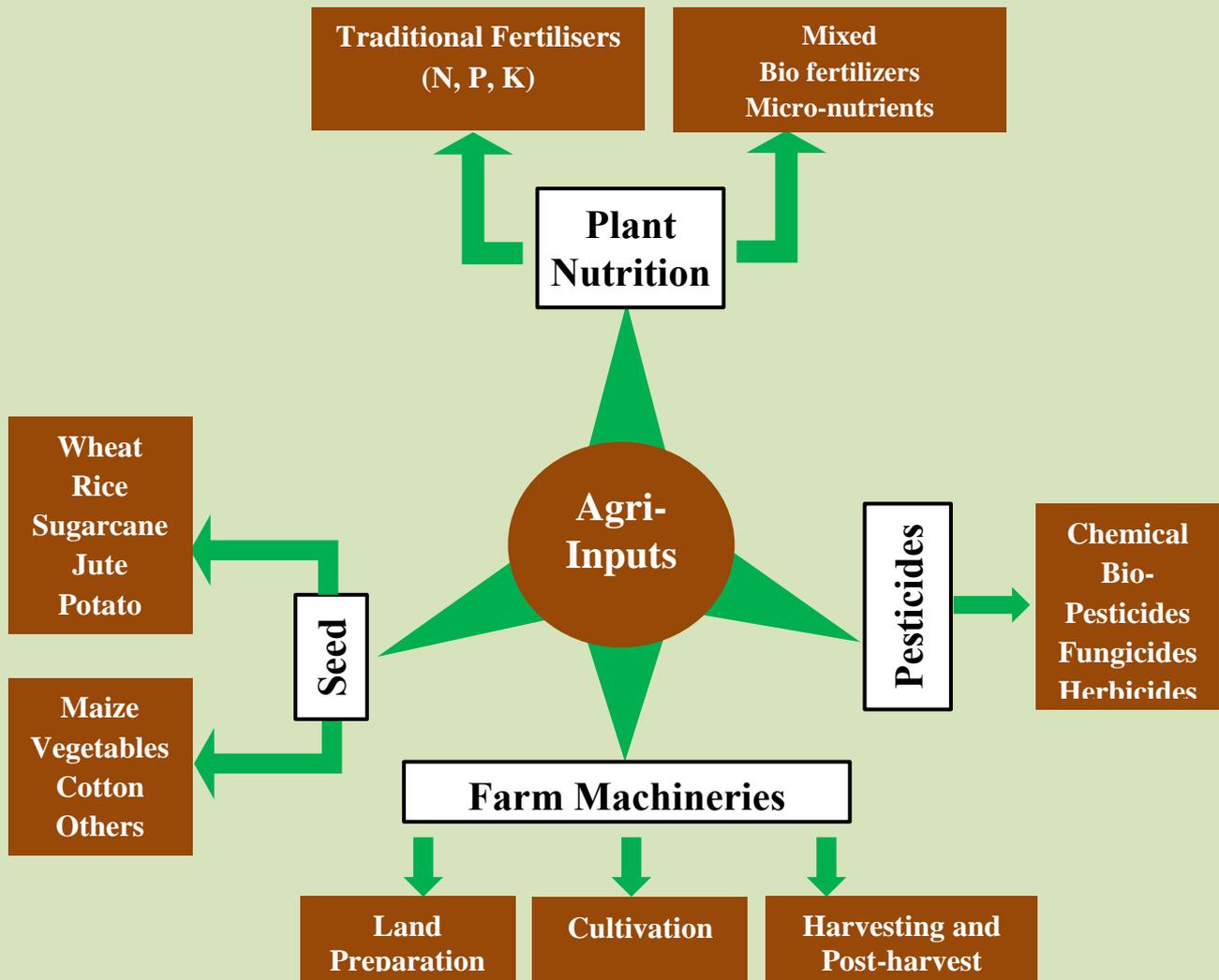


# AGRI-INPUTS IN BANGLADESH

## Discover. Invest. Profit

The agri-input industry in Bangladesh has seen significant growth majorly due to crop diversification, realisation of better yields and incomes, efficient distribution network and farmer awareness. Within the agri-input industry Seed industry has shown comparatively better growth, followed by fertilisers and insecticides. The Ministry of Agriculture, Bangladesh, with its initiatives and policies, has shown keen interest to promote quality seeds, bio-organic inputs, micronutrients, Integrated Pest and Nutrient Management and farm mechanisation.

