

# **Perspective on Farm Mechanization in India**

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# Agriculture Profile - INDIA

**Second Largest Arable  
Land in the World**

**Highest Arable Land to  
Land Size Ratio**

**Largest Irrigated Land  
Network**

**Favorable & Diverse  
Agro-climatic Conditions**

**Total Land**

**328.72** Mn Ha

**Total Arable Land**

**160** Mn Ha

**Net Area Sown**

**141.89** Mn Ha

**Total Cropped Area**

**192.8** Mn Ha

**Area sown more than  
once**

**50.9** Mn Ha

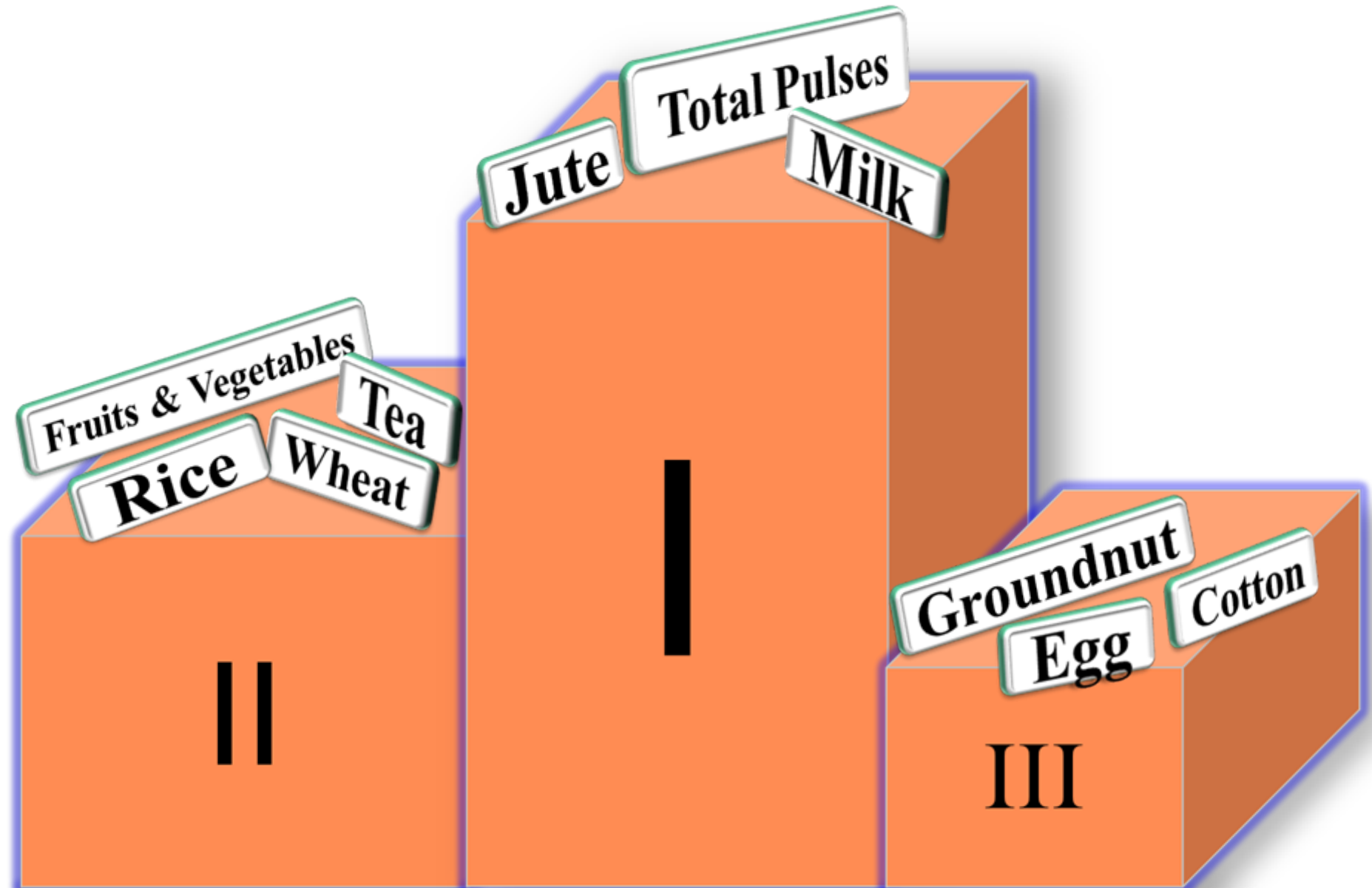
**Net Irrigated Area**

**60.2** Mn Ha

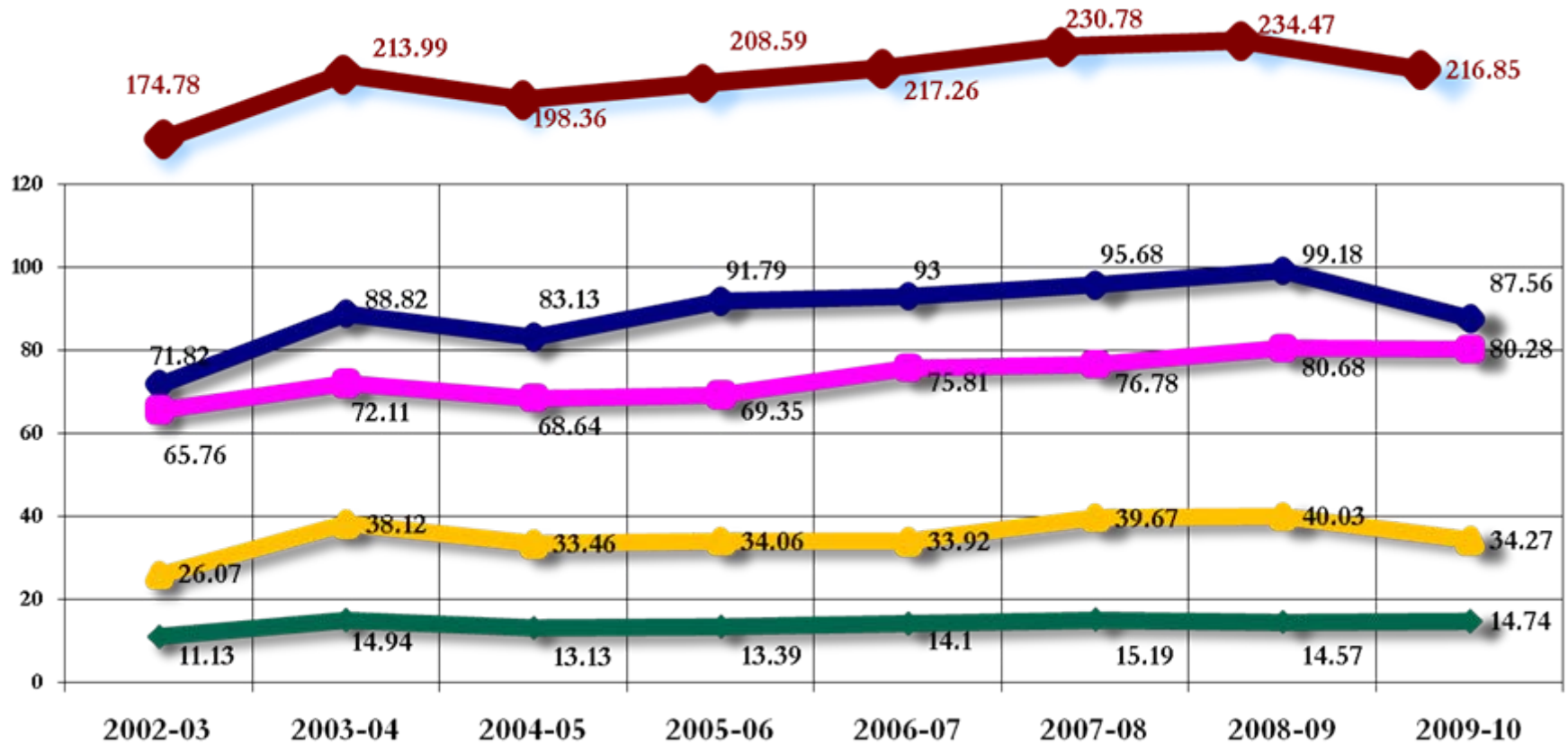
**Agriculture GDP [FY09]**

**Rs 6523.31  
Billion**

# India in the World Agriculture



# Food Grains Production (Million Tonnes)



RICE

WHEAT

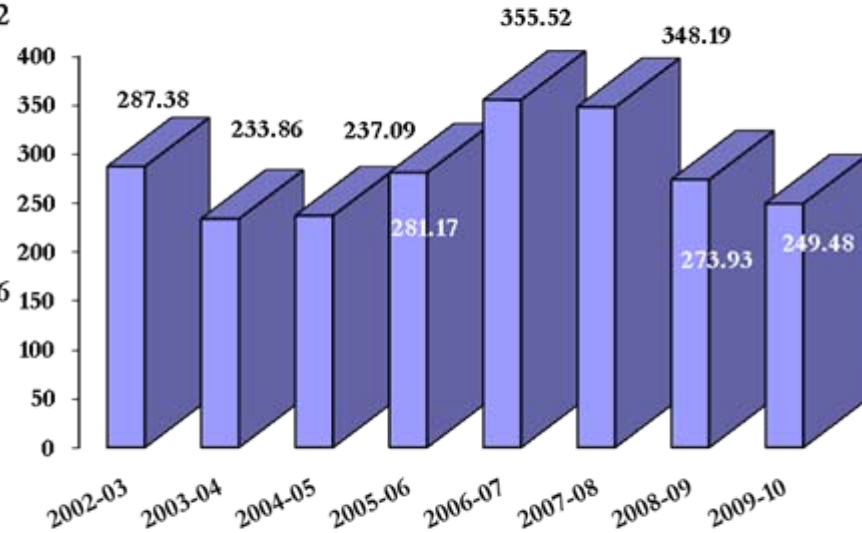
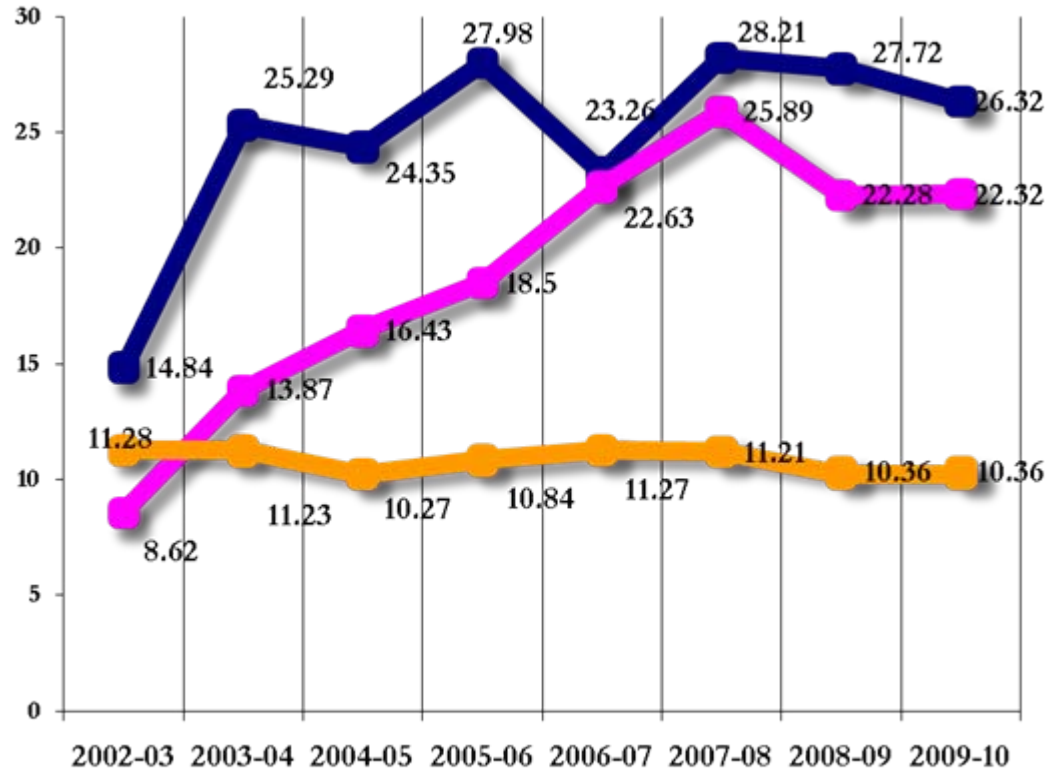
COARSE CEREALS

PULSES

TOTAL FOODGRAIN

2009-10 figures pertain to II Advanced Estimates

# Commercial Crops Production (Million Tonnes)



**OILSEEDS**   **COTTON**   **JUTE & MESTA**

**SUGARCANE**

2009-10 figures pertain to II Advanced Estimates

Cotton – Million bales of 170 kg each   Jute & Mesta – Million bales of 180 kg each

