



# Spotlight on India | Agri-Tech

---

# India Team



**Saikiran Vedula**  
Regional Manager - India



**Sonali Hule**  
Trade & Investment Advisor - India

# Welcome

- Agriculture is the cornerstone of the Indian economy, and the industry is a primary source of livelihood for the majority of the population. India is considered a global agricultural powerhouse, exporting a variety of crops worldwide.
- The sector is going through a disruption, with a pressing need for innovation to meet the demands of a growing population and enhance productivity. Governments have been quick to enter strategic partnerships with private players and international bodies to roll out agri-tech solutions.
- Today, our webinar will focus on:
  - The agriculture and agri-tech landscape in India
  - Opportunities for Northern Ireland companies
- Finally, we will have a Q&A at the end, where we can answer your questions and hopefully whet your appetite for doing business in India.



**INVEST INDIA**

**India – Northern Ireland Business  
Connect**

**November 2024**

# AGRICULTURE OVERVIEW

**1<sup>st</sup>** Arable land ~**180 Million Ha**

**2<sup>nd</sup>** Largest producer of **Fruits and Vegetables**

**3<sup>rd</sup>** Largest **StartUp ecosystem** in the world

**54.6%**

Employs **54.6%** of the population

**18.3%**

Share of **Gross Value** Added by Agriculture (2022-23)

**\$53.1 Bn**

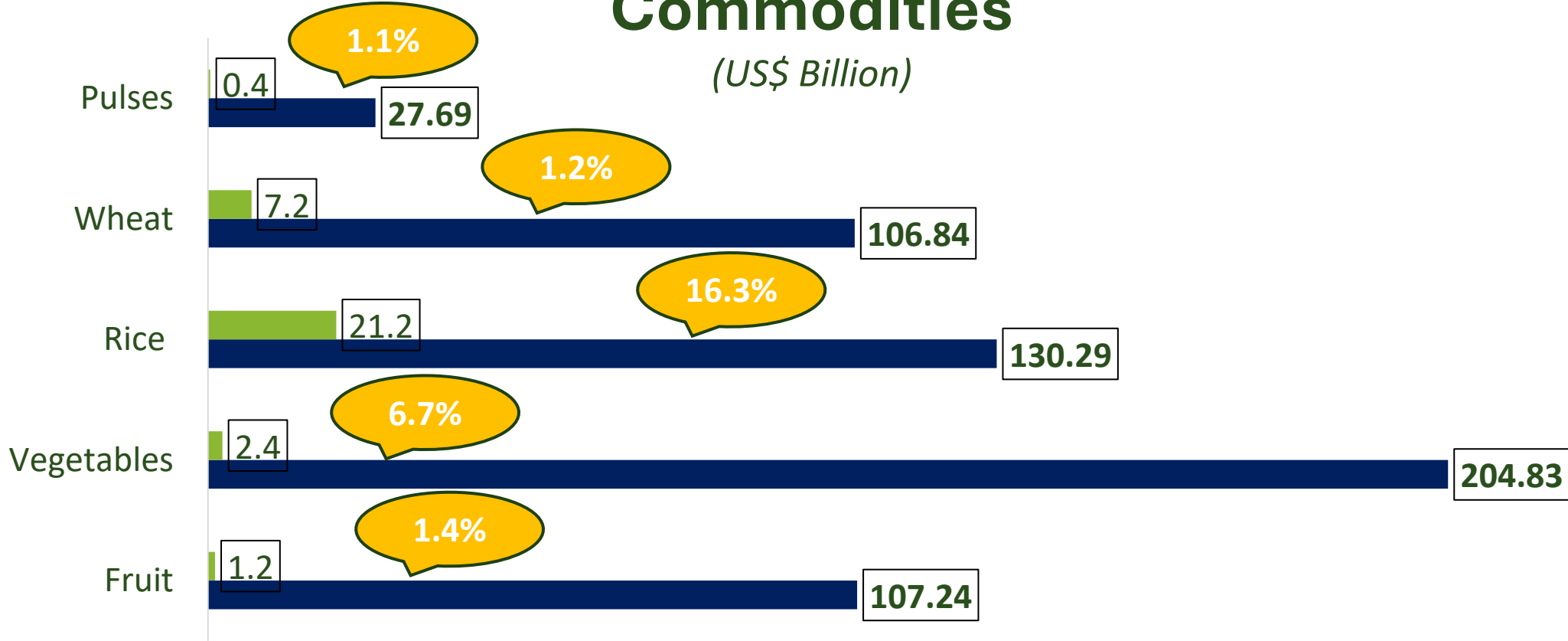
**Exports** of agricultural products (including marine and plantation products FY- 2022-23)

## Market size of Indian Agriculture (US\$ Billion)



## Production & Export of Major Agriculture Commodities

(US\$ Billion)



■ Export (Million Tonnes)

■ Production (Million Tonnes)

