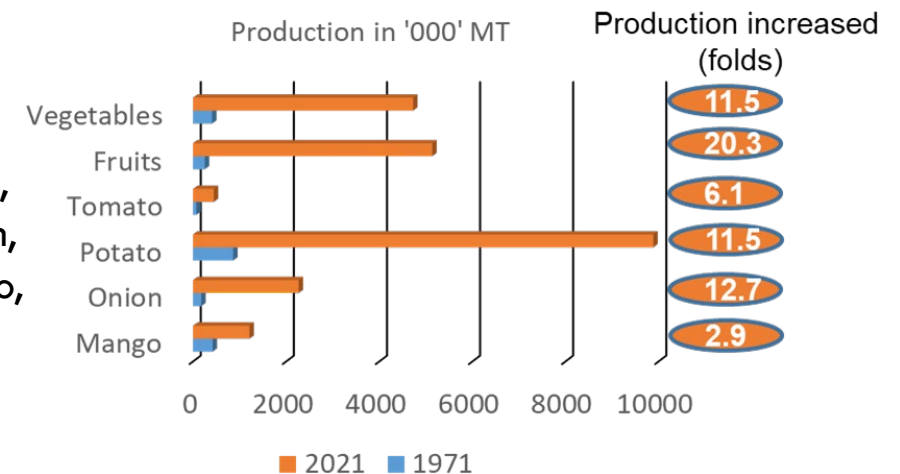


Increase in production of major crops



Bangladesh among  
Top 10  
producers of rice, jute,  
jackfruit, mango, onion,  
tea, vegetables, potato,  
farm fish

Production of fruits and vegetables  
increased several folds



3.7 times  
Rice production  
increased since 1971

# Agriculture Sector Challenges and Opportunities

## Challenges

- 85% of total farmers are small-holders
- Climate change with extreme climatic events (cyclones, tidal surges)
- Water management issues: drought, flood, salinity, and water logging

## Opportunities

- Dynamic and resilient agricultural human resources
- Abundant natural resources:
  - fertile land (7.77M hectare of arable land- 58.2% of total land)
  - water resources (700 rivers, tributaries, and thousands of canals)
  - adequate rainfall (2,200 mm annually)
  - sunlight (daily solar radiation 4-5 kWh/m<sup>2</sup>)
  - Agro-climatic suitability for year-round crop production
- Dynamic research system across the country (17 Agri-based research institutes)
- High potential for export market (export of agro-products doubled in last 7 years)

# Enabling Infrastructure and Fiscal Policy



**Building of 100 Special Economic Zones**



**580 km coastline with 90% international trade, Chittagong 64<sup>th</sup> busiest seaport**



**14 FTAs  
SAFTA  
BIMSTEC**



**3 international, and 5 domestic airports**



**Double Taxation Treaties (DTTs) with 36 countries**



**Investment protected by Foreign Private Investment Act 1980**



**100% foreign ownership is allowed in nearly all sectors**



**International accredited laboratories**



**Continuously increase digital literacy**

## GOVERNMENT SUPPORT



**Regular tax break**

**20% cash incentives for exports**



**Regular facilities for diversification, new investment**



**ENTREPRENEUR INCENTIVES**



**Adoption of modern technology**



**Ensuring quality of products**

## OUTCOMES



**Around 500 agriculture factories**



**500,000 direct employment**



**Export-oriented factories: 200**



**Agro-food processing industry contributes 1.7% to GDP**

## The Government agencies to support private sector investments

- **Private Sector Development Policy Coordination Committee**
- **Bangladesh Economic Zones Authority (BEZA)**
- **Bangladesh Export Processing Zones Authority (BEPZA)**
- **Bangladesh Investment Development Authority (BIDA)**
- **Supportive national policies and plans- Bangladesh Delta Plan 2100, Mujib Climate Prosperity Plan- Decade 2030.**

# Investments and FAO-Private Sector Engagement

Through the HiHi the Private Sector got a unique opportunity to discuss with the Government and Development Partners to share their plans for concerns for investment in agriculture.