# INDIA – Agriculture Machinery Sector

## Comparison of Mechanization with Other Countries, 2003

Sl. No.	Country	Farm Power (kW/Ha)	No. of Tractors per 1000 Ha.	No. of Combine Harvesters per 1000 Ha.
1.	India	1.36	15.75	0.026
2.	Japan	8.75	461.22	236.98
3.	U.K.	2.50	88.34	8.30
4.	France	2.65	68.50	4.93
5.	Italy	3.01	211.08	4.71
6.	Germany	2.35	79.817	11.41
7.	Argentina	--	10.74	1.79
8.	Brazil	--	13.66	0.915
9.	China	--	6.98	2.53
10	Pakistan	--	16.47	0.08
11	Egypt	--	30.70	0.79

Source: FAO Yearbook 2003

# **INDIA – Agriculture Machinery Sector**

**➤ Indian Farm Equipment Market is expected to grow at a CAGR of ~5%**

**➤ Indian Agriculture Farm Equipment Market is now widely exposed to International Trade**

**➤ Favorable Factors:**

**➤ Monsoon**

**➤ Government Declared Support Prices for Crops**

**➤ Supportive Credit Policy of Banks**

# INDIA – Agriculture Machinery Sector

## Need for Mechanization

➡ Even though Agriculture still Supports the Majority of Indian Population, Yet

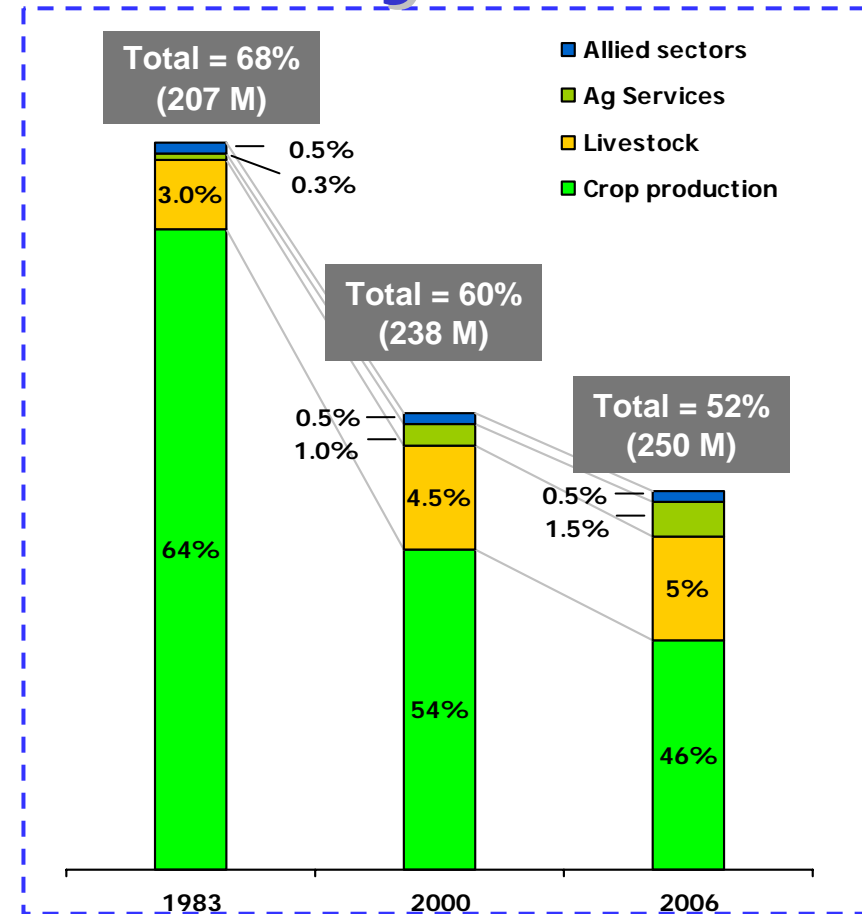
➡ Non-farm activities in rural areas are witnessing a rise in entrepreneurship and employment. As a result, number of people involved in agriculture is declining over the years.