■ Export-to-Production Percentage

# AGRICULTURE: FDI & TRENDS

Agritech startups raised

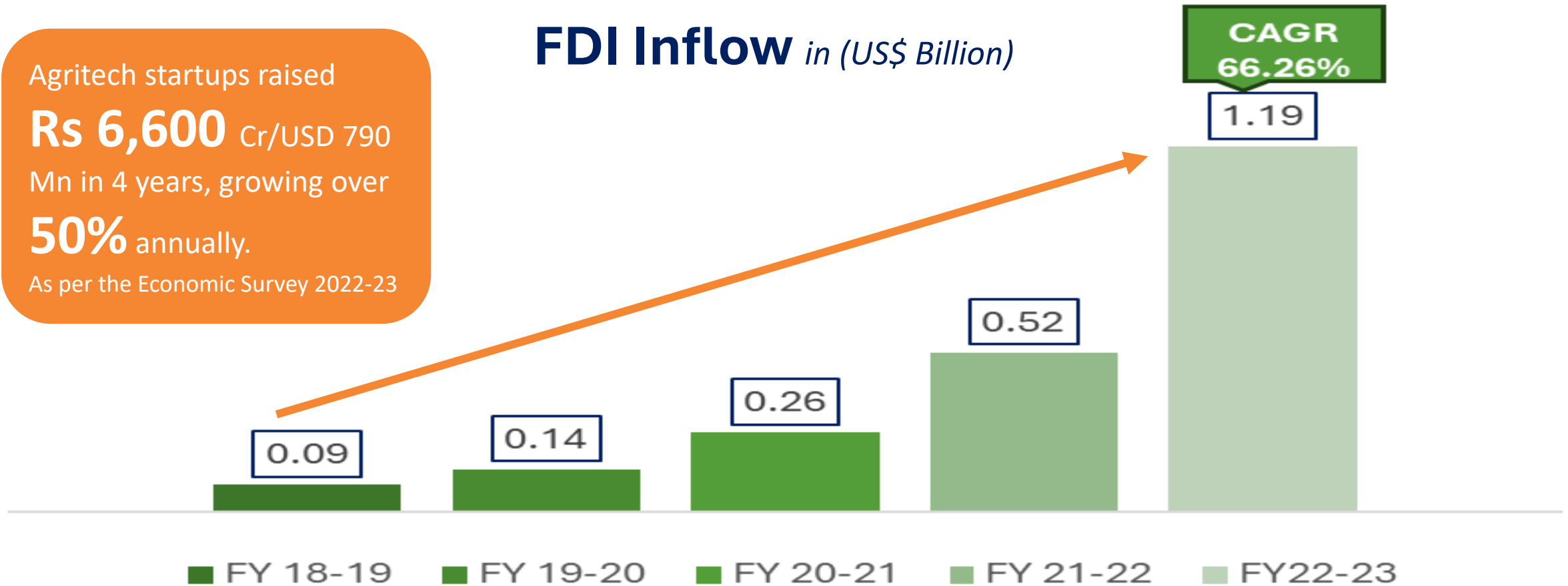
**Rs 6,600** Cr/USD 790

Mn in 4 years, growing over

**50%** annually.

As per the Economic Survey 2022-23

## FDI Inflow *in (US\$ Billion)*



**100%** FDI permitted through the Automatic Route

- Agriculture
- Plantations
- Animal Husbandry

\*FDI includes Agriculture Machinery and Agriculture Services which includes Horticulture, Hybrid Seeds & Plantation and other Agriculture services)



## Growing Sectors in Agriculture



### Horticulture

- **Exports (2022-23):**
  - Fruit - **USD 770.70 Mn**
  - Vegetables - **USD 865.24 Mn**
- **Market size** estimated to reach **\$271.25 Mn** by 2030 with a **CAGR of 4.19%**.



### Agri Machinery

- **Exports (2020-21):**
  - Tractor - **\$ 1005 Mn**
  - Non-Tractor Farm Machinery – **\$ 211 Mn**
- Farm equipment market constitute **7% of the global market - tractors contributing over 80%** of its value



### Agrochemicals

- Indian agrochemical market will reach **8.1 USD Billions** in 2025. Currently growing at a **CAGR of 8.92%**
- India is the world's **4th largest producer** of agrochemicals.
- India is the **5th largest exporter** of agrochemicals



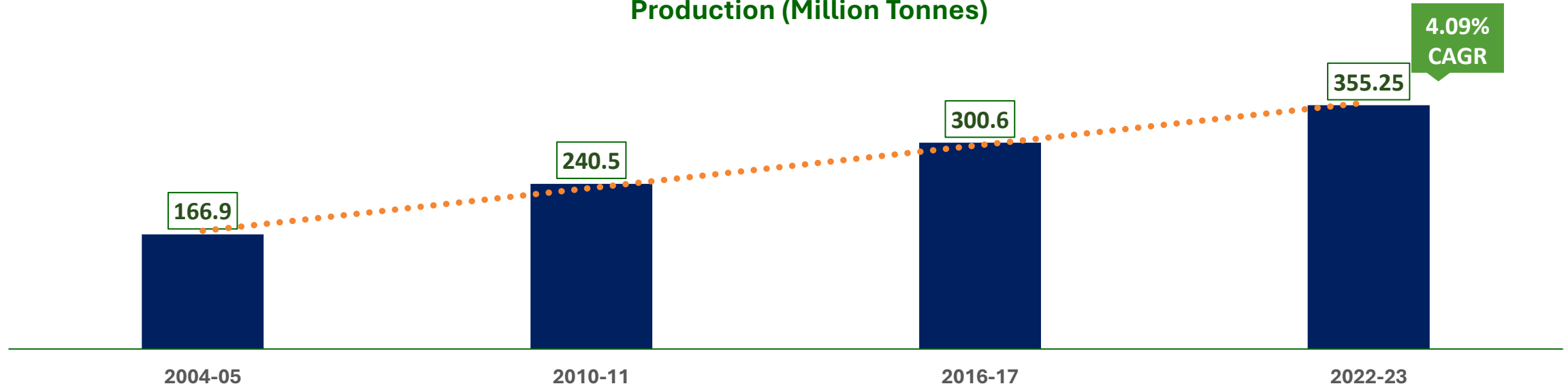
### Agtechs

- Market size estimated to reach **~24 USD Billions** by **2025**
- Total Funding 2022-23: **USD 706 Mn**

Share of Gross Value Added to Agriculture is 33% in FY 2022

## Key Highlights

### Production (Million Tonnes)



### Production

Fruits - 112.08 MT; Végétales - 209.39 MT  
(23-24, 1st Est)  
Horticulture Area increased from 8.44 Mn Ha  
in 2004-05 to 28.34 Mn Ha in 2022-23

### Exports

Fruits: USD 770.70 USD Mn  
Vegetables: USD 865.24 Mn  
(2022-23)

### Export Destination

UAE, Bangladesh, Nepal, Malaysia,  
Netherland, Sri Lanka, UK, Qatar, Oman, and  
Iraq

Share of Gross Value Added to Agriculture is 33% in FY 2022

## Drivers

Growing numbers of  
small and Marginal  
Farmers

Better income for  
small farmers

Policy Support

## Investment Opportunities



**Agri Inputs:** Planting material Production;  
Crop Specific Fertilisers, crop protection, etc



**Infrastructure Development** including cold  
chain, processing facilities, R&D for  
processing and packaging, and farm  
preservation systems



**Processing of F&V** with export orientation



## India has the largest tractor industry in the world

### Key Highlights

#### Year wise Sale of Tractors and Power Tillers (No)



#### Production

Tractor Production 2023 – 9,85,968

#### Exports

Export of Tractors during April-October 2022-23 - 857 Million

#### Export Destination

United States (\$627M), Netherlands (\$106M), South Africa (\$81.8M), Brazil (\$81.7M), and Bangladesh (\$73.5M)