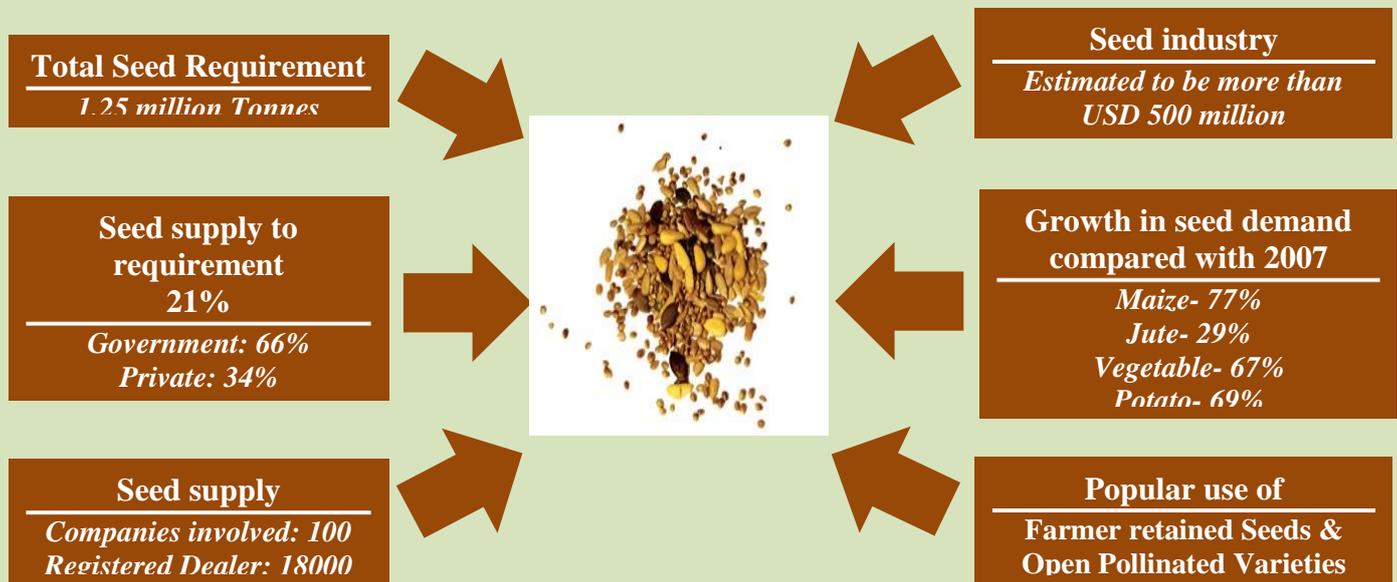


## SEED INDUSTRY

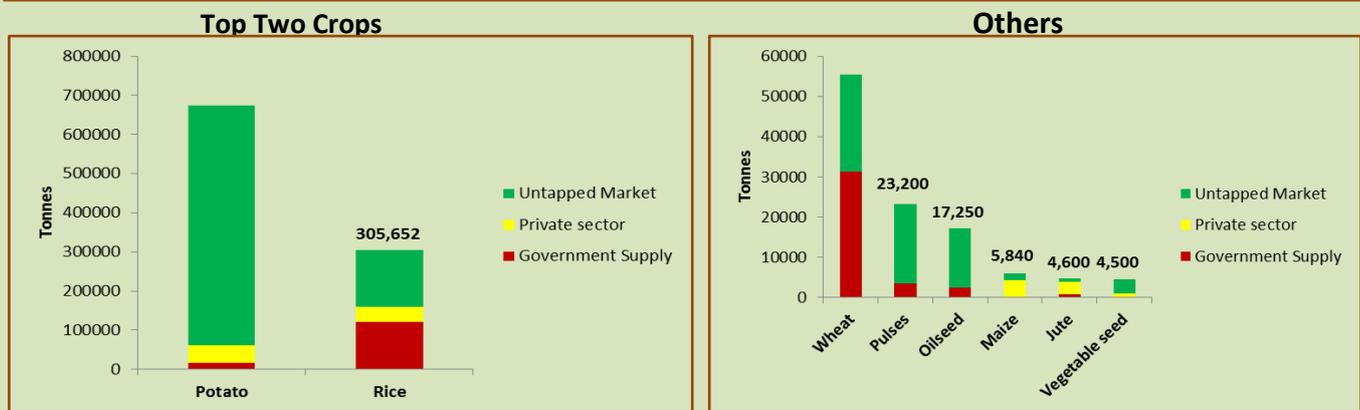
<b>Estimated Value of the Industry</b>	<b>USD 500 million</b>	<b>Estimated Market Size</b>	<b>1.25 million tonnes</b>
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Quality seeds play a vital role in maximising the yield potential of any crop variety. Experimental results have clearly indicated a yield enhancement of about 12%-15% by use of quality seeds. The seed industry in Bangladesh is comprised of both public and private sectors. The recent expansion of the private sector seed companies have resulted in the engagement of many contract farmers into the formal seed production chain.