Foreign direct investment in agro-processing



Agriculture budget in 2021-22:

**USD 1.72B**

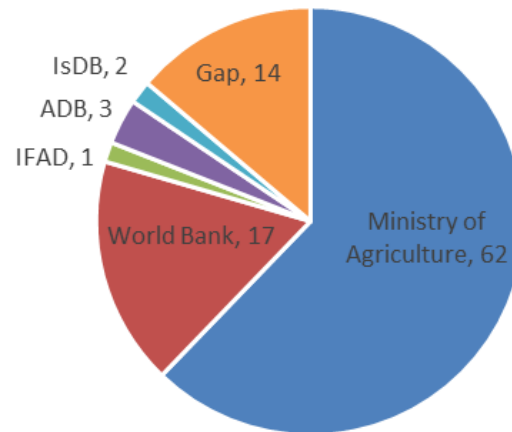


Increased by 50%

Agriculture budget in 2022-23:

**USD 2.58B**

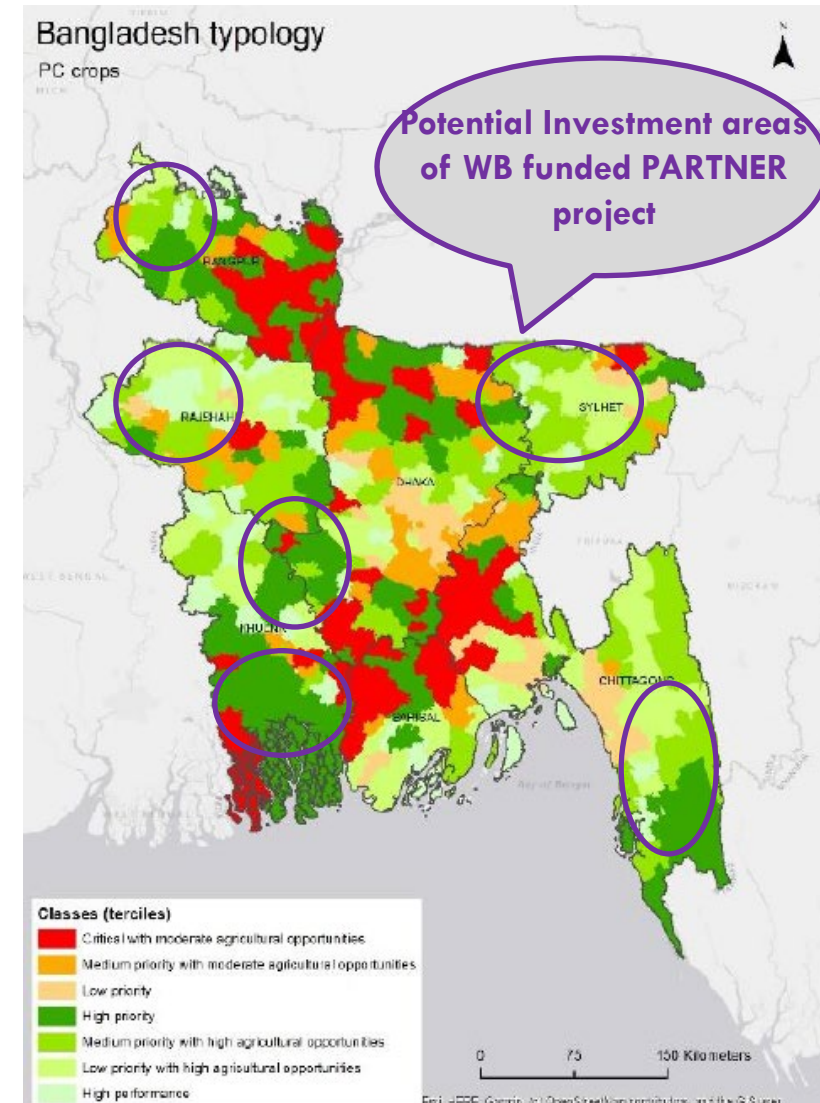
Investors and their investment (%)



Partial amount for Implementation of NAP

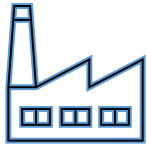
- USD 2.9B program
- USD 1.8B Gov. funds
- USD 1.1B gap filled by:
  - USD 500M – WB
  - USD 43M - IFAD
  - USD 100M – ADB (under discussion)
  - USD 50M – IsDB (under discussion)
  - USD 400M – remaining gap

Source: World Bank 2021



# Section 3: Bangladesh offers a rich portfolio of investments

## Thematic areas and examples of possible locations for agricultural investments in Bangladesh (not exhaustive)



### Cold storage and Post harvest management

Mango: Rajshahi, Naogaon, Chapainawabganj, Satkhira, CHTs  
Potato: Rajshahi, Bogura, Munshiganj, Rangpur  
Tomato: Rajshahi, Bogura, Cumilla, Jashore  
Onion : Rajshahi, Faridpur  
Carrot: Dhaka, Manikganj  
Additional value chains e.g. litchi, vegetables etc.  
Multipurpose cold storage is in the agenda

