

# The Role of Public Private Partnership (PPPs) in the Rapid Transfer of Agricultural Machinery Technology to Farmers - Private Sector Perspective

Agricultural Mechanization in Bangladesh- The Future



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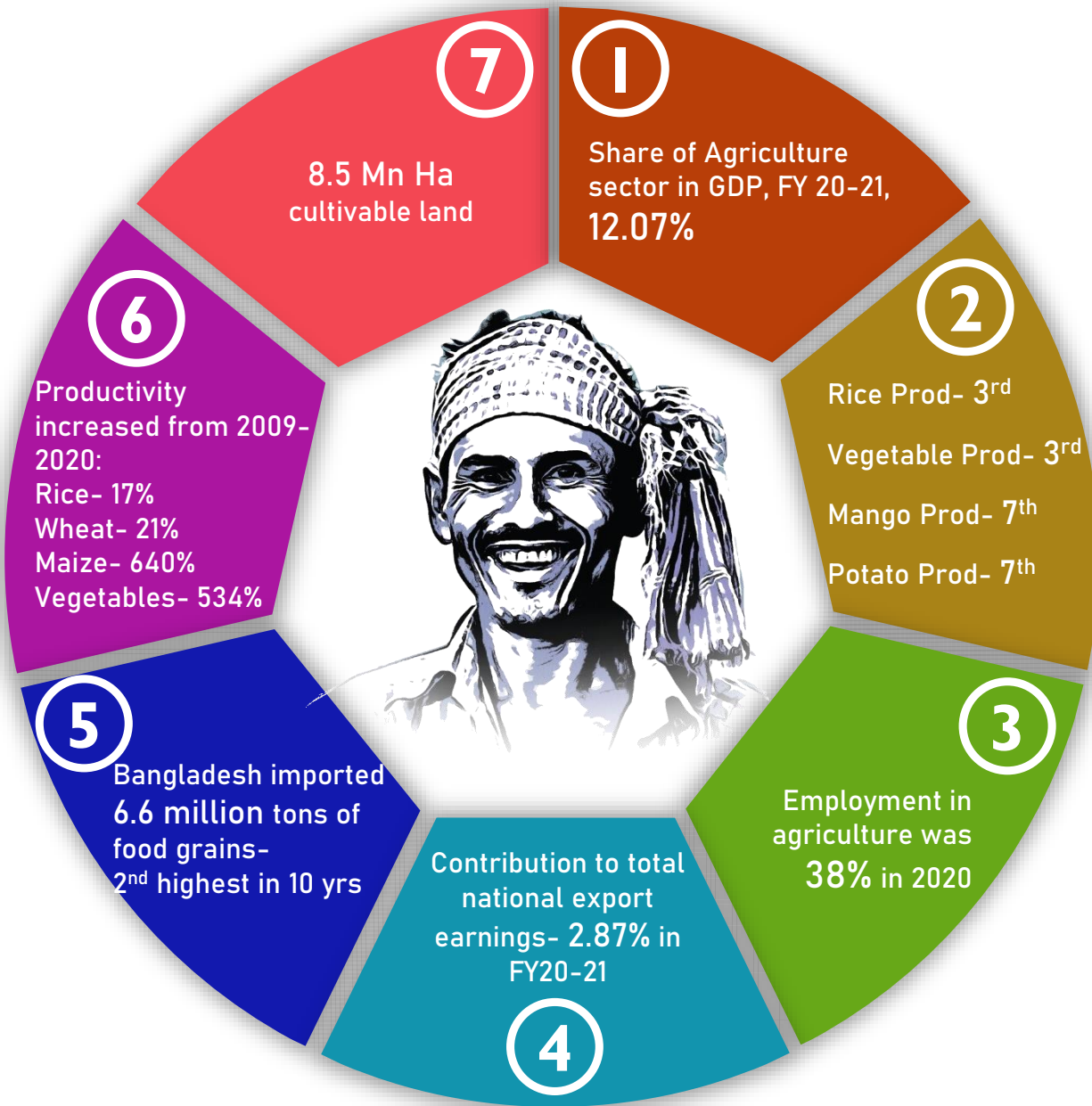
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# Agriculture Landscape of Bangladesh