<b>41%</b>	<b>59%</b>
<b>Combined supply of seed by the public and private sectors</b>	<b>Farmer retained seeds &amp; informal market</b>



## Demand and Supply



## Growth Drivers

- ▶ Gradual shift of farmers from subsistence farming to commercial agriculture that requires quality and efficient inputs
- ▶ Approval to private sector to import and sell hybrid seeds since 1998
- ▶ Growing realisation of better yield through good quality seeds amongst farmers
- ▶ Complimentary industry like poultry have grown, in turn boosting the maize seed market

## Key Excerpts of National Seed policy

- ▶ **Controlled crops:** The new varieties of **wheat, rice, jute, potato and sugarcane** developed by private or public agencies or imported will be subject to notification by the National Seed Board (NSB) and evaluation and testing by the Technical Committee on seeds
- ▶ Varieties of crops, other than mentioned above, that are imported or locally developed by a private agency must be registered with the NSB, but will not be subject to any evaluation/testing

## Variety evaluation and approval

- ▶ Prior to variety approval and release, new varieties of controlled crops must have undergone two types of variety tests:
  - Test for Distinctness, Uniformity and Stability (DUS) and
  - Test for Value, Cultivation and Use (VCU).
- ▶ The Seed Certification Agency (SCA) is responsible for the DUS and VCU test
- ▶ The DUS test is carried out in **one location** in a **one year test** and is a prerequisite for certification, variety identity, and the introduction of plant breeders' rights and plant variety protection
- ▶ Due to difficulties in testing sugarcane, this crop is not included in the DUS test
- ▶ Tests for VCU are also carried out at SCA. The VCU test is performed as multi-location trials over **two years and in six locations**
- ▶ New varieties are evaluated to ensure that the new varieties represent a genuine improvement compared to old varieties

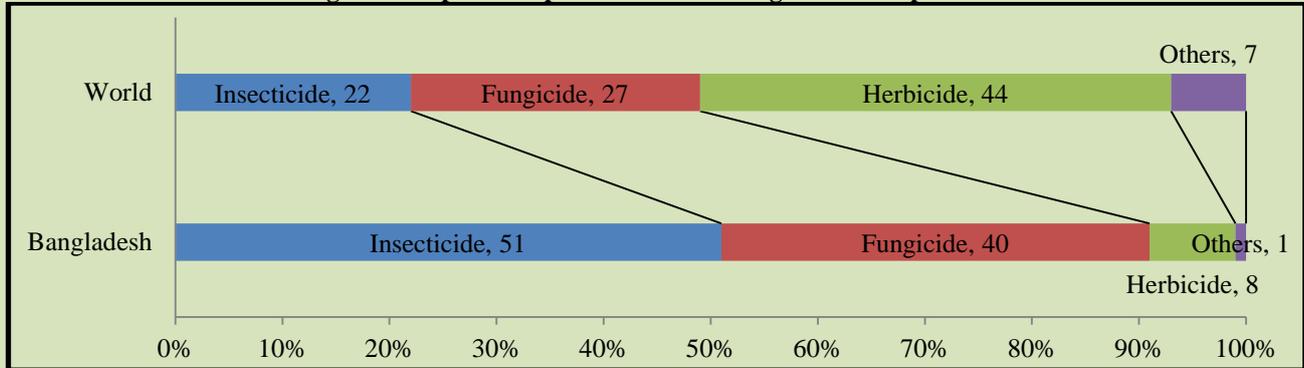
# PESTICIDE INDUSTRY

Estimated Value of the Industry | **USD 250 million**

Estimated Market Size | **40,000+ MT/KL**

➔ The current low consumption of crop protection products in Bangladesh being less than a kg/ha compared to world average of 3 kg/ha, offer immense opportunities for future growth.