### AgroProcessing and Marketing

Mango: Rajshahi, Naogaon, Chapainawabganj, Satkhira, CHT  
Potato: Bogura, Munshiganj, Rajshahi, Rangpur  
Litchi: Dinajpur  
Vegetables: Rajshahi, Bogura, Rangpur, Cumilla, Jashore, Kushtia  
Jackfruit: Gazipur, Tangail, Mymensingh, Narsingdi, CHTs  
Pineapple: Tangail, CHTs



 Focus area of presentation

Stakeholders of several Bangladesh's key agricultural areas, including Government, Private Sector, NGO and Farmer identified agro-processing and cold storage as key priorities for the development of the agricultural sector



### Climate Smart Agriculture

Develop and disseminate stress tolerant crop varieties e.g. rice, wheat, maize, lentil, sunflower, peanut, sesame and mung bean & develop smart water management practices  
Two Research Centre/ Sub-Station in each region - Rajshahi, Sylhet, Barishal, Khulna, CHTs, Noakhali

### Irrigation and Water Management

Excavation of ponds, canals, lakes, Buried pipeline for irrigation and drainage; and solar energy powered irrigation

Barind, coastal and hill areas for rain water harvesting and solar energy use  
Haor Area- flash flood protection, irrigation facilities with buried pipe, sprinkler, and drip (for efficiency).





# Opportunities reducing post harvest loss for key value chains prioritized

## Why prioritize Cold Storage and Agro Processing?

Cold storage facilities for fruits and vegetables (except potato) are almost not existent in Bangladesh, post harvest losses are 25-50% for several value chains

### Benefits of investing in cold storage and agro processing

- Reduced post-harvest losses
- More stable crops' supply availability
- Reduced seasonal price volatility
- Higher prices achieved by farmers
- Improved practices and technologies
- Improved food quality and safety
- Improved cool chain

- Improved livelihood of farmers and food security
- Energy savings and climate mitigation
- Enhanced climate adaptation (strengthened agricultural value chain)
- Increased production, enhanced value addition and private sector development (e.g. food processing, machinery industry..)
- Reduced import and enhanced export

### Value chains with the highest impact potential prioritized for HiH



2nd most produced crop



Most imported spice



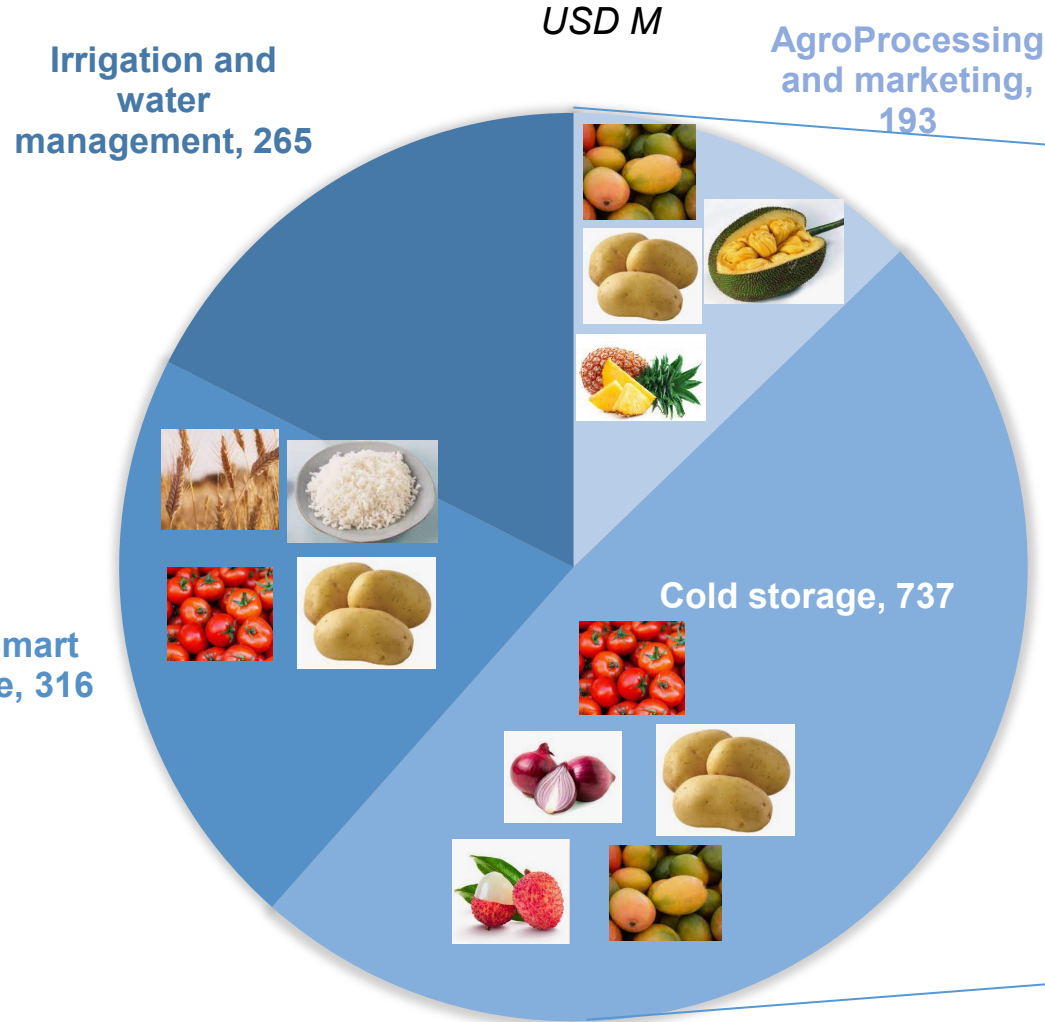
Most produced fruit, but price paid is low