\* Source: World Bank, BBS, The Daily Star, The TBS



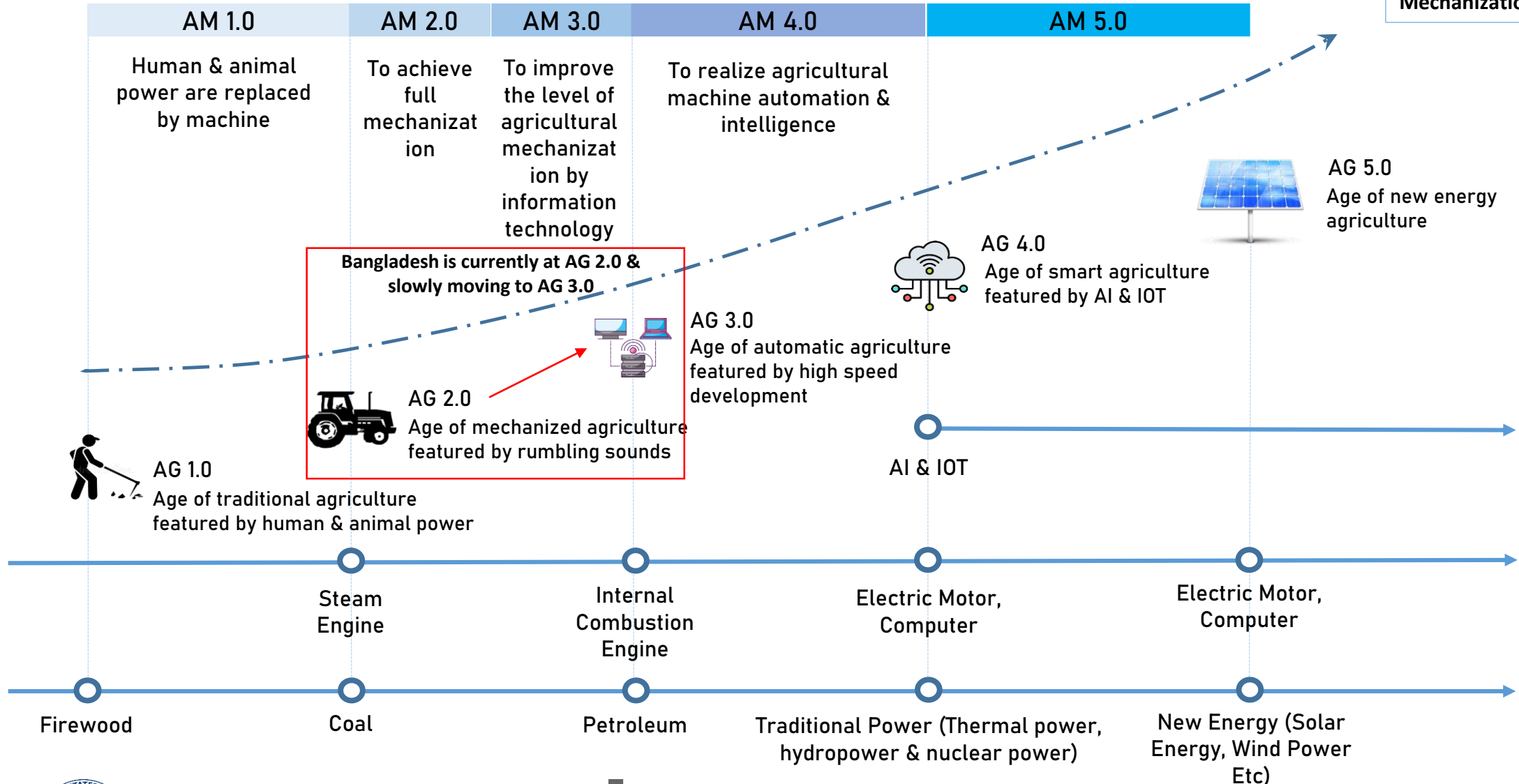


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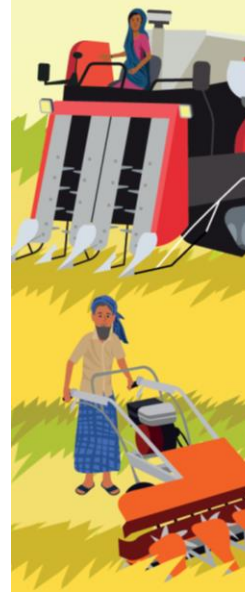
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## Trend of Agricultural Development

AM – Agricultural Mechanization



Bangladesh is currently at AG 2.0 & slowly moving to AG 3.0



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## Scenario of farm machinery in Bangladesh up to 2021



### Machineries

Farm Machinery  
Approx.(units)

Value in BDT at  
current Price  
Approx. (In Crore)

Tractor

173,000

22,490

Power Tiller

831,000

11,467

Harvester

4,946

1,238

Transplanter

915

36

Thresher

600,000

3,000

Diesel Engine

4,220,000

8,440

Irrigation Low  
Lift Pump

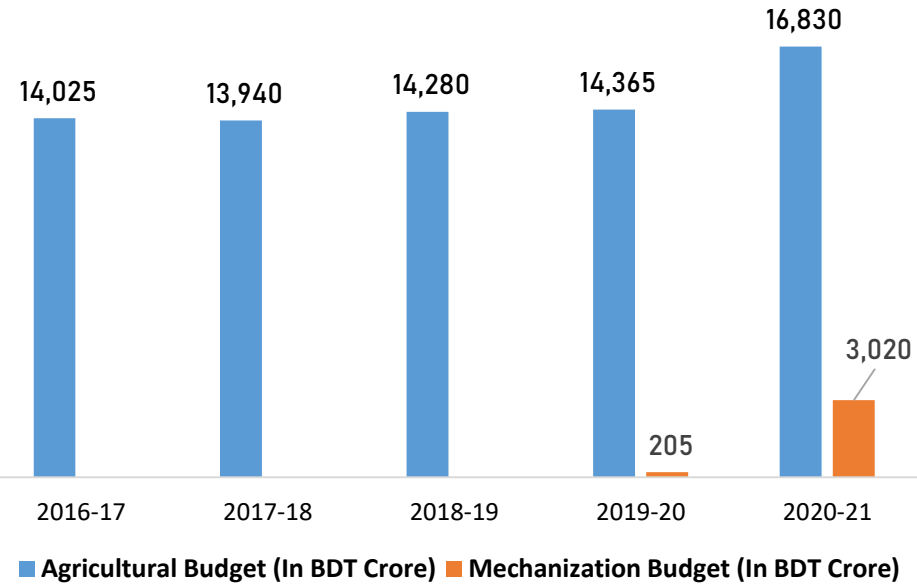
221,469

155

Total Value

46,827

### Budget in BDT MN



Bangladesh Govt. has started providing farm mechanization budget separately from FY 2019-20. The development of Farm mechanization in Bangladesh is mostly from private sector initiatives.