➡ Crop Diversification

➡ Migration

➡ To Achieve Higher Productivity

➡ Monsoon Dependent (less Time lag for Manual Operations)

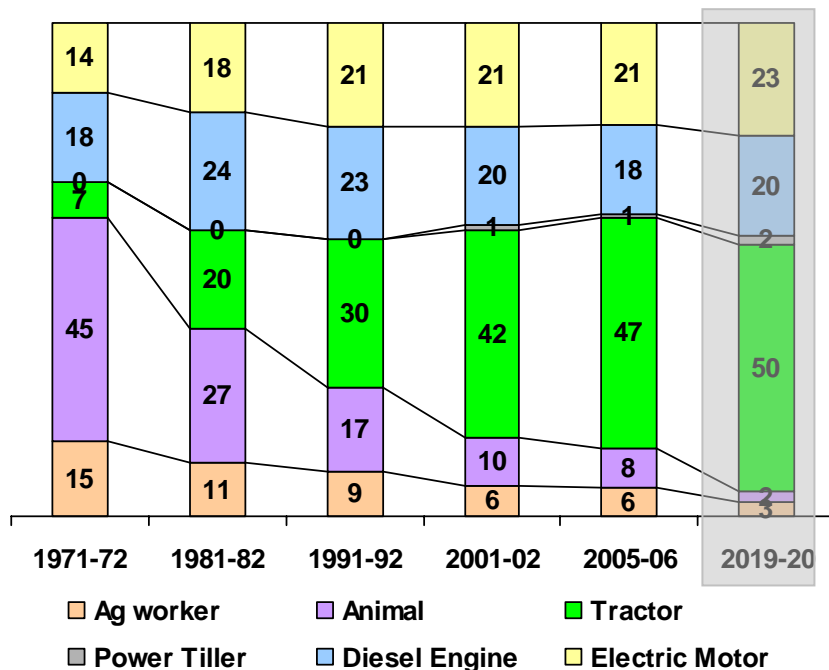


Food grain production (Mt) :	129	210	209
Acreage (M ha) :	125	123	122
Labor/ area :	1.6	1.9	2.0
Tractor Pop. (M) :	0.7	2.5	3.1

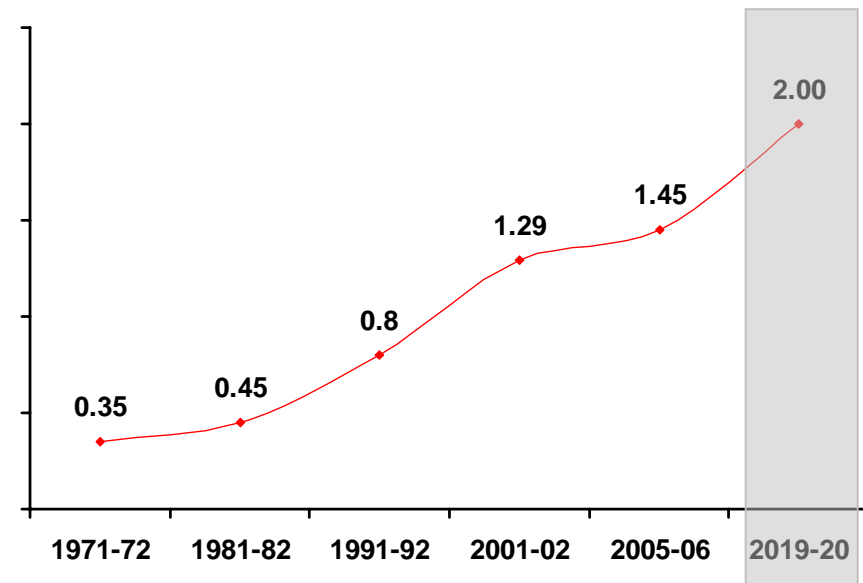
# INDIA – Agriculture Machinery Sector

## ➤ Changing Focus on Agri-mechanization - Automation

Percentage share of Power usage in Indian agricultural sector



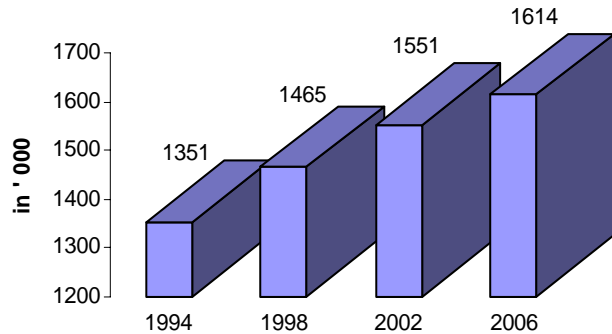
Total Power Consumption (kW/ha)