India has the largest tractor industry in the world

## Drivers

**Under-penetration  
of the Market**

**Access to  
finance**

**Govt Support**

## Investment Opportunities



**Precision Farming Technology:** Integrating technology like robotics, GPS, autonomous vehicles for variable rate application, etc



**Drone Technology:** Rising demand of drones for Mapping, Crop Monitoring, Spraying, etc



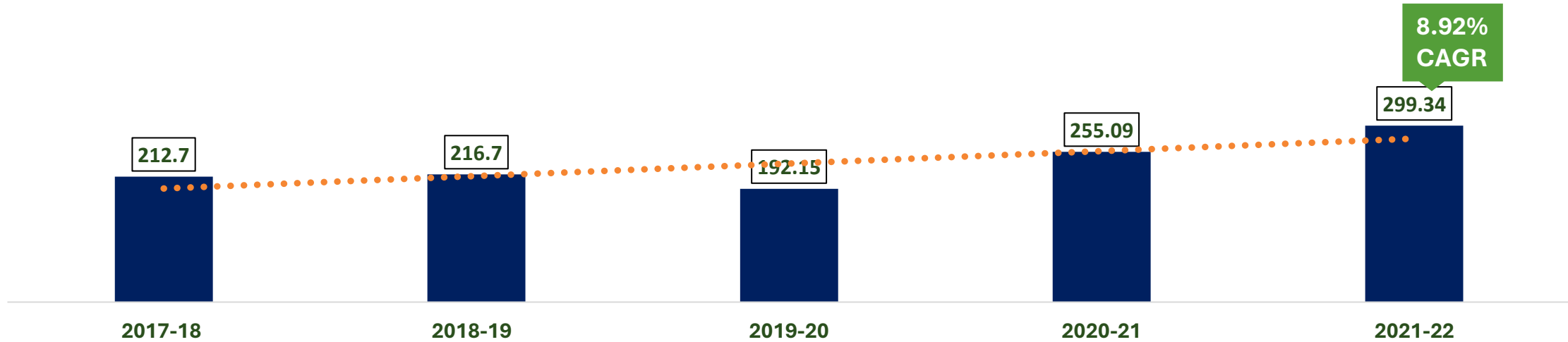
**Small sized Agri machinery** and Crop Residue Management Machinery



India ranks 4th globally in agrochemical production, manufacturing over 50% of technical-grade pesticides, and exporting nearly 50% Agrochemicals worldwide

## Key Highlights

Pesticides and Insecticides Production (000'MT) in India



### Production

All India Production of N and P2O5 :  
43,743.0 (000 tonnes)

### Consumptions

India's consumption at 0.6 kg/ha against 5–7 kg/ha in the UK and 13 kg/ha in China

### Exports

Second largest exporter globally  
Destination: Latin America, North America, Europe and Asia

India ranks 4th globally in agrochemical production, manufacturing over 50% of technical-grade pesticides, and exporting nearly 50% Agrochemicals worldwide

## Drivers

Production of Off Patent Molecules

Decrease in arable land- Food Security

Growing Awareness

## Investment Opportunities



**Specialty Fertilizer:** Market to reach \$1.77Bn by 2030, 6.69% CAGR. Water-soluble fertilizers accounts for 78.5% primary nutrient use.



**Biologicals:** The segment constitute only 3% of India crop protection, compared to 10-15% globally



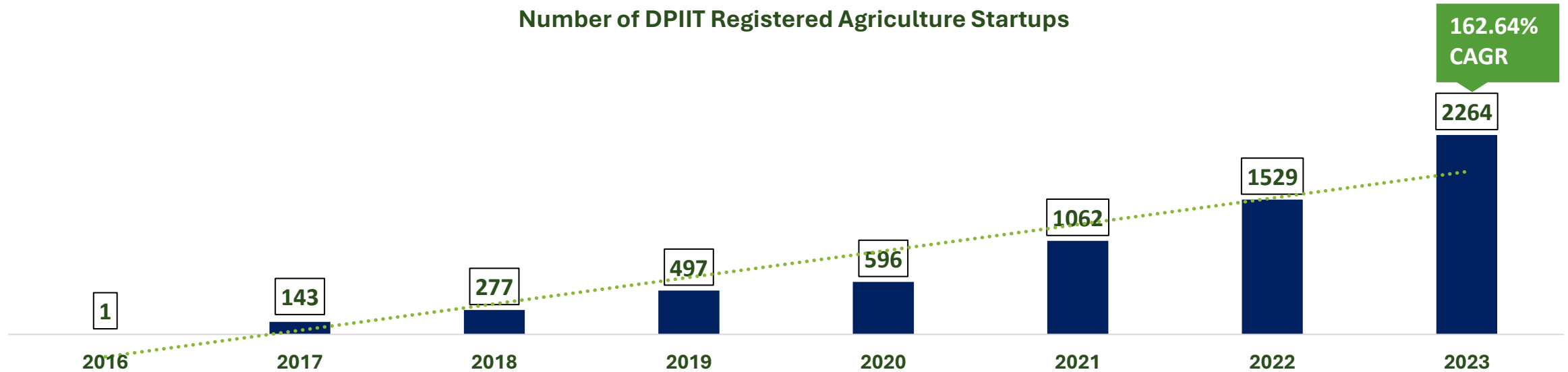
**Herbicide:** Herbicide Market is projected to reach \$558.17 Mn by 2029, with a 9.06% CAGR from 2024 to 2029



Share of Gross Value Added to Agriculture is 33% in FY 2022

## Key Highlights

Number of DPIIT Registered Agriculture Startups



### Number

#12264 (approx)  
AgriTech startups in India

### Growth

The agritech sector has raised \$1 Bn  
in funding between 2014 and 2021

### Ecosystem

3<sup>rd</sup> Largest Start-up Ecosystem in the world



Share of Gross Value Added to Agriculture is 33% in FY 2022

## Drivers

**Increasing  
Farmer  
Awareness**

**Growing  
Internet  
Penetration**

**Government  
Initiatives**

## Investment Opportunities



**Software-as-a-Service (SaaS):** Data-driven diagnostics for soil and crop health. Also, strengthen Agri Supply chains- F2F