\*Source: MoF, MoA, BARI

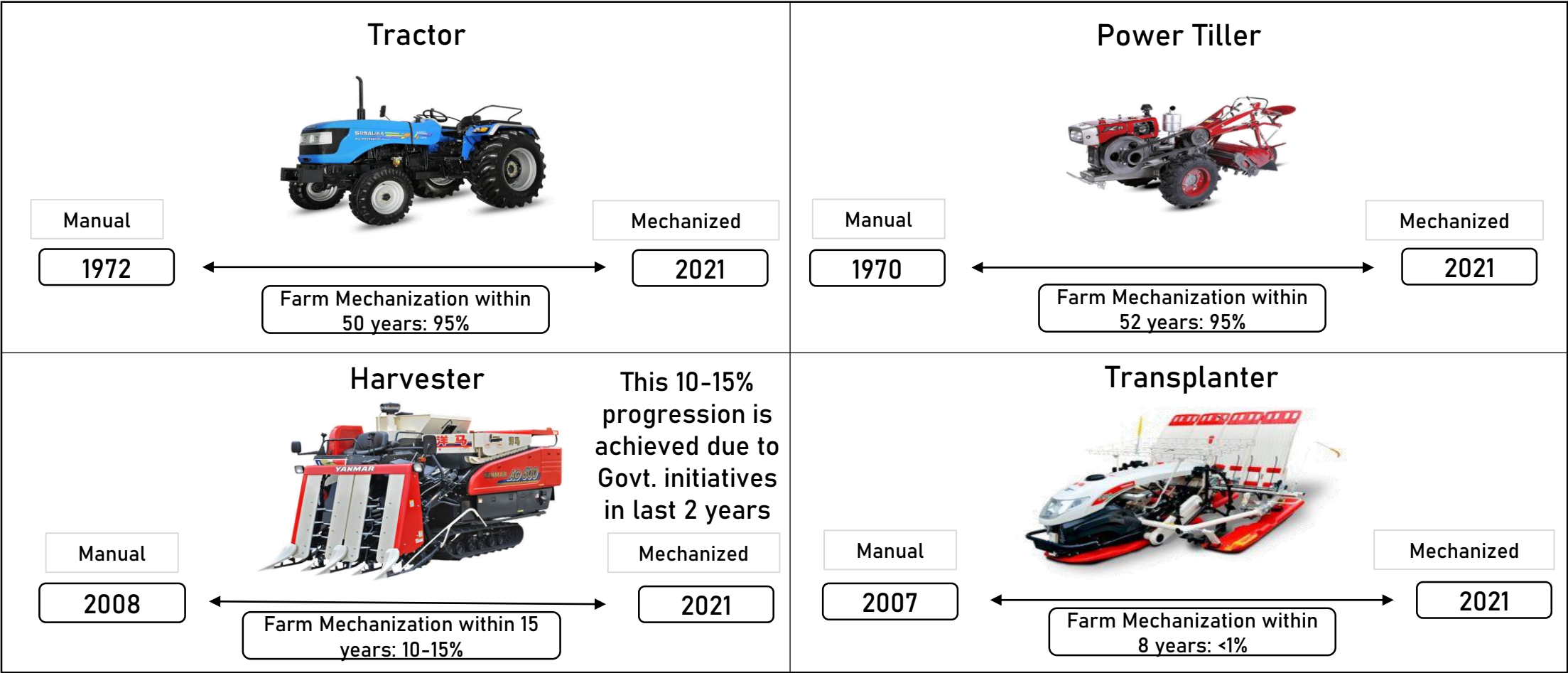


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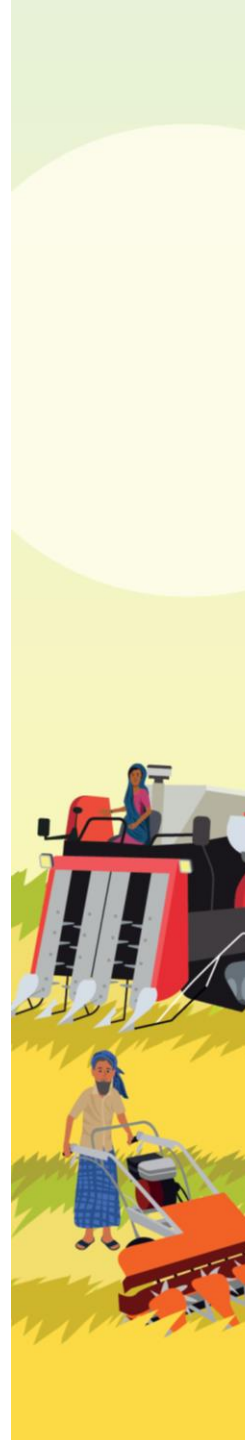
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**Scenario of farm machinery in Bangladesh up to 2021**



- ❑ The food requirement for Bangladesh will be double within the next 30 years.
- ❑ When it comes to comparison with Vietnam, we are lagging behind for 20 years in terms of incorporating Harvesting technology.