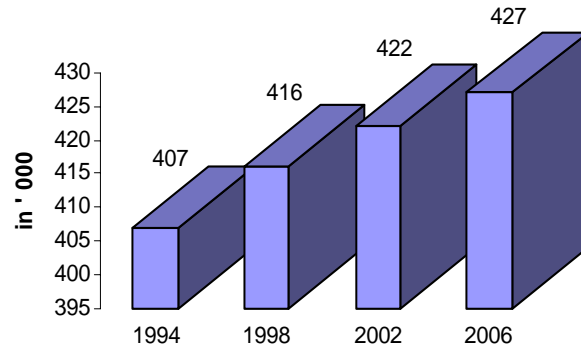
# INDIA – Agriculture Machinery Sector

## 📍 Usage Trends of Major Farm Equipment

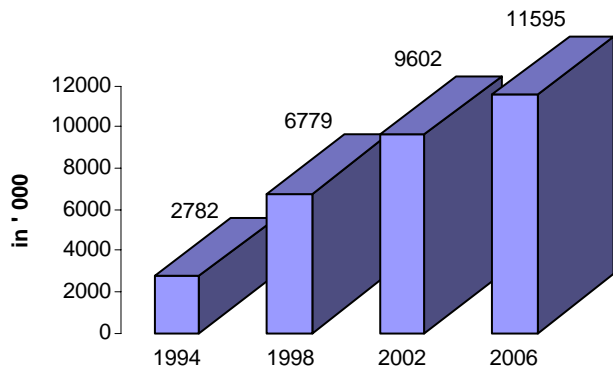
Number of Thresher



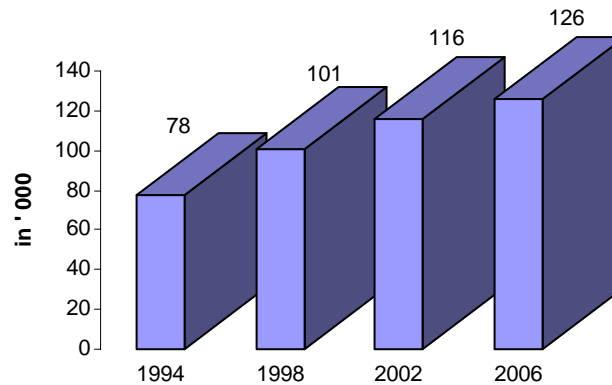
Number of Harvester



Number of Reapers



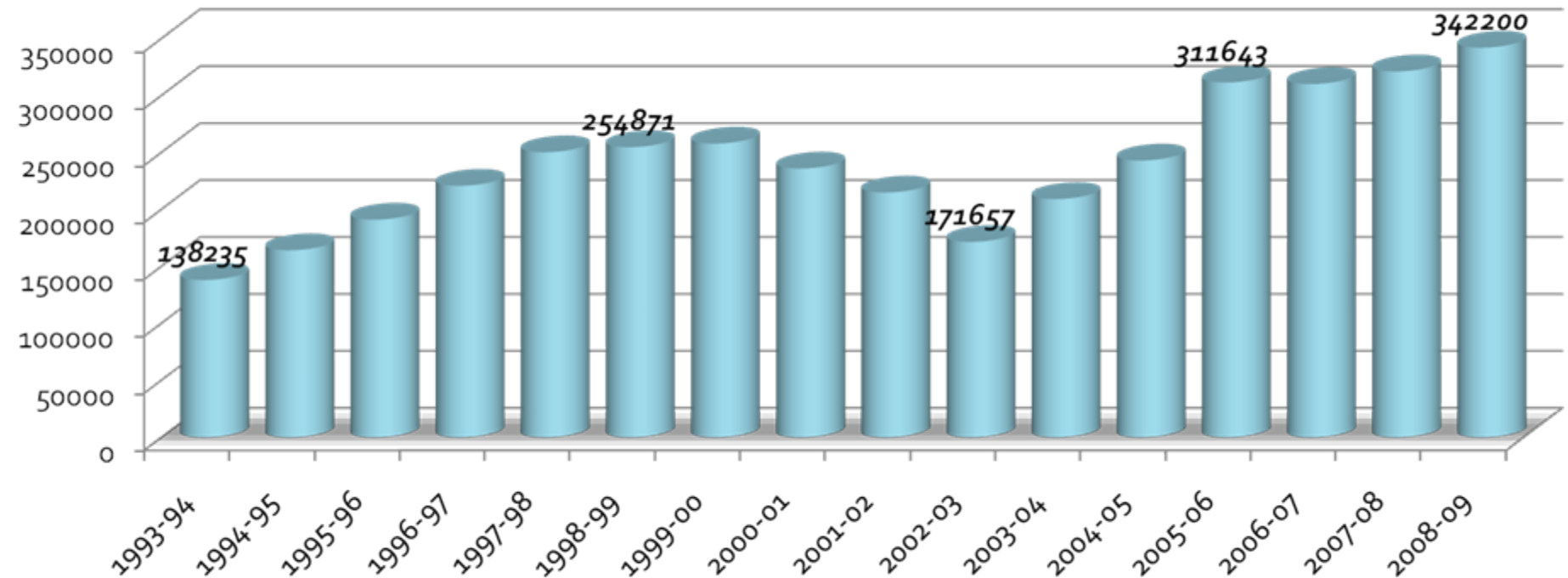
Number of Maize Shellers



# INDIA – Agriculture Machinery Sector - TRACTORS

- Indian Tractor Industry is largest in the world. Accounts for 1/3 of total global production
- During the past four decades, the tractor industry grew at a compounded annual growth rate of 10%

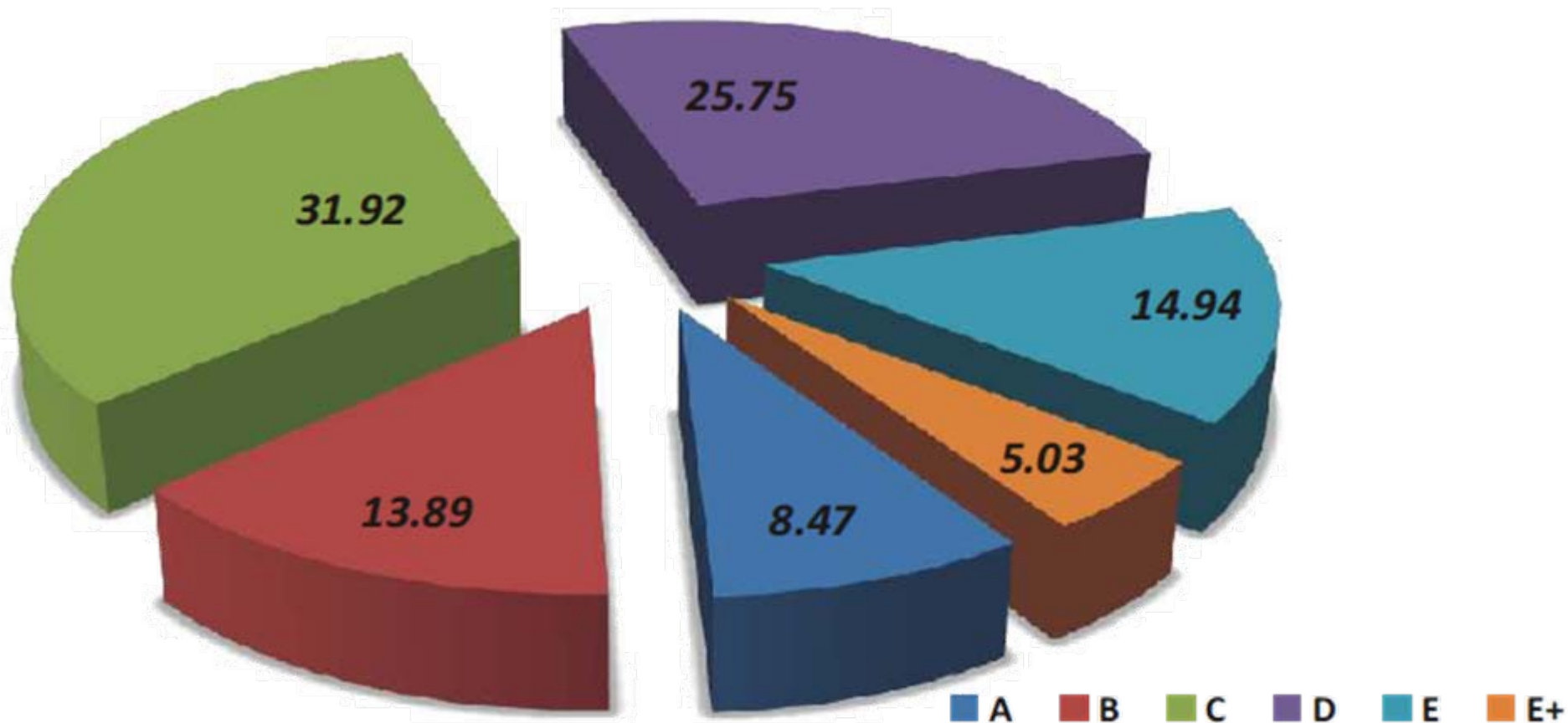
## Domestic Tractor Sales over the years



# INDIA – Agriculture Machinery Sector - TRACTORS

➔ Indian tractor market is traditionally a medium horse-power market, constituting mostly of 31-40 HP tractors, under Class C

## Class-wise Sales of Tractors (Oct - Sep, 08-09)



# Policy Mandate

## ➔ Requirement for Farm Mechanization

- ➔ Farm Power Requirement by 2020: 2KW/Ha
- ➔ Removal of Regional Disparities

## ➔ Infrastructural & Institutional Framework

- ➔ Adequate Engineering Infrastructure at Implementation Levels
- ➔ Effective Training and Extension Service
- ➔ Repair & Maintenance Facilities
- ➔ Machinery Banks for Custom Hiring Services
- ➔ Credit at Simpler Terms

## ➔ Appropriate Farm Machines & Equipments

- ➔ For Small and Marginal Land Holdings
- ➔ Crop Specific & Quality Machines
- ➔ For Hill Agriculture
- ➔ Gender Specific

# **Policy Initiatives by the Government of India to Promote Farm Mechanization**

## **➔ Training**

**➔ Establishment of Four Farm Machinery and Technology Training Institute (FMTTI)**

## **➔ Demonstration**

**➔ Large Scale Demonstration of Equipment at Farmers Field**

## **➔ Incentives for Purchase of Equipment**

**➔ Subsidy Through Macro Management of Agriculture Scheme, National Food Security Mission, National Horticulture Mission. and Similar Other Schemes Available to all Categories of Farmers**