**Farming-as-a-Service (FAAS):** Agri equipment renting is another area likely to see market traction

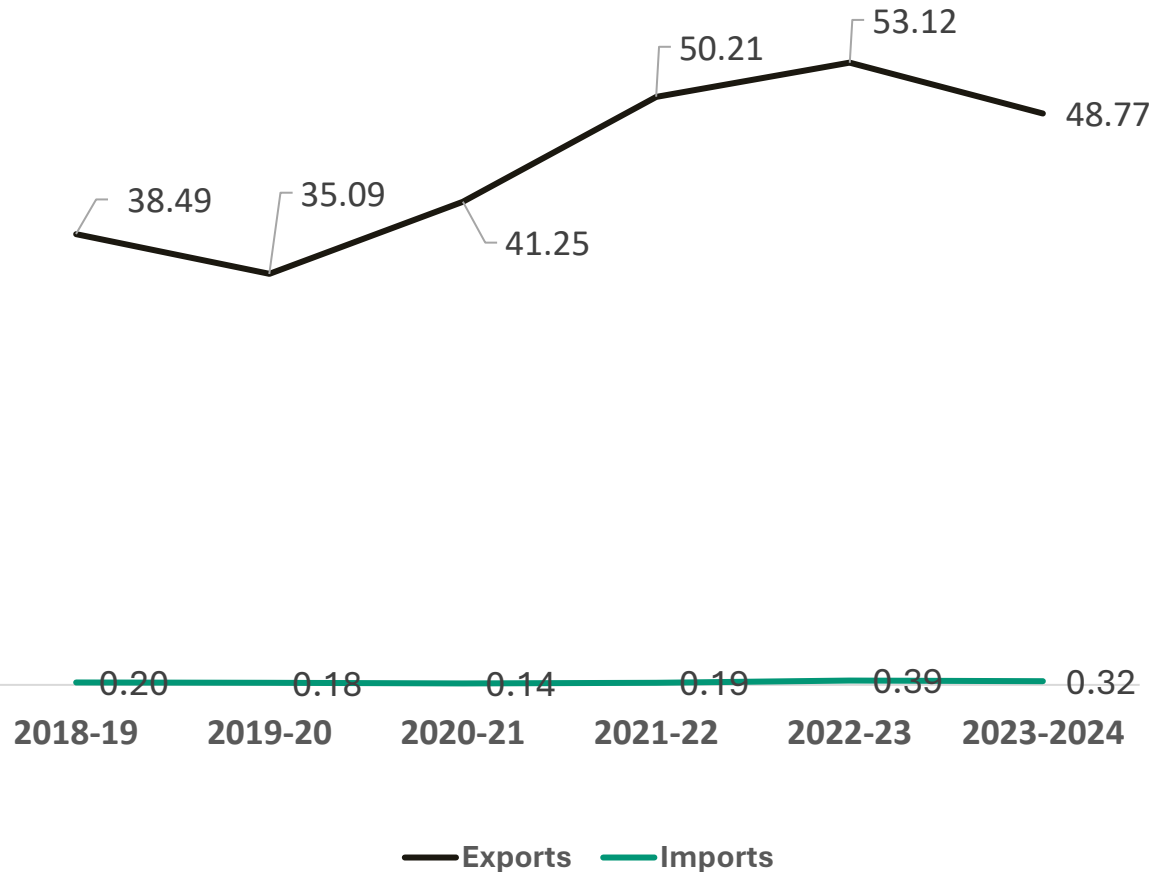


**Quality Testing:** labs and infrastructure can be a major enabler for enhancing trade and promoting exports of Agri commodities



Agriculture Contribution: UK : GDP contribution: 0.5% (2021); India: GVA contribution: 18.3% (2022-23)

## Agri-Food Trade Overview India <> UK



### Highlights

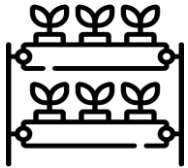
- **India UK FTA** currently under discussion and 13 rounds of negotiations have been concluded
- **Major exports to UK:** Fish and Crustaceans, Molluscs and other aquatic Invertrabates, Edible Fruits and Nuts, Coffee, Tea, Mate, Spices, Cereals, etc.
- **Major imports to India:** Beverages, Spirits and Vinegar

Agriculture Contribution: UK : GDP contribution: 0.5% (2021); India: GVA contribution: 18.3% (2022-23)

## Investment Opportunities India <> UK



**Precision Agriculture:** to maximise the quality and productivity of the overall yield while minimizing the impact on the environment.



**Vertical farming:** structures and technologies can be leveraged by India for mitigating the Food and Nutritional security issues. Additionally, these structures enable plant growth in layers; increasing productivity whilst reducing wastage

**Agricultural biotechnology:** can assist to address soil toxicity issues, with the added bonus of minimizing the impact to the environment



**Clean Agri-tech:** Technology transfers for decarbonising Indian agriculture sector and help food supply chain become more sustainable



**Agri engineering/ Farm equipment manufacturing** - emerging expertise in agricultural building design, engineering, and materials to optimise productivity and animal welfare and reduce environmental impact.



## Largest Population in the World

With over 1.4 billion people, India has the largest population in the world, offering a massive market for investment



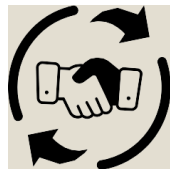
## 38.6% are Adolescents and Youth

Adolescents and Youth constitute 38.6% of India's total population, estimates suggest that one-fifth of the world's adolescents and youth reside in India.



## 84.8 B USD FDI in FY 22

India's FDI inflows reached record levels, at US\$ 84.84 billion during 2021-22.



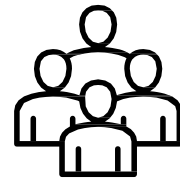
## Access to Free Trade Agreements

India has signed free trade agreements with 13 countries, offering investors preferential tariffs and access to wider markets.



## Ease of Doing Business

In World Bank's Ease of Doing Business Ranking India has jumped 79 positions from 142nd in 2014 to 63rd in 2022.



## Skilled Workforce

India has a large pool of skilled and talented individuals, including the third-largest group of scientists and technicians globally



## Startup Ecosystem

India has the 3rd largest startup ecosystem in the world; expected to witness YoY growth of 12-15%



## Government Initiatives

The Indian government actively promotes FDI through various initiatives, including relaxation of regulations, tax breaks, and the development of special economic zones.