35% losses; high reliance on tomato products imports

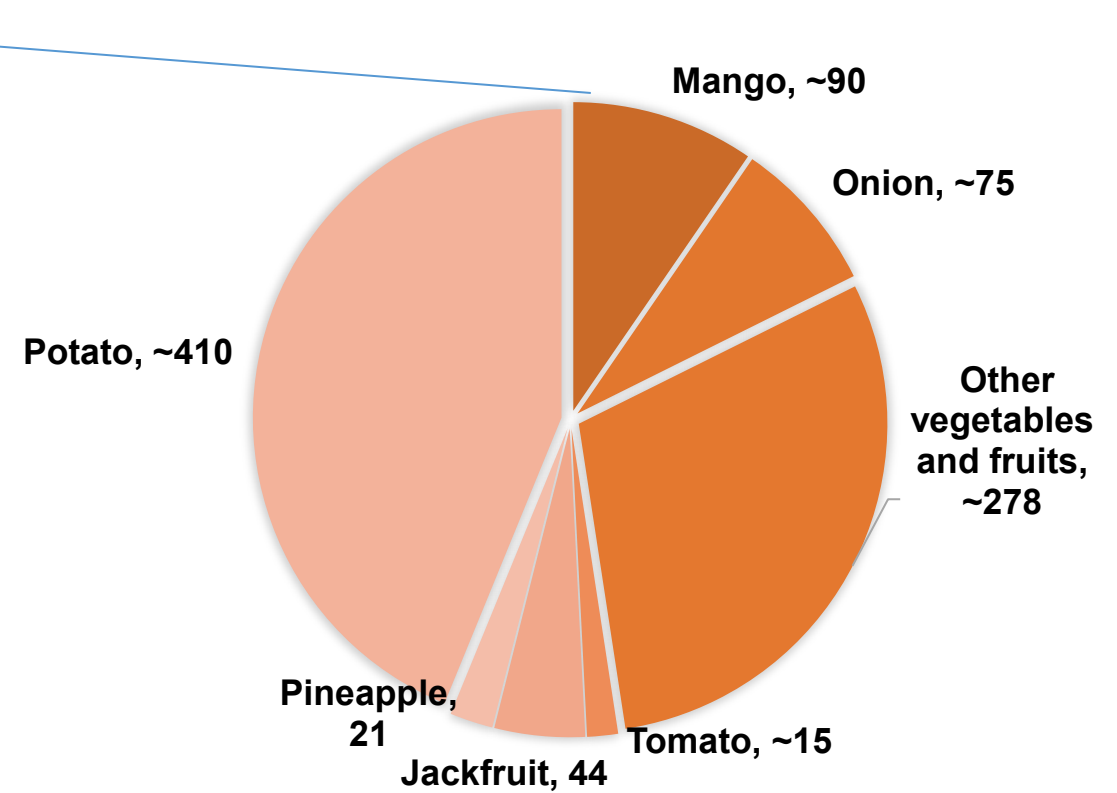
# Immediate additional investment in next 5 years ~USD 1.5bn