**➔ Incentives for establishment of Machinery Banks at Block Levels for Custom Hiring Services**

## **➔ Identification of Machines**

**➔ Hill Agriculture**

**➔ Gender friendly Tools and Equipments**

**➔ Crop Specific Package of Machines**

# **Policy Initiatives by the Government of India to Promote Farm Mechanization**

## **➔ Manufacturing Sector**

**➔ De-reservation of Manufacturing of Agricultural Machines from Small Scale Sector**

**➔ Training on Manufacturing Technologies Introduced**

## **➔ Quality of Machines**

**➔ Minimum Performance Standards for Tractors, Power Tillers & Combine Harvesters Framed**

**➔ Standard Specifications for All Machines**

**➔ Equipment Promotion Through Subsidy: Testing by FMTTI or BIS certification is mandatory**

## **➔ Credit**

**➔ NABARD Refinance available & Financing Norms Simplified**

## **➔ Agro Processing Sector**

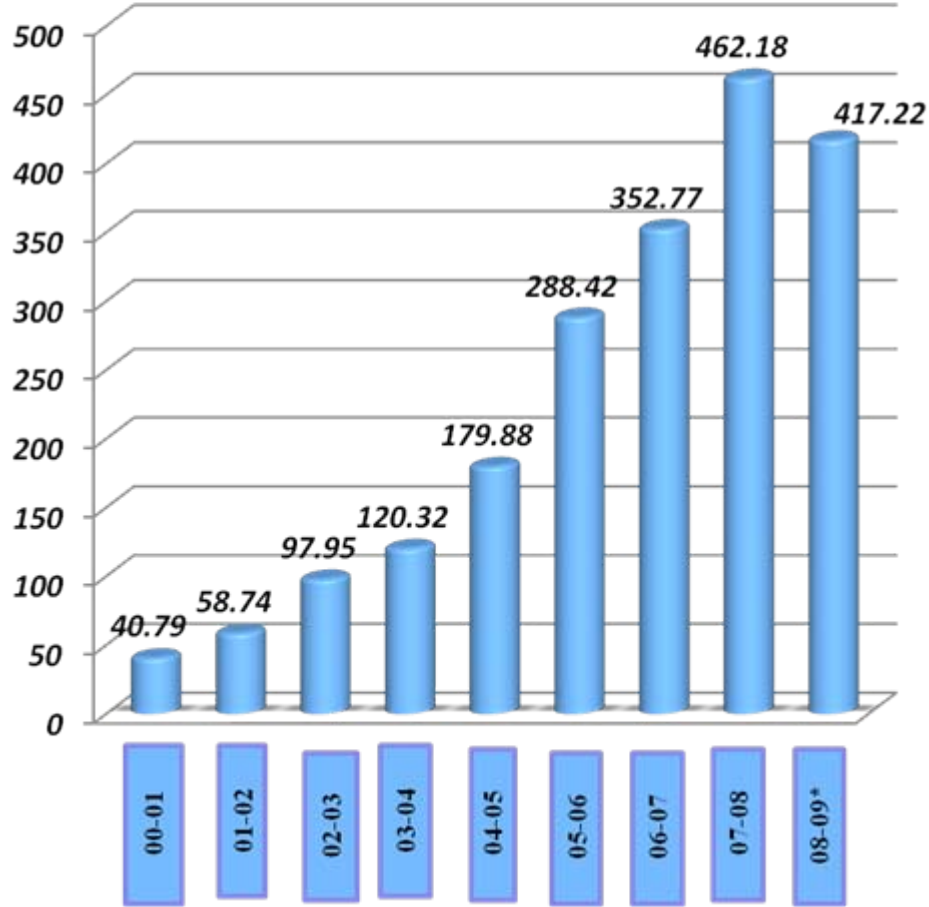
**➔ Scheme on Post Harvest Technology**

**➔ Technologies Developed by ICAR / CSIR Promoted**

# INDIA – Agriculture Machinery Sector – International Trade

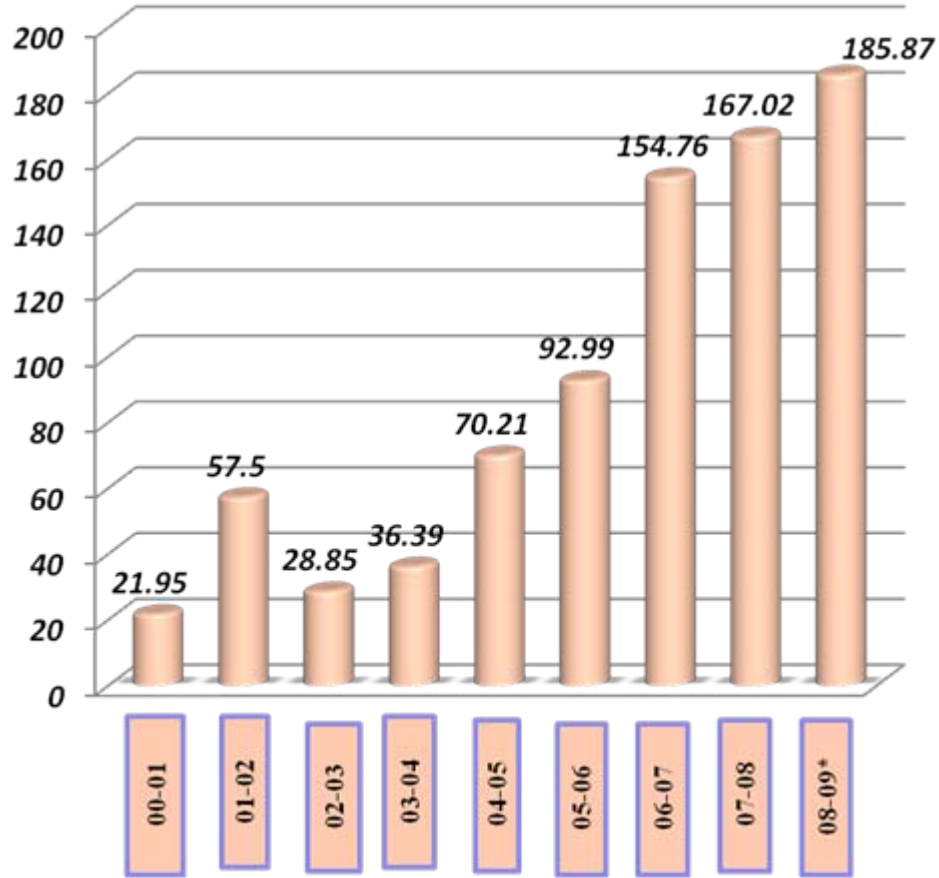
## EXPORTS

Selected Agriculture Equipment Exports  
(Value at Current Prices, USD Million)