# ABOUT INVEST INDIA



GPTW Survey  
2018 & 2019



UNCTAD  
United Nations

Conference on Trade and  
Development



United Nations  
Conference on Trade and  
Development



Indian Ocean Rim Association



# Thank you

---

Contact us:

[agriculture@investindia.org.in](mailto:agriculture@investindia.org.in)





**INDIA MARKET OPPORTUNITIES**  
**Invest Northern Ireland: Agriculture,  
Agri-Tech, and Allied Sector**

# Table of Content

<b>1. Agricultural Equipment and Machinery in India</b>	<b>3</b>
a. Agricultural Equipment and Machinery in India: Overview	4
b. Agricultural Equipment and Machinery in India: Trends	6
c. Agricultural Equipment and Machinery in India: Opportunities	10
<b>2. Agri-Tech in India</b>	<b>12</b>
a. Agri-Tech: Overview	13
b. Agri-Tech: Trends	15
c. Agri-Tech: Opportunities	17
<b>3. Challenges in Agriculture, Agri-Tech and allied sectors</b>	<b>18</b>
<b>4. Market Entry Routes</b>	<b>21</b>
a. Agri-Tech Trade Events in India	16







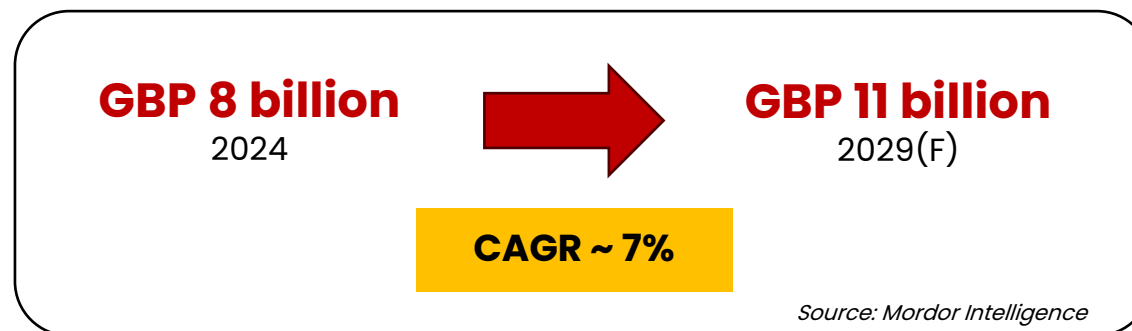
# Agricultural Equipment and Machinery in India

**T&A**  
we go beyond

# Agricultural Equipment & Machinery in India: Overview

*Indian agriculture equipment market dominated by harrows, rotavators and combined harvesters*

## Agriculture Machinery Market Size (GBP billion)



## Agricultural Equipment/ Machinery Segments



### Equipment

- Harrows
- Rotovators
- Seed & Fertilizers Drill



### Irrigation Machinery

- Sprinkler Machinery
- Drip Irrigation
- Machinery



### Harvesting Machinery

- Forage Harvesters
- Combined Harvesters



### Heavy/Light Machinery

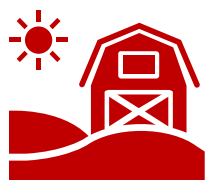
- Tractors
- Sprayers
- Cutters
- Shredders



*Indian agriculture equipment market dominated by harrows, rotavators and combined harvesters*

## Market Dynamics

India's agriculture machinery market is influenced by the following factors:



Farm size

Indian farms range from marginal (under 1 hectare) to large (over 10 hectares).<sup>\*6</sup>



Crop Type

Major Indian crops: rice, maize, wheat, cotton, sugarcane, pulses, tea, rubber.<sup>\*7</sup>



Geographical location

India has 15 agro-climatic zones, ~160 million hectares of arable land, and 8 major soil types, including alluvial, black, red, and yellow soils.<sup>\*8</sup>



Farmer income levels

Agricultural incomes range from GBP 160-250 in Punjab to GBP 40-65 in Jharkhand.<sup>\*9</sup>



6. Press Information Bureau, Government of India  
7, 8. T&A Analysis  
9. Hindu Businessline

# Agricultural Equipment & Machinery in India: Trends

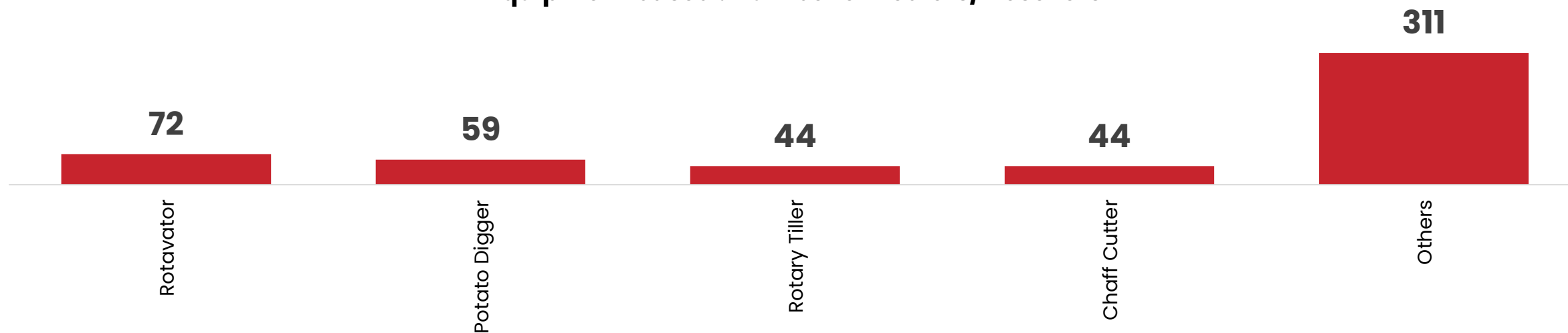
*Northern states have an appetite for agricultural equipment/ machinery due to higher farm mechanisation and prominence of dealers, resellers and manufacturers in the region*

**117** agricultural equipment manufacturers, dealers, and resellers provide **185** machinery types. <sup>\*10</sup>

Partnering with Indian dealers is vital for accessing their **market** and **distribution networks**.