The following chart depicts the pesticide use in Bangladesh compared to the world



## Growth Drivers

- ▶ Gradual shift of farmers from subsistence farming to commercial agriculture that requires quality and efficient inputs
- ▶ Increasing awareness of crop loss due to pests and use of pesticides amongst the farmers
- ▶ Growth in cultivation of Horticulture crops including vegetables
- ▶ Government initiatives and policies towards Integrated Pest Management (IPM)

## Bio-Pesticides

*Bio-pesticides are naturally occurring substances controlling harmful pests, especially biologically.*

### Types of Bio-Pesticides:

1. **Microbial:** Bacteria, Fungi or other protozoa based. Target specific
2. **Biochemical:** herbal-based substances helping plants in counter attacking pests.
3. **Plant incorporated protectants:** Genetically modified materials produced by modifying proteins and introduced in plants to produce its own pesticides

*The use of Bio-Pesticides has been limited to Trichoderma, Bracon Herbetor, sex pheromone etc. and there lies an immense scope for Bio-Pesticides to be promoted in Bangladesh.*

## Insecticides

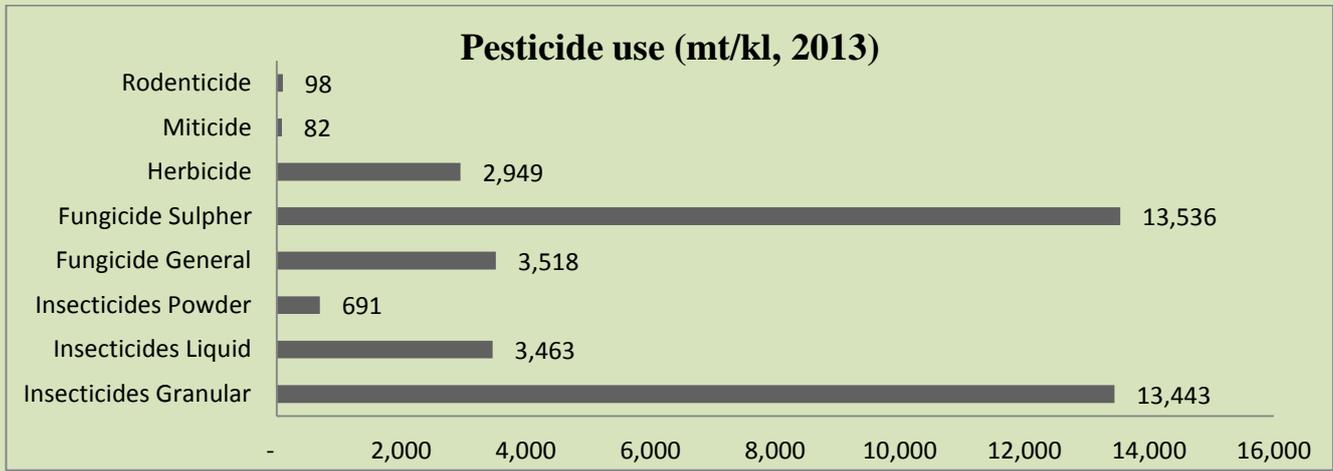
- ▶ The insecticide use has grown by more than 45% over the last decade and has been steady over the last 3 years
- ▶ In 2013, Granular insecticides have decreased by 18% y-o-y, while use of liquid and powder insecticides have increased by 1% and 7% respectively
- ▶ The range of farmers using insecticide can be increased significantly.
- ▶ Popular insecticide include:
  - Carbofuran
  - Diazinon
  - Fipronil
  - Cypermethrin
  - DDVP
  - Chlorpyrifos