## Small Farms & Fragmented Lands are not suitable for bigger machines with higher capacity

- No. of nuclear families are increasing
- Infrastructure development throughout the country



## Limited Purchasing Power of Farmers & Unavailability of Loans

- The ability of small and medium farmers and most of the small scale entrepreneurs to procure and maintain expensive agricultural machinery at their own expense is limited
- Obtaining loans at the local level is not easy



## Limited Knowledge of Farmers regarding Modern Technology

- Exposure of farmers to modern technology is very low as there is no demonstration center
- They have limited idea about the ROI of these machineries



## Lack of Skilled Manpower & Resources

- Technical skills of the subject-based manpower is less
- Due to the low margin of machineries, bigger investment is less



## Public Private Partnership



Public



Comes into a  
collaboration with



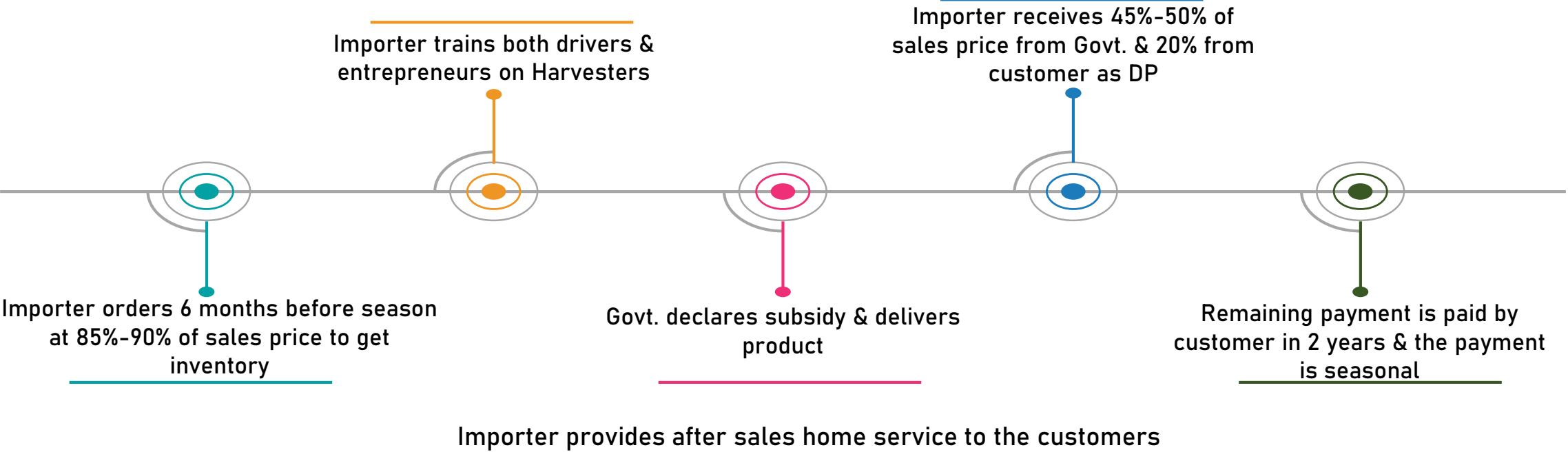
Private

Public-private partnerships is a commercial legal arrangement between govt. owned entity on one side and a private sector entity on the other.

- In normal cases, this is a partnership of **WIN-WIN** situation & Mutual Respect for all parties involved.
- In Agricultural Sector, It is a common practice in the whole world that Govt. enters into Public Private Partnership to ensure Food Security. So, Bangladesh Govt. should enter into PPP in this sector targeting followings:
  - ✓ To set direction for Farm Mechanization
  - ✓ To reduce the time of embracing new technologies



## Indirect PPP: Harvester Technology



### Situation Up to Now

- Total Harvester Value- BDT 1,238 Crore
- Subsidy Provided by Government- BDT 632 Crore
- Payment from Customers- BDT 226 Crore
- Current credit in the Industry- BDT 380 Crore

অত্র আম-মোস্তারনামা কোন প্রকারেই বর্নিত হারভেস্টারটির মালিকানা হস্তান্তর বুঝাইবে না এবং নিযুক্তিয় অত্র আম-মোস্তার উক্ত হারভেস্টার অন্য কারো নিকট হস্তান্তর করতে পারবে না।





# NBFI for Supporting Agri Machinery Entrepreneurs



**Name:** Md. Imran Hossain  
**Place:** Awliya, Patuakhali  
**Contracted for:** 100 Acre Consolidated Land  
**Owns:** 10 Combined Harvester, 22 Reapers, 7 Transplanters & 1 Tractor  
**Deployed only 4 people for the project as whole production & harvesting process will be completed with the help of Farm Mechanization**