Some of the machinery/ equipment prominently supplied by the manufacturers/ dealers and resellers are listed below:

**Equipment based : Number of Dealers/ Resellers**



# Agricultural Equipment & Machinery in India: Trends

*Northern states have an appetite for agricultural equipment/ machinery due to higher farm mechanisation and prominence of dealers, resellers and manufacturers in the region*

## Demand and Supply Landscape of Agricultural Machinery

Equipment Name	Manufactured/Imported	Main Demand Regions in India	Main Export Markets
Rotary Tillers, and Rotavators	Manufactured	All over India	Neighbouring countries, Asia, Europe
Maize Plucking and Shelling Machines	Manufactured	Northern states, Southern states	Neighbouring countries, Asia, Europe
Paddy Transplanters, Combine Harvesters	Imported	Northern states	N/A
Sugarcane Harvesters	Imported	Maharashtra, Uttar Pradesh	N/A

*Source: T&A Primary Research*

## Geographical Presence of Manufacturers, Dealers and Resellers in India

State	No. of Companies
Punjab	60
Gujarat	25
Haryana	16

*Source: T&A Primary Research*

High concentration of dealership networks

Indian dealerships mainly trade local agricultural machinery. <sup>\*11</sup>



Indian agri-machinery imports include balers and harvesters, with Europe at **GBP 36 million**.

In 2023, India imported ~ **GBP 36** million in agricultural machinery from Europe. <sup>\*16</sup>

## Imports of Agricultural Equipment/ Machinery by HS Code 2023

HS Code	Imports
8437	162
8433	116
8436	66
8433	60

Source: ITC Trade Map, UN Comtrade

China accounts for **~62%** of agricultural machinery imports.

**China, Japan, and Thailand** account for **~76%** of India's agricultural machinery imports.

- European countries account for **~12%** of agri-machinery imports. <sup>\*14</sup>
- The **Netherlands, UK, Italy, Belgium,** and **Germany** are key European countries for India's imports. <sup>\*15</sup>



Indian agri-machinery imports include balers and harvesters, with Europe at **GBP 36 million**.

## Key Imported Agricultural Equipment/ Machinery

**Rice harvesters** are imported, especially in Punjab and Haryana, to supplement local production. \*19

**Balers** are imported from **Turkey** and **Italy** for compressing and baling crops. \*20

Paddy transplanters and sugarcane harvesters are imported from China for **Punjab, Haryana, Maharashtra, and Uttar Pradesh**. \*21

>90% of Balers and Combine Harvesters are imported in India. Countries contributing are:



**GERMANY**



**ITALY**



**FRANCE**

Source: Primary Research



*Northern Irish companies can customize products for India and partner with local importers for cost efficiency.*

Indian agriculture machinery sector offers ample opportunities for innovation and growth:



### **Tailored Solutions:**

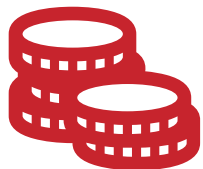
- Customizing for local needs
- Optimizing for cost-efficiency
- Leveraging technology for productivity



### **Strategic Partnerships:**

- Collaborations, tech transfers, and R&D investments enable customized solutions for farmers.

Tailored solutions and contract manufacturing can position India as a manufacturing and export hub



Low cost of manufacturing in India; increasing affordability



India as a key exporting geography to other Asian countries





*Northern Irish companies can customize products for India and partner with local importers for cost efficiency.*

## Key Opportunities for NI Companies in the Agricultural Equipment/Machinery Sector

Sectoral Expertise	Specifics in NI Companies	Matching Demand/Gaps in India
<b>Agri - Machinery/Equipment</b>	Expertise in Agri-Tech comes from Kingspan, McCauley Trailers, Nugent Engineering, and Moore Unidrill Ltd.	Demand for advanced tractors and harvesters in India has surged, boosting sales for Mahindra & Mahindra and Escorts.
<b>Agri-Engineering</b>	Northern Ireland's Agri-Tech sector accounts for 40% of global mobile crushing and screening equipment.	India's agriculture can partner with Agri-Engineering firms to boost efficiency and productivity.

*T&A Analysis*



A person wearing a brown and white checkered shirt is holding a white tablet computer. The background is a greenhouse with rows of young green plants in black plastic mulch. A white banner with a red arrow on the left side is overlaid on the image.

# Agri-Tech in India

Invest  
Northern  
Ireland



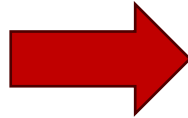
**T&A**  
*we go beyond*

India's agri-tech sector is expected to grow from **GBP 13 billion** in 2023 to **GBP 20 billion** by 2028, fueled by government support and private investments.

Agri-Tech can contribute ~ **GBP 480 bn** to India's GDP by 2030, a **50%** increase from 2020

## Smart Agriculture Market Size (GBP billion)

**GBP 13 billion**  
2023



**GBP 20 billion**  
2028

Agri Tech Segments	Market Size
Market linkages – farm inputs	GBP 1.3 billion
Precision agriculture and farm management	GBP 2.7 billion
Quality management and traceability	GBP 2.4 billion
Supply chain tech and output market linkages	GBP 9.5 billion
Financial services	GBP 3.2 billion

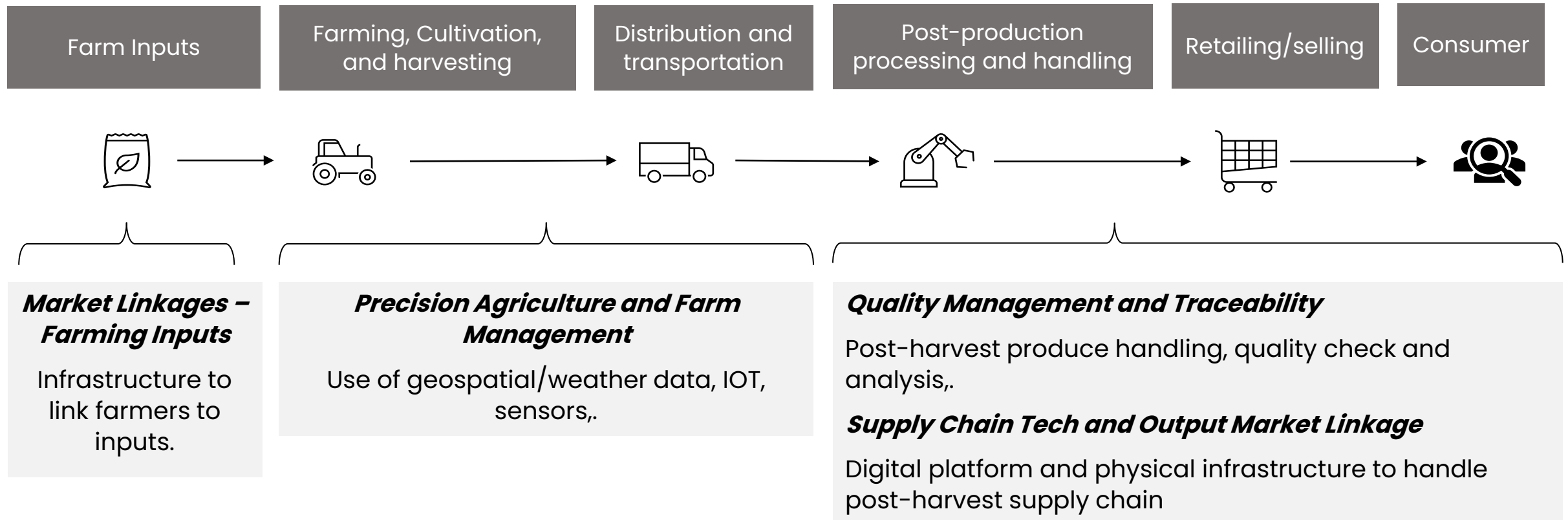
India's agri engineering sector enhances farming with region-specific technologies.