**Investment needed by theme**  
(only main value chains shown)  
USD M



Sum = ~USD 1.5B

**Cold storage and Agro Processing investment needs**  
USD M



Sum = ~USD 930M

# Key opportunities in the Potato value chain

## Improvement areas

Potato is the 2nd largest produced crop, production has recently overtaken annual demand, with >25% post-harvest losses

### Key Improvement Areas:

- Increase cold storage infrastructure
- Increase share of value added products being created in value chain
- Invest in climate resilient seed varieties

### Cold storage

### Processing

### National level investment needed

USD ~329M

USD ~79M

To increase cold storage to 25% of annual production

To increase processing to 2% of annual production

### Sales markets

Produce to be sold domestically to improve supply in summer months

50% chips to be exported to Gulf countries, and 50% sold domestically

### Beneficiaries

	Cold storage	Processing
<b>Direct</b>	~642,000 farmers	~74,000 farmers
<b>Indirect</b>	~1,965,000 household members ~28,800 jobs created	~225,000 household members ~400 jobs created

### Environmental Impact (tonnes CO<sub>2</sub> saved)

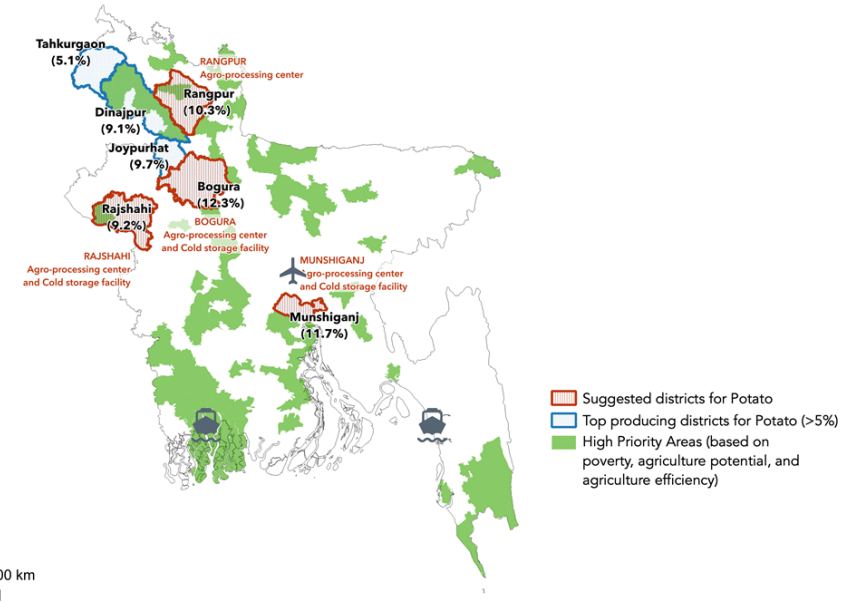


~4.49mn

~514k

## Enablers

- Stable seasonal supply: ~10M MT every year
- Potato industry gets 5-10 year tax exemption on income
- No duty on export
- Exporters enjoy 20% cash incentives on export
- Bonded warehousing facility for export-oriented industry



## Sample Key Investments

	Scope	Plant of 6,000 MT/yr cold storage capacity in e.g. Rajshahi, Bogura, Munshiganj	1 plant of 10,000 MT/year of potatoes processed per year in Munshiganj
<b>Financials per plant</b>	<b>NPV</b>	~USD 0.4M	~USD 5M
	<b>IRR</b>	~15%	~15%
	<b>Investment</b>	~USD 1.14M	~USD ~4M
<b>Per facility new jobs</b>		~100	~20
<b>Per farmer benefit p.a.</b>		~USD 180 profit increase	~USD 15 profit increase
<b>Risks and mitigation</b>		Issues with power can be mitigated by using solar Shortage of skilled staff to be mitigated through training programs	

# Key opportunities in the Mango value chain

## Improvement areas

Mango is the highest produced fruit, >30% post-harvest losses, due to high supply and moderate demand, price is low

### Key Improvement Areas:

- Increase cold storage infrastructure
- Increase share of value added products being created in value chain
- Invest in climate resilient seed varieties
- Enable better credit facilities for farmers