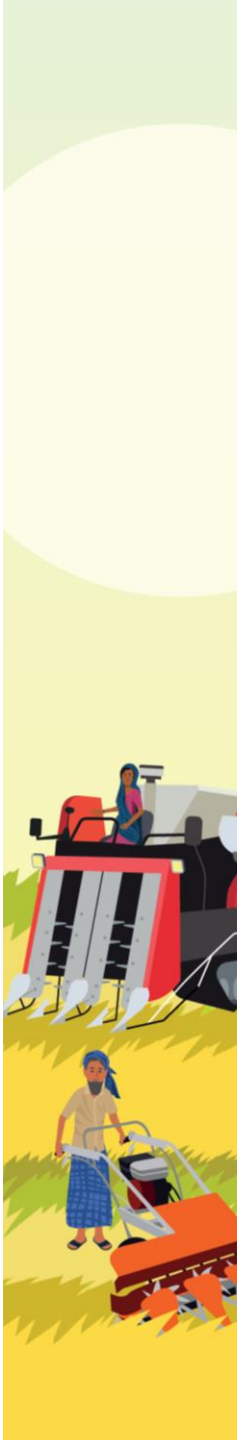
These entrepreneurs can change the future of agricultural sector of Bangladesh. They need huge financing but the banks & NGOs are not offering proper financing solution for them.

These entrepreneurs are in a dire need of easy financing solution in current situation.



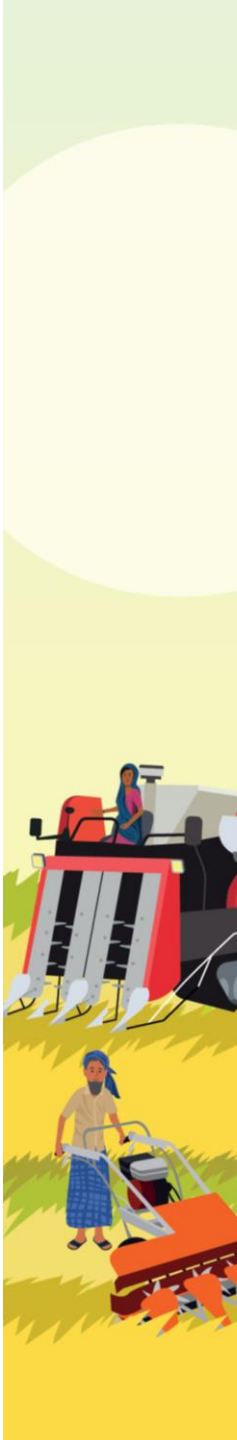
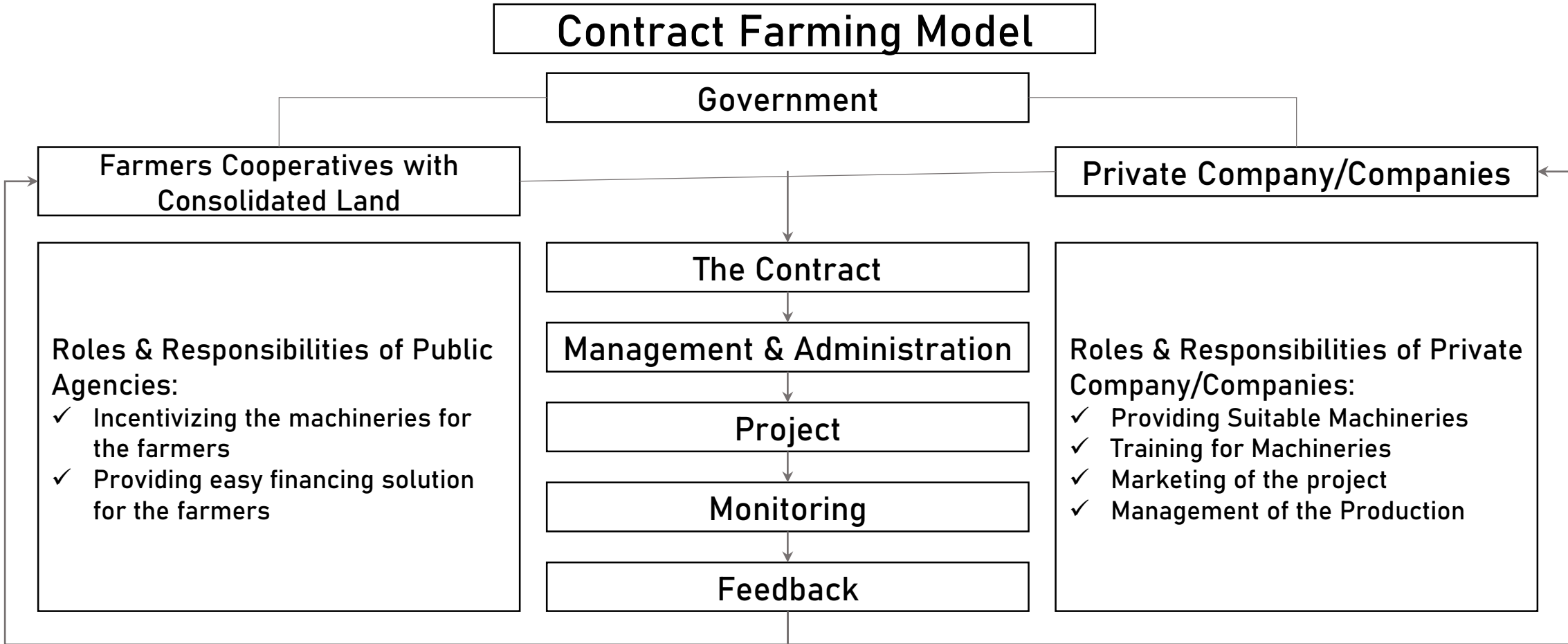
A NBFI for Agri Machinery Entrepreneurs in PPP can solve this major problem