Agri-Tech startups in India increased from under **50** to over **1,000** from 2013 to 2023.

Allocation of ~**GBP 57 million** for digital agriculture by the government.

India's agri-tech sector is expected to grow from **GBP 13 billion** in 2023 to **GBP 20 billion** by 2028, fueled by government support and private investments.

## Agri-Tech Segments Across the Value Chain in India



*Emerging trends in India's Agri-Tech sector include Agri-Fintech, sustainable farming, mechanization, and tech-driven solutions like AI, IoT, and blockchain.*

## Industry Trends

### Emerging trends in India's Agri-Tech sector include -

**Agri-Fintech:** Digital lending and AI tools improve farmers' access to credit.

**Sustainable Farming Practices:** Organic farming and drip irrigation promote sustainability.

**Farm Mechanization:** Affordable leasing and automation boost efficiency.

**Collaborative Ecosystem:** Partnerships support Agri-Tech startups in scaling..

## Favourable Government Initiatives



Uttam Fasal Uttam Enaam

NATIONAL AGRICULTURE MARKET

e-NAM



Soil Health Card (SHC)



AgMarknet

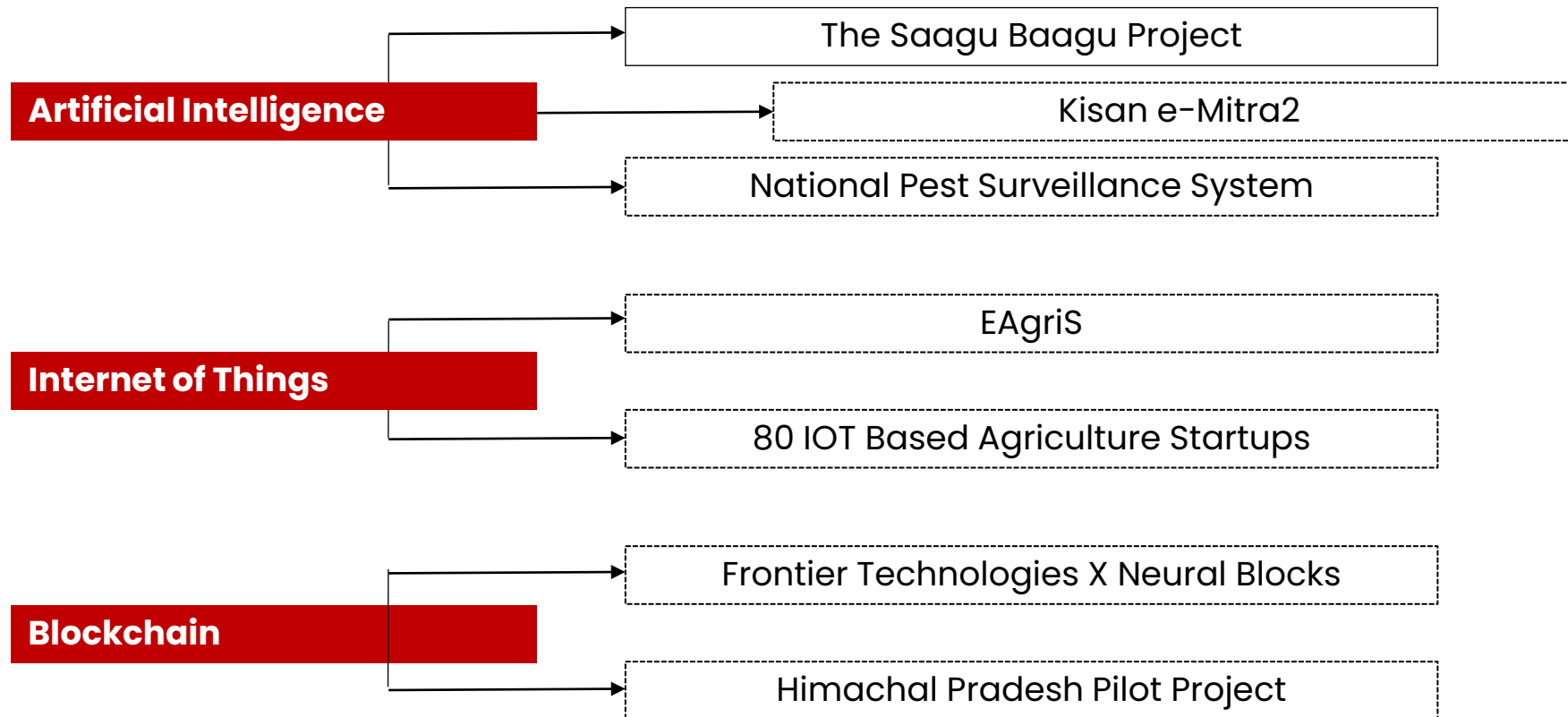


Kisan Drone



*Emerging trends in India's Agri-Tech sector include Agri-Fintech, sustainable farming, mechanization, and tech-driven solutions like AI, IoT, and blockchain.*

## Emerging Technologies in Agri-Tech



Source: EY Analysis, Indian Council of Agricultural Research, Press Information Bureau



*Opportunities in Agri-Tech include advanced software solutions, precision farming, cloud-based platforms, and innovative water management technologies*