### Cold storage

### Processing

### National level investment needed

USD ~40M

USD ~49M

To increase cold storage to 25% of annual production

To increase processing to 10% of annual production

### Sales markets

80% produce to be sold domestically and 20% exported to Gulf countries

100% of products exported to Gulf countries, Europe in case of higher quality

### Beneficiaries

	Direct	Indirect
~408,000 farmers	~234,000 farmers	
~125,000 household members ~2500 new jobs	~715,000 people household members ~12,800 new jobs	

### Environmental Impact (tonnes CO<sub>2</sub> saved)

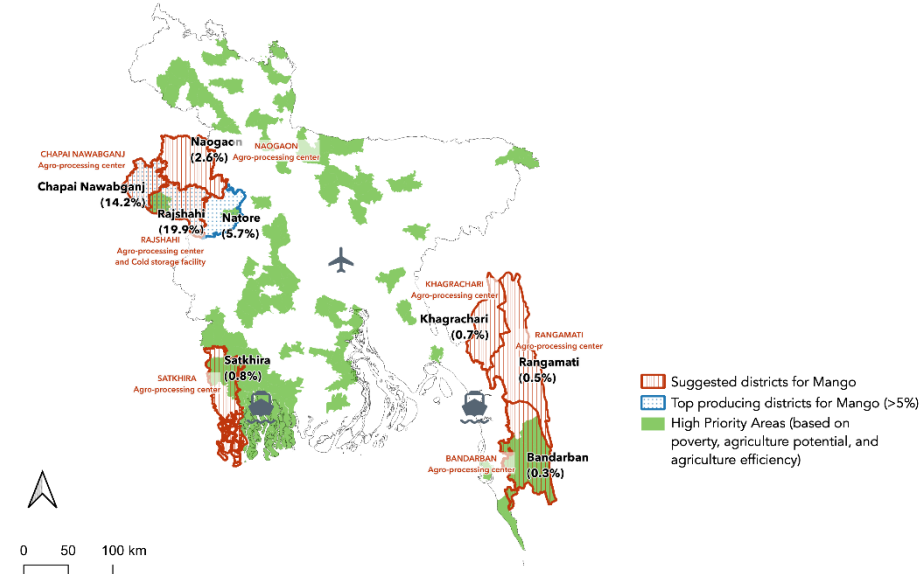


~552k

~315k

## Enablers

- Stable seasonal supply: ~1.2M MT every year
- Mango industry gets 5-10 year tax exemption on income
- No duty on export
- Cash incentives on exports
- Bonded warehousing facility for export-oriented industry



## Sample Key Investments

	Scope	Plant of 1,000 MT/yr cold storage capacity in e.g. Rajshahi	1 plant of 10,000 MT/year of mangoes processed per year in e.g. Rajshahi
Financials per plant	NPV	~USD 65,000	~USD 4-9M
	IRR	~15%	20-40% for pulp, 60-70% for juice
	Investment	~USD 190,000	USD ~4M
Per facility new jobs		10-20	60-70
Per farmer benefit p.a.		~USD 480 profit increase	~USD 25 profit increase
Risks and mitigation		<ul style="list-style-type: none"> <li>• Manage input (mango) price volatility through offtaker contracts</li> <li>• Issues with power can be mitigated by using solar</li> <li>• Shortage of skilled staff to be mitigated through training programs</li> </ul>	

# Key opportunities in the Onion value chain

## Improvement areas

Onion is the crop with most dependence on imports while facing >25% post-harvest losses, typically acute shortages are felt during 4-5 offpeak months

### Key Improvement Areas:

- Increase cold storage infrastructure
- Invest in climate resilient seed varieties

Cold storage

USD ~75M

To increase cold storage to 25% of annual production

## Sales markets

100% to be sold domestically to meet the shortage in off-peak months

## Beneficiaries

**Direct** ~266,300 farmers

**Indirect** ~815,000 people  
~3000 new jobs

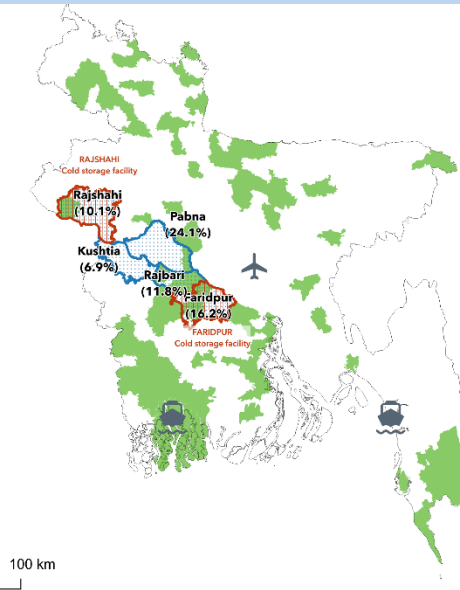
## Environmental Impact (tonnes CO<sub>2</sub> saved)