Initial Capital: BDT 4,000- 5,000 Crore  
Annual size of Loan: BDT 1,000- 1,500 Crore  
1-3 Years Scheme with low interest rate



# Contract Farming for Consolidated Land Farmers

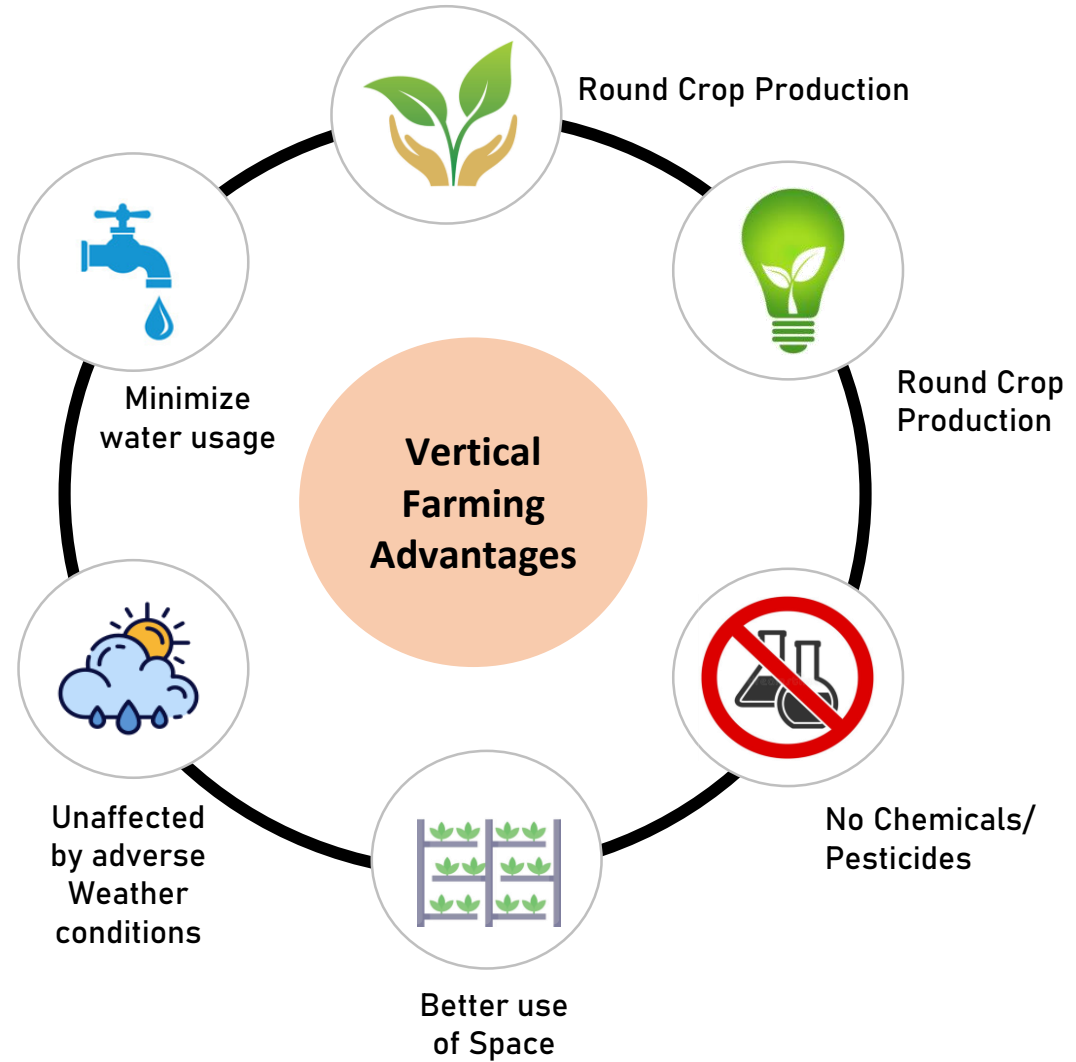
We should adopt local entrepreneur community based agriculture & contract farming to face the challenge of small & fragmented lands





No. of Project: 1 in every district  
Land/ Project: 5 acre

- ❑ Govt. can provide lands & policy support for vertical farming project
- ❑ Private companies will be responsible for providing machineries, training & marketing
- ❑ End users will take training & produce food
- ❑ Govt., private companies & end users will have fixed share of both profit/loss