Opportunities in Agri-Tech	Specifics in NI Companies	Opportunities in India
<b>Software Solutions</b>	<ul style="list-style-type: none"> <li>➤ Provides a comprehensive range of services, including fabrication components, electronics, hydraulics, and software.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Startups like Ninjacart and DeHaat need components for precision farming and IoT.</li> <li>➤ Growing demand for smart farming solutions.</li> </ul>
<b>Precision Farming</b>	<ul style="list-style-type: none"> <li>➤ Focus on innovative precision farming technologies.</li> </ul>	<ul style="list-style-type: none"> <li>➤ High demand for precision irrigation and crop monitoring technologies.</li> <li>➤ Adoption increasing among farmers.</li> </ul>
<b>Cloud-Based Solutions</b>	<ul style="list-style-type: none"> <li>➤ Companies like Unitas Software and Sixty-5 Technologies offer advanced solutions.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Startups like AgriBolo and CropIn are adopting cloud platforms for farm management.</li> <li>➤ Growing need for digital farm management tools.</li> </ul>
<b>Water Management Solutions</b>	<ul style="list-style-type: none"> <li>➤ RHI Water Ltd. provides rainwater harvesting and greywater recycling.</li> </ul>	<ul style="list-style-type: none"> <li>➤ 80% of water used for irrigation with inefficient methods.</li> <li>➤ Need for effective water management to reduce wastage.</li> </ul>





# Challenges in Agriculture, Agri-Tech and Allied Sectors

Invest  
Northern  
Ireland

**T&A**  
we go beyond



# Challenges in Agriculture, Agri-Tech, and Allied Sectors

*Product to market fit and strategic alliances are key enablers for success in Indian market.*

## Regulatory Challenges

- In India, agricultural equipment incurs a 7.5% Basic Duty + 4% Special CVD.
- In the USA, some agricultural equipment, like balers and threshers, is duty-free.
- The India-UK Free Trade Agreement could eliminate agricultural equipment tariffs

## Regional Disparities



**Regional Tech adoption:**  
Some areas still use traditional methods.



**Market disparities:**  
Northern states show high machinery demand due to large agrarian economies.



**Specialized Equipment Needs:**  
Southern states require equipment suited for plantation crops.



**Landholding Impact:**  
Small landholders often rely on affordable, handheld machinery.



**Awareness and Affordability:**  
Low awareness and high costs hinder adoption of advanced machinery in certain regions.



# Challenges in Agriculture, Agri-Tech, and Allied Sectors

*Product to market fit and strategic alliances are key enablers for success in Indian market.*

## Successful Collaborations

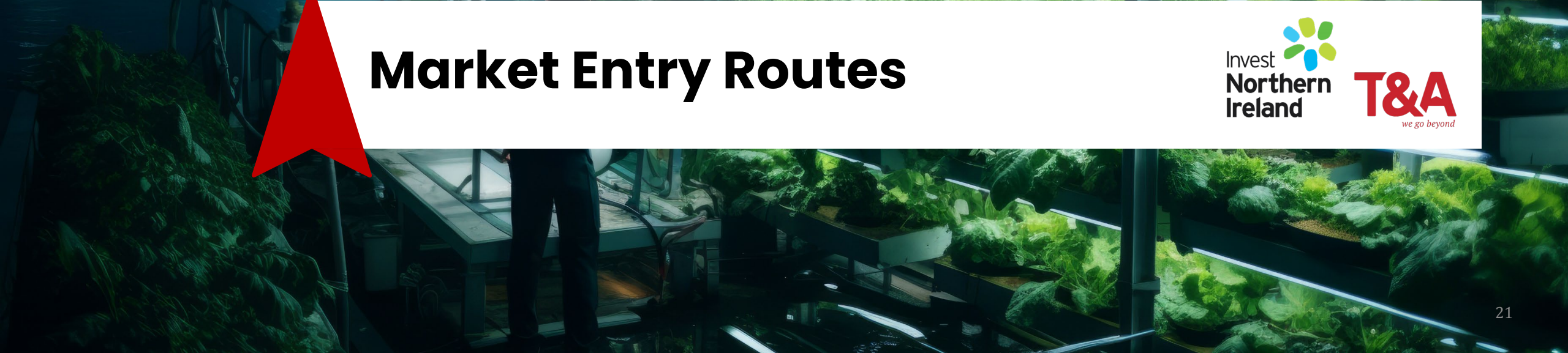


- **Local Adaptation:** Tailored products suited to Indian farming practices.
- **Shared Expertise:** Combined tech prowess with local market knowledge.
- **Distribution Network:** Ensured widespread availability of equipment.
- **Affordability:** Pricing aligned with Indian farmers' purchasing power.





# Market Entry Routes



## Recommended market entry routes to India for NI companies



### Selection of Entry Routes

### Identification of Partner

### Positioning to Target Market



#### Importer/ Distributor

A foreign company may choose to appoint an Indian partner as a distributor under the 'Authorized to Sell' distribution arrangement for the sale of goods/ services



#### Contract Manufacturing

A foreign company may choose to engage with a local Indian partner for contract manufacturing arrangement for manufacturing its product

#### Product Portfolio

Product portfolio alignment with the partner company

#### Market Experience

Prior experience/ representation of foreign Agri companies



Cost efficiency to suit local market needs due to low-cost competitors prevailing in the market.

#### Market Access

Access to dealers, reseller, distributors and sub-distributors

#### Location

Located in metro cities and/ or top 8 cities of India



Geographical positioning to be based on the terrain, types of crops and soil, cultivation and harvest methods.



Collaborations/ Partnerships with Indian agricultural stakeholders i.e., associations, farmer cartels, conglomerates and others.

#### Company Profile

Financial strength, management credentials, team size

#### Industry Expertise

Industry experience, technological expertise, sales staff



Product launch within high-income geographies like Punjab and Haryana to enhance product visibility and sales.



# Agri-Tech Trade Events in India

*Trade events allow agricultural machinery and Agri-Tech companies to showcase their products/services to other stakeholders*



**Date**

15<sup>th</sup> to 17<sup>th</sup> Feb 2025



**Location**

Hisar, Haryana



**Date**

19<sup>th</sup> to 21<sup>st</sup> Feb 2025



**Location**

Greater Noida, Uttar Pradesh



**Date**

1<sup>st</sup> to 3<sup>rd</sup> August 2025



**Location**

Bangalore, Karnataka





# Thank You