## Fungicides

- ▶ The use of Fungicides has grown 5 times over the decade and is growing by CAGR of 35% over the last 3 years
- ▶ In 2013, fungicides in general have grown by 10% year on year due to its increasing use in Rice, Vegetables and Potato
- ▶ While Sulphur based Fungicides have been more popular amongst the farmers, the following are the top selling Fungicidal active ingredients
  - Propiconazol
  - EBDC
  - Dimethemorph
  - Mancozeb
  - Chorothalonil

## Herbicides

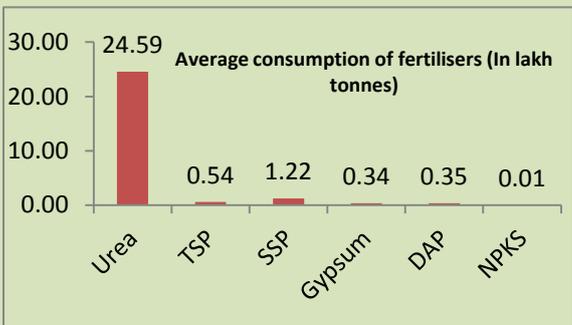
- ▶ Herbicides have grown twice in a decade while the demand for herbicides have remained steady with 2% growth in last 3 years
- ▶ In 2013, Herbicide use has decreased by 18% due to introduction of effective herbicides having low dosages
- ▶ Use of Herbicides like Glyphosate, 2-4-D, Triclopyr and MCPA are



## FERTILISER INDUSTRY

**Estimated Value of the Industry** | **USD 300 million**

**Estimated Market Size** | **2.6+ million tonnes**



### Growth Drivers

- ▶ Gradual shift of farmers from subsistence farming to commercial agriculture that requires quality and efficient inputs
- ▶ Government initiatives and policies to promote organic/ bio fertilisers and Integrated Nutrient Management
- ▶ Variable availability in Urea (N) results in use of other traditional, mixed and organic fertilisers

### Types of Fertilizers Used

Other than the traditional fertilisers, most of the rest fertilisers are supplied by private organisations, especially the micronutrients and organic fertilisers.

Traditional Fertilisers	Mixed Fertilisers	Micronutrients	Organic Fertilisers
Urea  Super Phosphates   Murate of Potash	Traditional fertilisers mixed with other nutrients like Sulphur, Zinc	Cl  Copper  Cu  Fe  Mn   B   Mo	Rhizobium, Azotobacter, Azospirillum, Cyanobacteria

### Opportunity for Micronutrients in Bangladesh

The nutrient elements which are required comparatively in small quantities are called as micro or minor nutrients or trace elements. There are various types and mixtures of micronutrients in form of foliar spray, soil application or fertigation. **The consumption of micronutrients is growing due to awareness amongst farmers regarding their roles.**

Micronutrients	Role in plant process
Chlorine, Copper, Iron, Manganese	Processes related to photosynthesis
Zinc, Copper Iron, Manganese	Enzymes systems
Molybdenum	Assimilation of Nitrogen
Boron	Reproductive systems

### Plant Growth Regulators (PGRs)

*Any organic compound, that is active at low concentrations (1-10 ng/nl) in promoting, inhibiting or modifying growth and development of a plant. The naturally occurring (endogenous) growth substances are commonly known as plant hormones, while the synthetic ones are called growth regulators.*