## IMPORTS

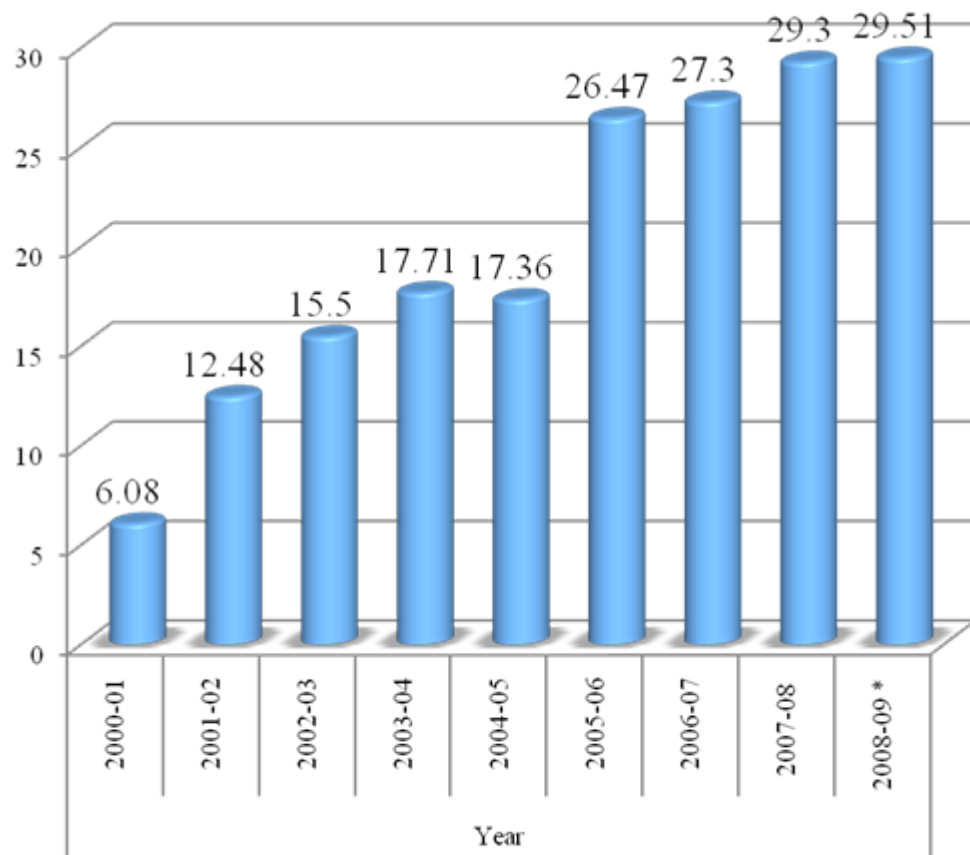
Selected Agriculture Equipment Import  
(Value at Current Prices, USD Million)



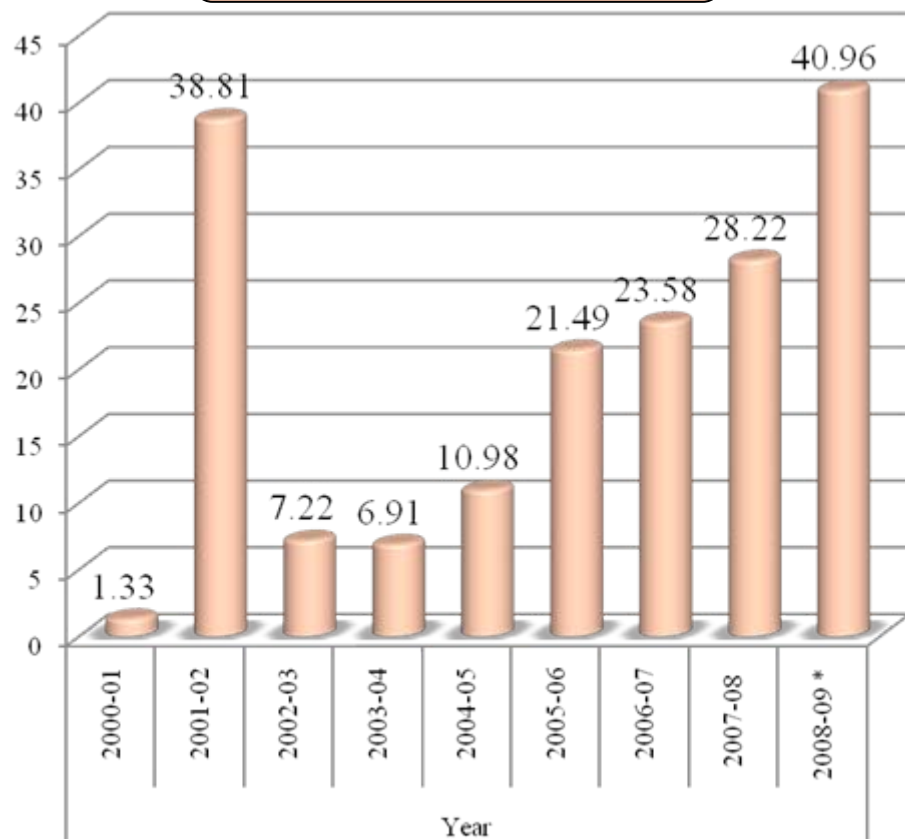
# INDIA – Agriculture Machinery Sector – International Trade

CULTIVATION EQUIPMENTS - Agri / Horticultural Mechanical Sprayers, Ploughs, Disc Harrows, Agricultural and Horticultural Machinery and parts there-of, Seeders, Planters, Transplanters, Manure Spreaders & Fertilizer Distributors, and Mowers including Cultivators Bars for Tractor Mounting

## EXPORTS



## IMPORTS

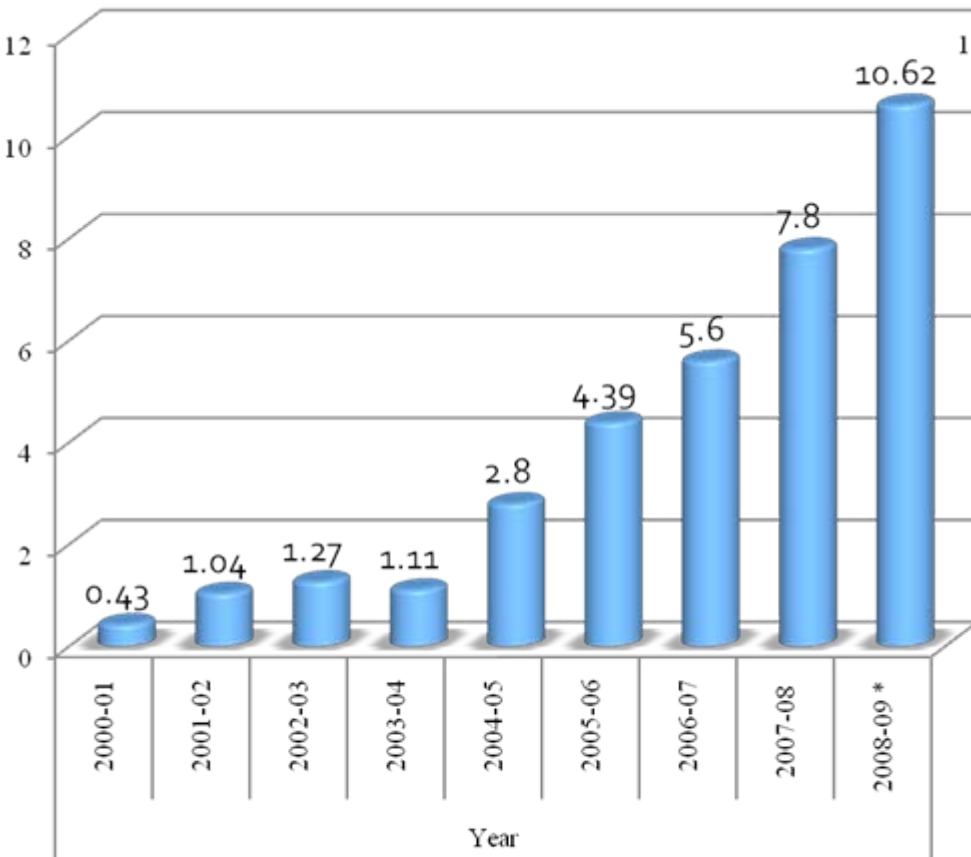


■ Selected Cultivation Equipments Exports [USD Million, Actual... ■ Selected Cultivation Equipments Imports [USD Million, Actual Price