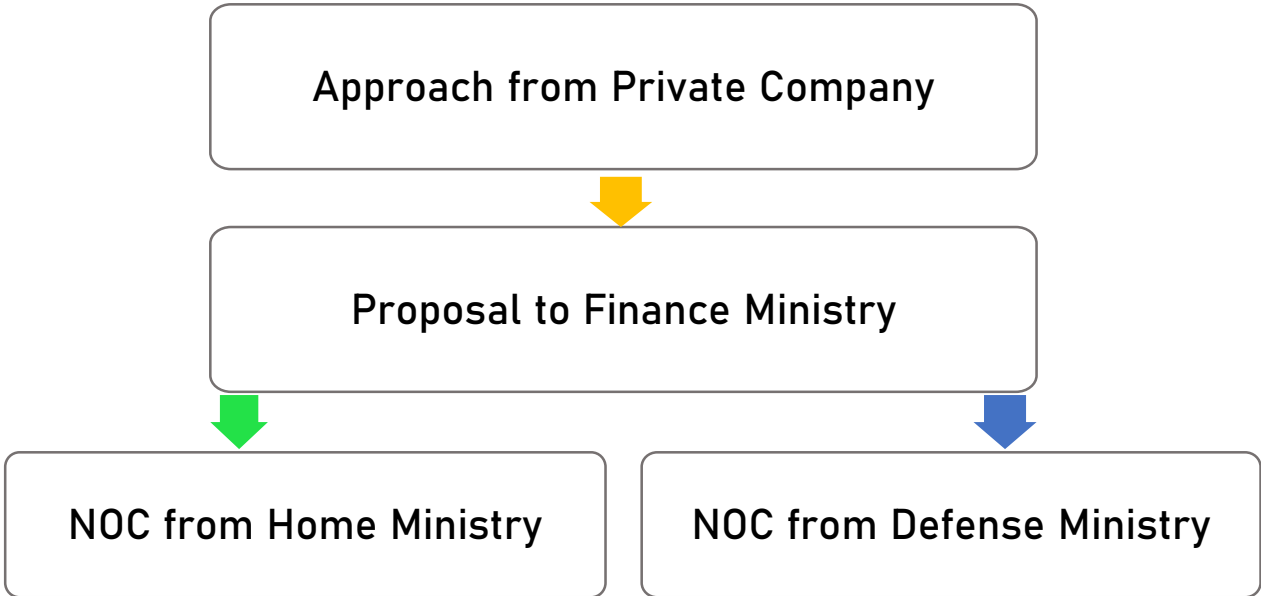
# Agricultural Drone Technologies



Drones can be used in:

- Precision Agriculture
- Survey Farm Land
- Remote sensing and mapping fields, crops & land
- Analysis of soil, health & vigor of crops
- Irrigation & Nutrient management
- Fertilizer & Pesticides management




## Current Import Process



Currently it is taking long time to import agricultural drones by private organizations which is hampering farm mechanization. ACI Motors is trying for 3 months to import drone. Public Private Partnership can solve the problem. This partnership will also help in mapping of fields, crops & land which will solve the problem of data scarcity regarding Agriculture in Bangladesh.






**Government will provide**

-  **Land**
-  **Infrastructure**
-  **Policy Support**

**Technology Demonstration Center**

**Private will provide**

-  **Manpower**
-  **Technology**
-  **Training**

**Benefits**

- Popularisation of technology to the mass audience in the least possible time
- Faster suitable modification & upgradation
- Offering custom made products for Bangladesh

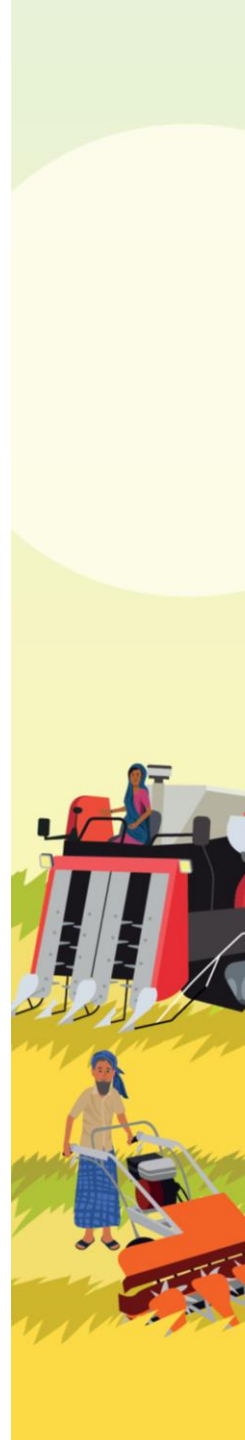
**High Value Crop Irradiation Centre**



Post-harvest losses eat away Tk 20,000 cr per year in Bangladesh

Irradiation Centre for mango, lychee & onion can extend the shelf life by:

- Onions for up to three months
- Can keep mangoes fresh for 20-25 days
- Litchis for 7 days (Nitrogen cooling technology can extend by 1 month)





# New Farm Mechanization Technologies



Spraying Drone



Vegetable Transplanter



Onion Digger  
(Power Tiller Operated)



Milking Machine



Homogenizer



Batch Pasteurizer



Tractor operated Maize Harvester



Potato Transplanter  
(Power Tiller Operated)



Onion Transplanter  
(Power Tiller Operated)