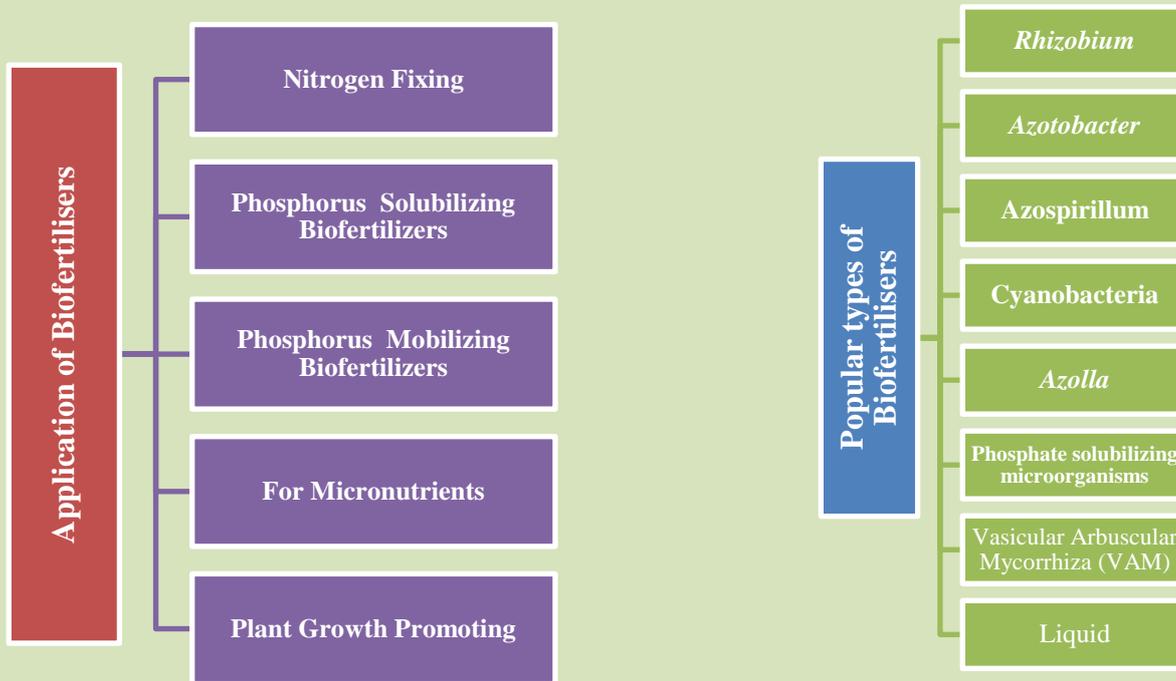
**Major PGRs include** Auxin, Gibberellin, Ethylene, Cytokinin

#### Examples of PGRs and application

Active Ingredient	Application crops
Indol Butyric Acid	Pineapple, Apple, Ornamentals
Gibbrellins	Grapes, Potato, Mango
Ethephon	Apple, Cherry, Pineapple, Sugarcane
Packlobutrazol	Litchi, Mango
Brassinolide	Horticulture crops

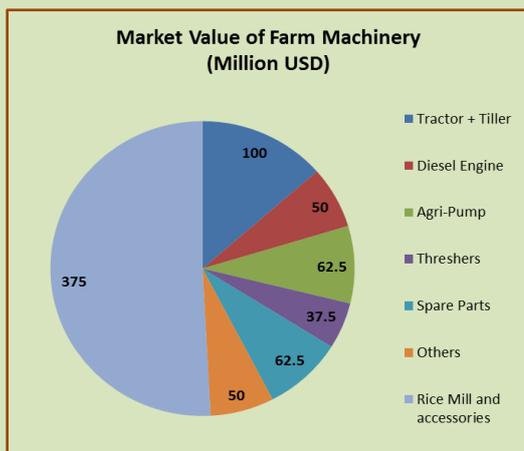
## Opportunity for Bio fertilizers

Biofertilizers are preparations containing efficient strains of microorganisms that help crop plants' uptake of nutrients. Use of biofertilizers is important component of Integrated Nutrient Management (INM), since they are cost effective and provide renewable source of plant nutrients to supplement the chemical fertilizers for sustainable agriculture. Use of biofertilisers in Bangladesh is growing due to government initiatives to promote them