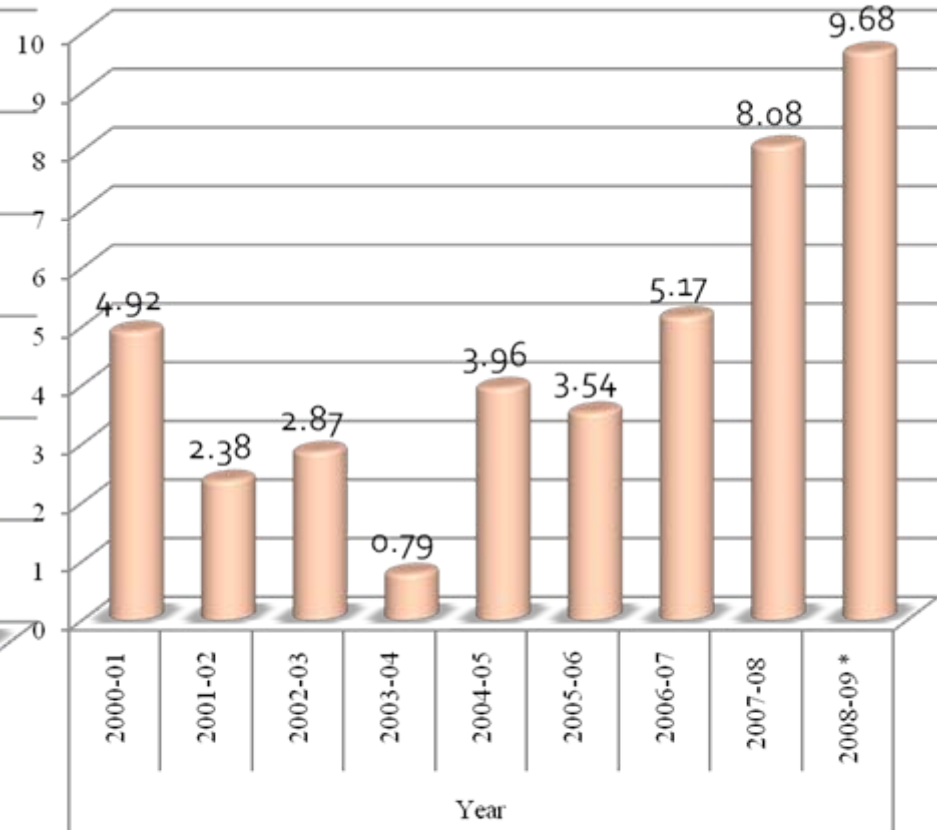
# INDIA – Agriculture Machinery Sector – International Trade

**HARVESTING & THRESHING EQUIPMENTS** - include Straw / Fodder Balers, Combine Harvesters & Threshers, other Harvesting & Threshing Machinery & parts there-of

## EXPORTS



## IMPORTS

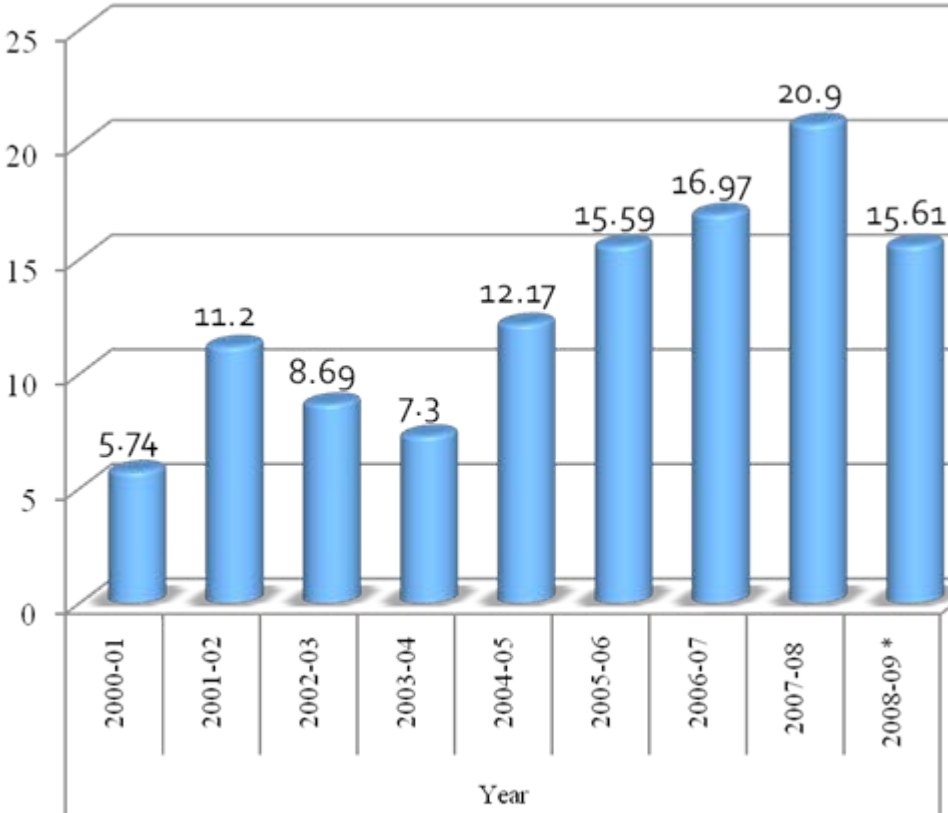


■ Selected Harvesting & Threshing Equipments Exports [USD Million, Actual Prices] ■ Selected Harvesting & Threshing Equipments Imports [USD Million, Actual Prices]

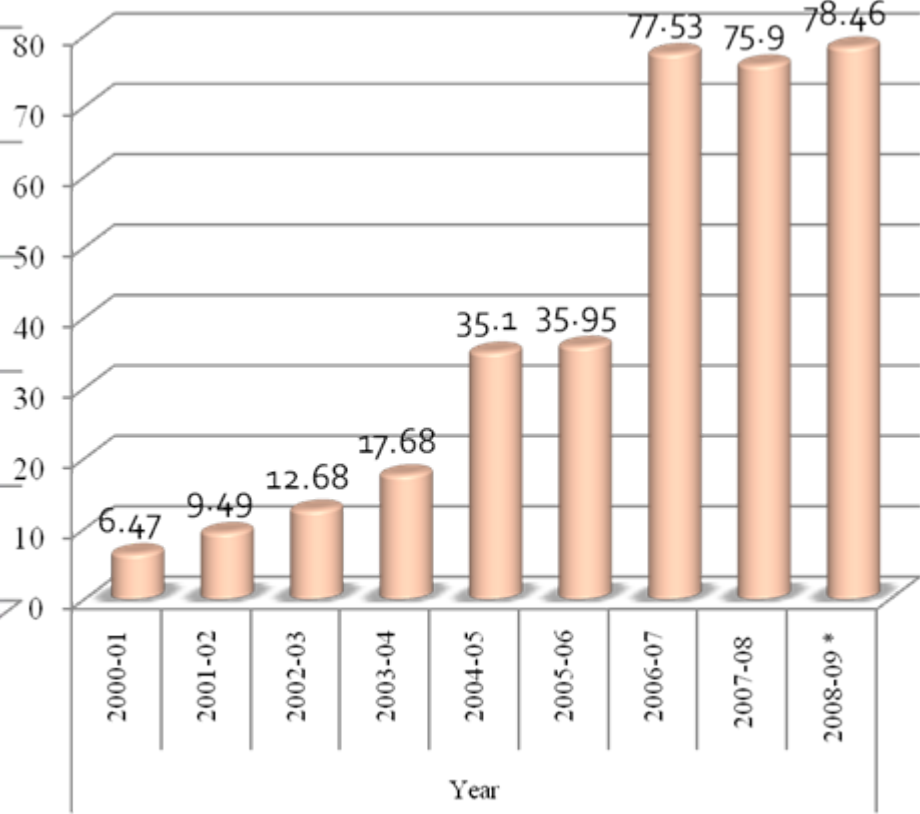
# INDIA – Agriculture Machinery Sector – International Trade

POST HARVEST MACHINERY - Machines for Cleaning, Sorting/Grading Eggs, Fruit/ other Agricultural Produce, Seed, Grain Or Dried Leguminous Vegetables, other Machinery for Cleaning, Sorting / Grading and parts there-of, and machinery of preparation of fruits, nuts / vegetables