Cream Separator



Packing Machine



AI Gun



Chaff Cutter



Biogas Unit



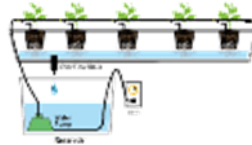
De-humidifier



Maize Harvester



Maize Chopper



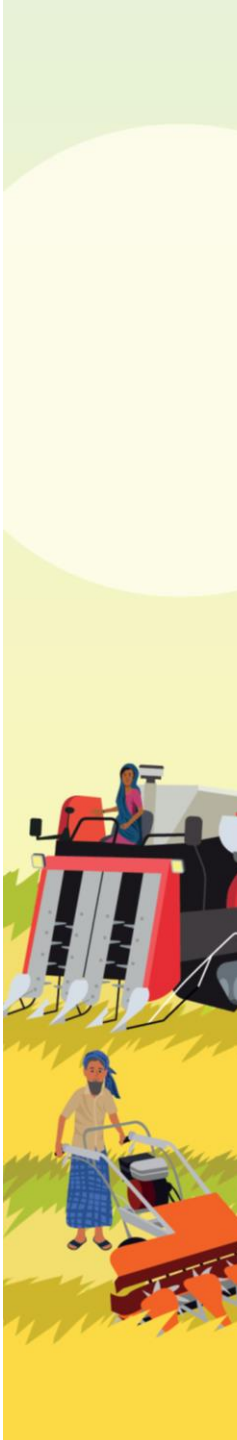
Drip Irrigation



Hydroponic Units  
Strawberry, Tomato



Fruits Dryer  
(Mango, Jujube, Herbs)



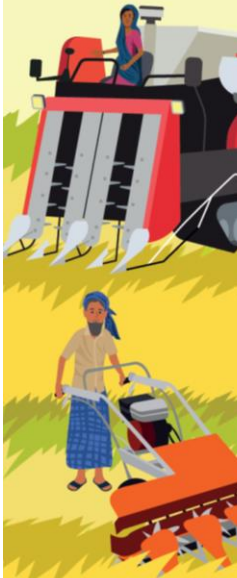
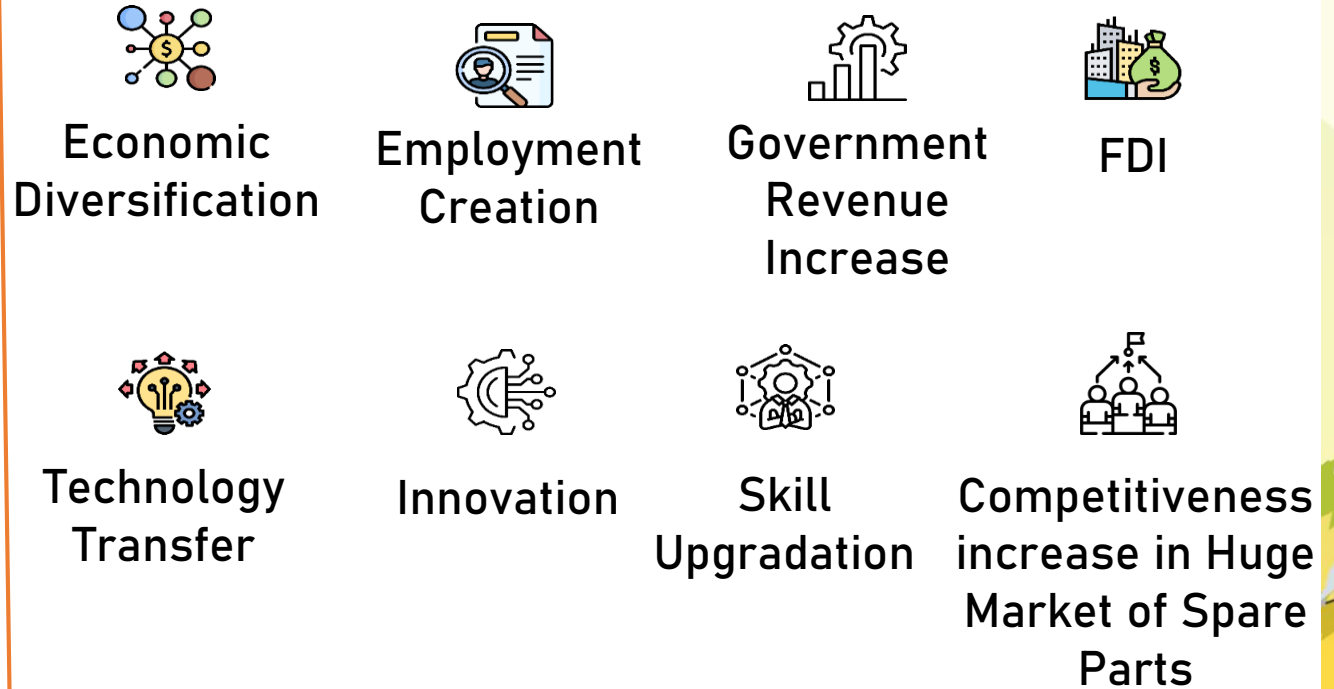
# Economic Zone



## Special Economic Zone for Farm Mechanization in Bogra / Jessore

- ❖ Agri Machinery Factory
- ❖ Training Centre
- ❖ Demonstration Centre
- ❖ Testing Centre
- ❖ Research & Development Centre

## Benefits





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# THANK YOU



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