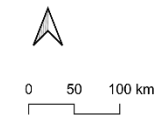
~1mn

## Enablers

- Stable seasonal supply: ~2.3M MT every year
- Regarded as priority agro-product by the Government for attaining self-sufficiency
- Onion industry gets 5-10 year tax exemption on income



Suggested districts for Onion  
 Top producing districts for Onion (>5%)  
 High Priority Areas (based on poverty, agriculture potential, and agriculture efficiency)



## Sample Key Investments

		Plant of 2000 MT/yr cold storage capacity in e.g. Rajshahi, Faridpur
<b>Financials per plant</b>	<b>Scope</b>	
	<b>NPV</b>	~USD 130,000
	<b>IRR</b>	15%
	<b>Investment</b>	~USD 380,000
<b>Benefits per plant</b>		~15 new jobs created Increase in farmer income by USD 243 p.a.
<b>Risks and mitigation</b>		<ul style="list-style-type: none"> <li>• Issues with power can be mitigated by using solar</li> <li>• Insufficient trained staff can be mitigated by creating programs and hiring international specialists</li> </ul>

# Key opportunities in the Tomato value chain

## Improvement areas

Experiences ~40% post-harvest losses; high dependence on import of processed products

### Key Improvement Areas:

Increase cold storage infrastructure to meet local demand and potentially tap into export market

Invest in climate resilient seed varieties

### Cold storage

USD ~15M

To increase cold storage to 25% of annual production

### Processing

Manufacture tomato paste, sauce, ketchup

## Sales markets

100% to be sold domestically to meet shortage in offpeak months


80% to be sold domestically and 20% exported to Gulf countries, Australia, and South East Asia

## Beneficiaries

**Direct** ~40,000 farmers -not sized-

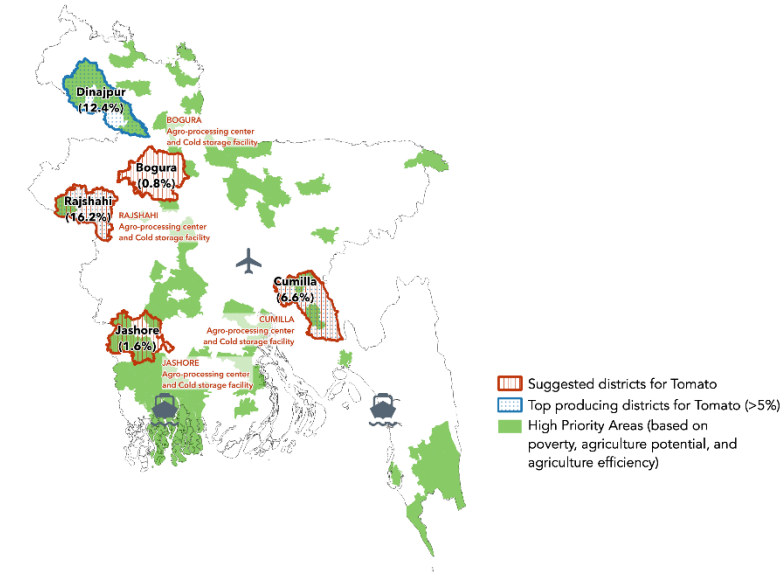
**Indirect** ~124,000 people  
~1000 new jobs -not sized-

## Environmental Impact (tonnes CO<sub>2</sub> saved)

 57k, assuming 30% of tomatoes stored were previously wasted -not sized-

## Enablers

- Stable seasonal supply: total nearly 0.5M MT every year
- Tomato industry gets 5-10 year tax exemption on income
- No duty on export
- 20% cash incentives on exports
- Bonded warehousing facility for export-oriented industry



## Sample Key Investments

Scope		Plant of 1,000 MT/yr cold storage capacity in e.g. Rajshahi, Cumilla, Bogura	Plant of 10,000 MT/yr producing tomato paste
Financials per plant	NPV	~USD 65,000	~USD 200-400K
	IRR	~15%	~15-20%
	Investment	~USD 190,000	~USD 300,000
Per facility new jobs		10-20	~60-70
Per farmer benefit p.a.		~USD 690 p.a.	~USD18 p.a.