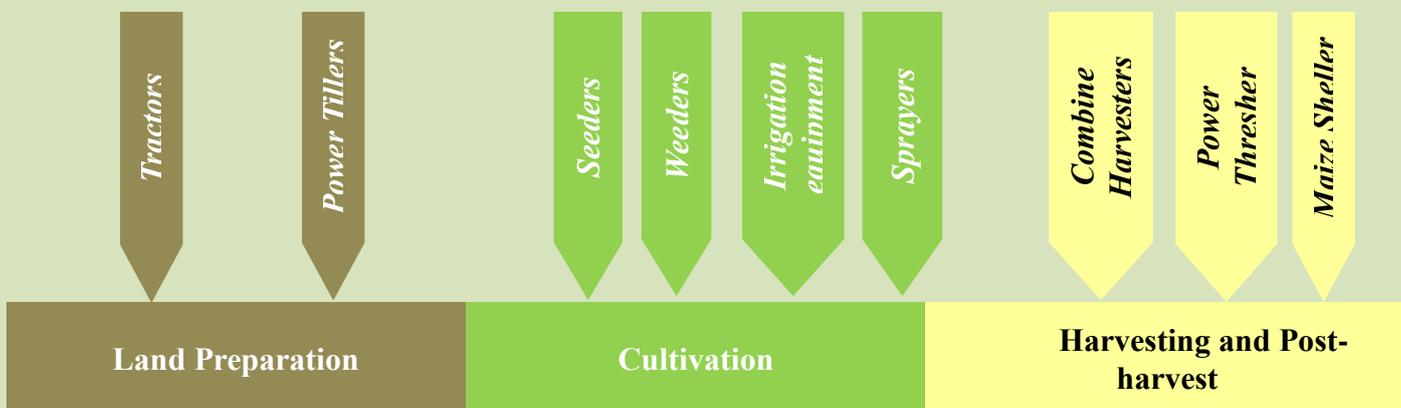
## FARM MACHINERY INDUSTRY

The agriculture machinery and equipment manufacturing industry provides vital support for the development of the agribusiness sector in Bangladesh. The sector comprises a wide range of products including diesel engine, pumps, electric motors, power tillers, threshers, rice haulers, implements and hand sprayers. Land preparation, irrigation, chemical spraying, husking and milling have been mechanized to a greater extent in the country

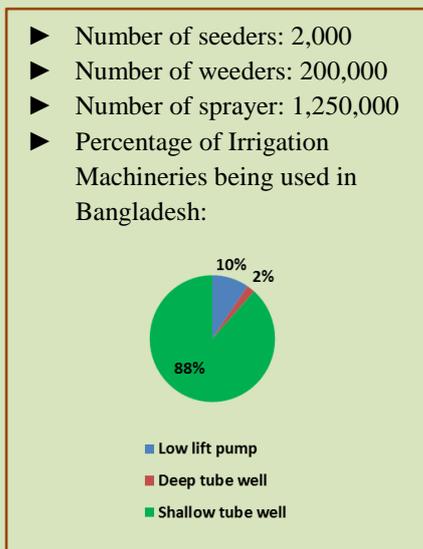


### Growth Drivers

- ▶ Gradual shift from subsistence farming to commercial agriculture
- ▶ Availability of labours for agricultural operations is decreasing
- ▶ Use of machinery in agriculture is Cost and Time effective



	Power Tiller	Tractor
<b>Estimated number of operating units</b>	500,000	40,000-45,000
<b>Annual sales units</b>	50,000	4,000



▶ Number of locally produced threshers: 200,000 pedal threshers and 15,000 power threshers  
 ▶ At the farm level, sugarcane is crushed by expellers which are manufactured locally and driven by pair of bullocks.

## RELEVANT STAKEHOLDERS

Stakeholders	Function
Bangladesh Agricultural Research Institute (BARI)	BARI is the largest multi-crop search institute conducting research on a wide variety of crops. Besides variety development, this institute carries out research on such areas as soil and crop management, disease and insect management, water management and irrigation, development of farm machinery and other areas
Bangladesh Crop Protection association (BCPA)	BCPA is the representative body of pesticide companies. Safe guarding the common interest of its member companies BCPA works to ensure that farmers are aware of safe and economic use of pesticides.
Bangladesh Fertilizer Association (BFA)	BFA works to protect, develop, support and promote all measures and steps towards open/free competitive marketing, trade and manufacture of all fertilizers and plant nutrients in Bangladesh and to co-ordinate the efforts of the members of the Association towards this end
Bangladesh Seed Association (BSA)	BSA is a trade-body of 180-private sector seed marketers and work towards the promotion and marketing of seed products in Bangladesh
Bangladesh Agricultural Machinery Merchant Association (BAMMA)	This is a private sector association that works for profitable growth for this sub-sector and to identify problems, constraints and opportunities of the farm machinery industry in Bangladesh

For further information, please visit [www.boi.gov.bd](http://www.boi.gov.bd)