## Risks and mitigation

- Issues with power can be mitigated by using solar
- Insufficient trained staff can be mitigated by creating programs and hiring international specialists



# INVESTMENT PLAN FOR SELECTED VALUE CHAINS



Food and Agriculture Organization  
of the United Nations

## SUMMARY

**USD ~590M**  
Investment for  
selected VCs

**15-20%**  
Overall  
Average IRR

**6.8M**  
Beneficiaries

**~USD 250**  
Income Increase  
Per Farmer

**~7.1M MT**  
Emission Reduction  
Per Capita

## KEY INVESTMENTS

### Intervention

Potato: Grow cold storage capacity to 25% and processing capacity to 2% (of production)

### Cost (USD)

~410M

### IRR (%)

15-20%

### VPN

USD 211M

### Sustainability Benefits

Beneficiaries: ~2.9mn

Income increase per farm:  
~USD 164 p.a.

Emission reduction:  
5mn MT

### Intervention

Mango: Grow cold storage capacity to 25% and processing capacity to 10% (of production)

### Cost (USD)

~90M

### IRR (%)

15% for storage; 20-60% for  
processing

### VPN

USD 87M

### Sustainability Benefits

Beneficiaries: ~2.6mn

Income increase per farm:  
~USD 317 p.a.

Emission reduction:  
870k MT

### Intervention

Onion: Grow cold storage capacity to 25% of production

### Cost (USD)

~75M

### IRR (%)

15%

### VPN

USD 26M

### Sustainability Benefits

Beneficiaries: ~1.08mn

Income increase per farm:  
~USD 243 p.a.

Emission reduction:  
1.03mn MT

### Intervention

Tomato: Grow cold storage capacity to 25% of production

### Cost (USD)

~15M

### IRR (%)

15%

### VPN

USD 5M

### Sustainability Benefits

Beneficiaries: ~164,000

Income increase per farm:  
~USD 687 p.a.

Emission reduction:  
203k MT

# Other Investment opportunities: Climate Smart Agriculture, Irrigation and Water Management; Jackfruit and Pineapple Value Chains

## Why prioritize Climate Smart Agriculture (CSA) and Irrigation and Water Management (IWM)?

Prioritizing CSA is essential to set Agriculture on a resilient growth path given the resource constraints (e.g. Labor and Land), IWM is important because about 80% of water is used in agriculture and because of soil erosion and salinization. Also, while 97% of population has access to water; its quality is a major concern.

### Immediate Investment in CSA: USD 316M

- Establishment/ strengthening of Specialized Research Stations in Coastal Area, CHT Area, Barind Area
- Developing climate resilient rice varieties
- Developing market driven tomato and potato varieties

### Immediate Investment in IWM: USD 265M

- Buried pipe and sprinkler irrigation in Barind Area and Jashore Region
- Shallow Tube-Well establishment in Haor Region
- Rain water harvesting through excavation/ reexcavation of ponds, canals, beels etc. in Coastal Area and CHT area
- Developing solar irrigation system

## Why investing in pineapple and jackfruit value chains (VCs)?

With a production of 0.47 and 1.87 M MT, and yields of 15 and 35 MT/ha, respectively, pineapple and jackfruit have positive VC margins and potential for development

### Key Improvement in Pineapple Value Chain:

- Increase cold storage infrastructure and processing (juice and canned fruits)
- Increase share of VC products being created in VC
- Invest in climate resilient seed varieties
- Enable better credit facilities for farmers

**Key growing regions:** Tangail and CHTs

**Immediate Investment in Pineapple processing: USD 21M**

### Key Improvement in Jackfruit Value Chain:

- Increase cold storage infrastructure and processing (chips and canned fruits)
- Increase share of VC products being created in VC
- Invest in climate resilient seed varieties
- Enable better credit facilities for farmers

**Key growing regions:** Gazipur, Tangail, Mymensingh, Narshindi and CHTs

**Immediate Investment in jackfruit processing: USD 44M**



# Next steps

**1**

**Commitment on cold storage and agro-processing (590M USD), with focus on potatoes, tomatoes, mangoes and onions**

**2**

**Exploration of other profitable value chains (ie: pineapple, jackfruit, banana, carrots, litchi, vegetables) and Specialized Cold storage for flowers (343M USD)**

**3**

**Development and commitment to CSA (316M USD) and irrigation and water management opportunities – rain water harvesting through excavation & re-excavation of ponds & canals (265M USD)**