## EXPORTS



## IMPORTS



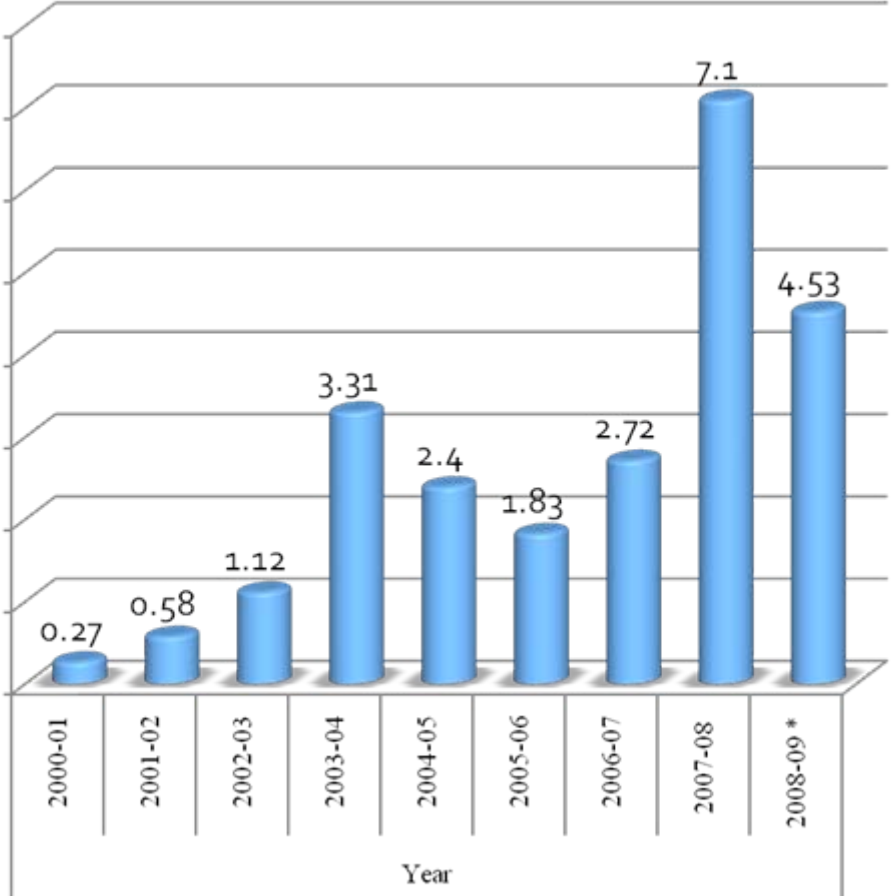
Selected Post-Harvest Equipments Exports [USD Million, Actual Prices]

Selected Post-Harvest Equipments Imports [USD Million, Actual Prices]

# INDIA – Agriculture Machinery Sector – International Trade

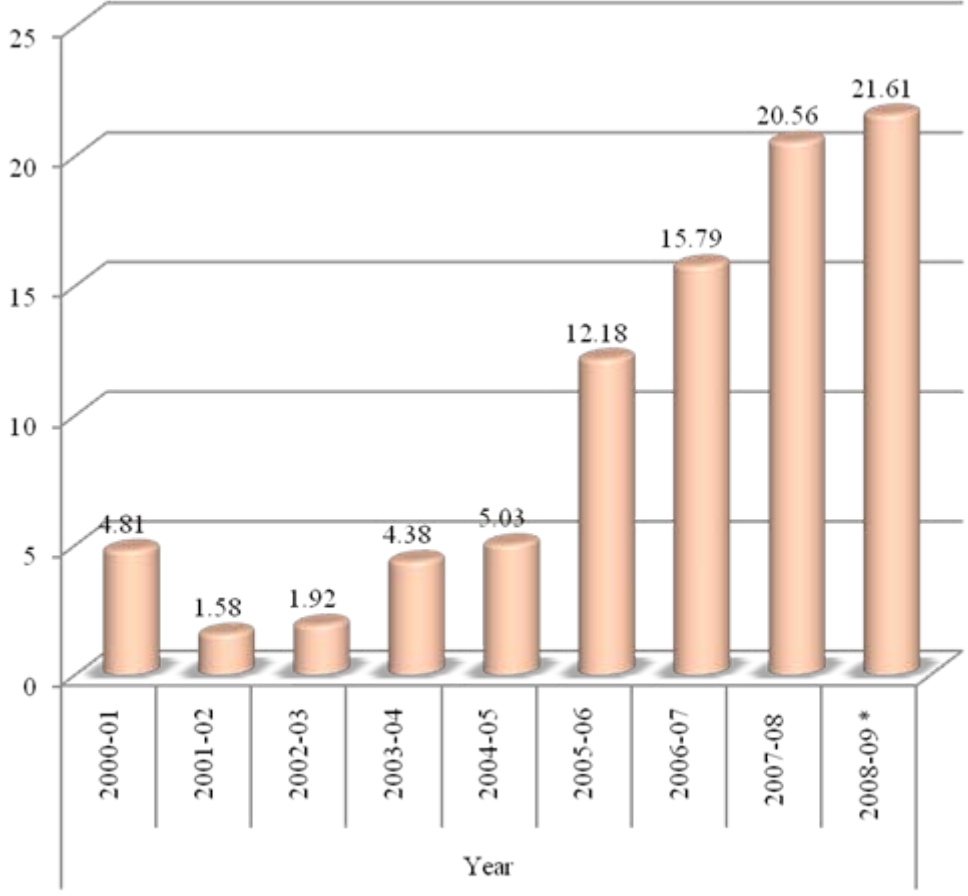
DAIRY EQUIPMENTS - Milking Machines & Dairy Machinery and parts there-of, and Machinery for preparing Animal Feeding Stuff

## EXPORTS



Selected Dairy Equipments Exports [USD Million, Actual Prices]

## IMPORTS

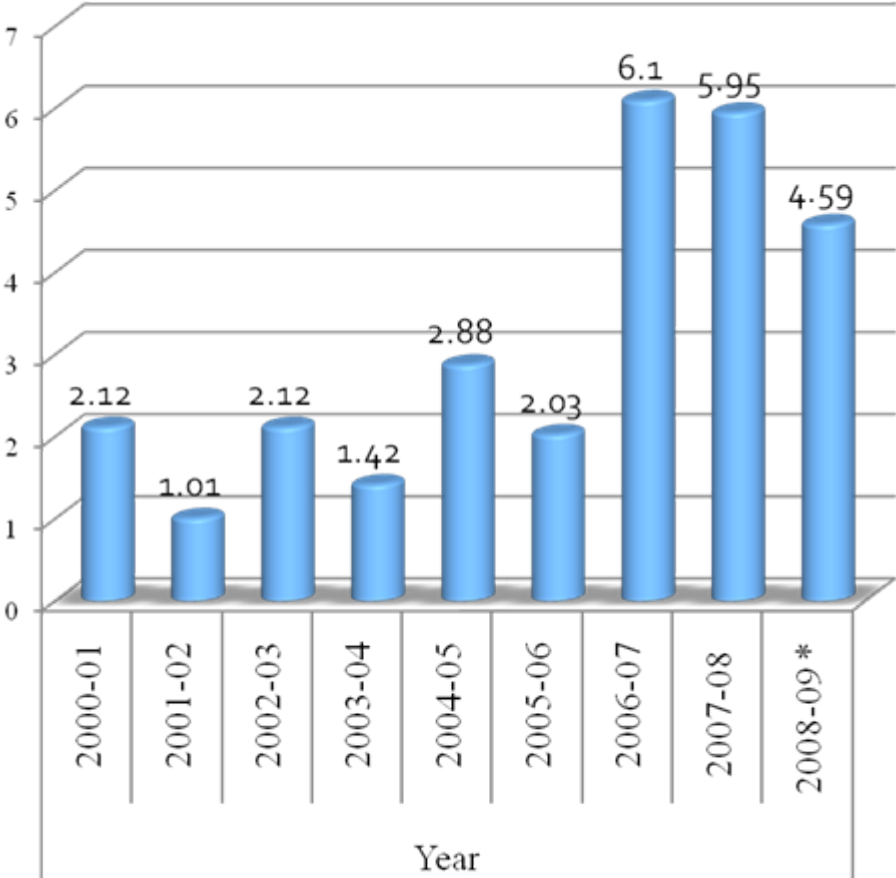


Selected Dairy Equipments Imports [USD Million, Actual Prices]

# INDIA – Agriculture Machinery Sector – International Trade

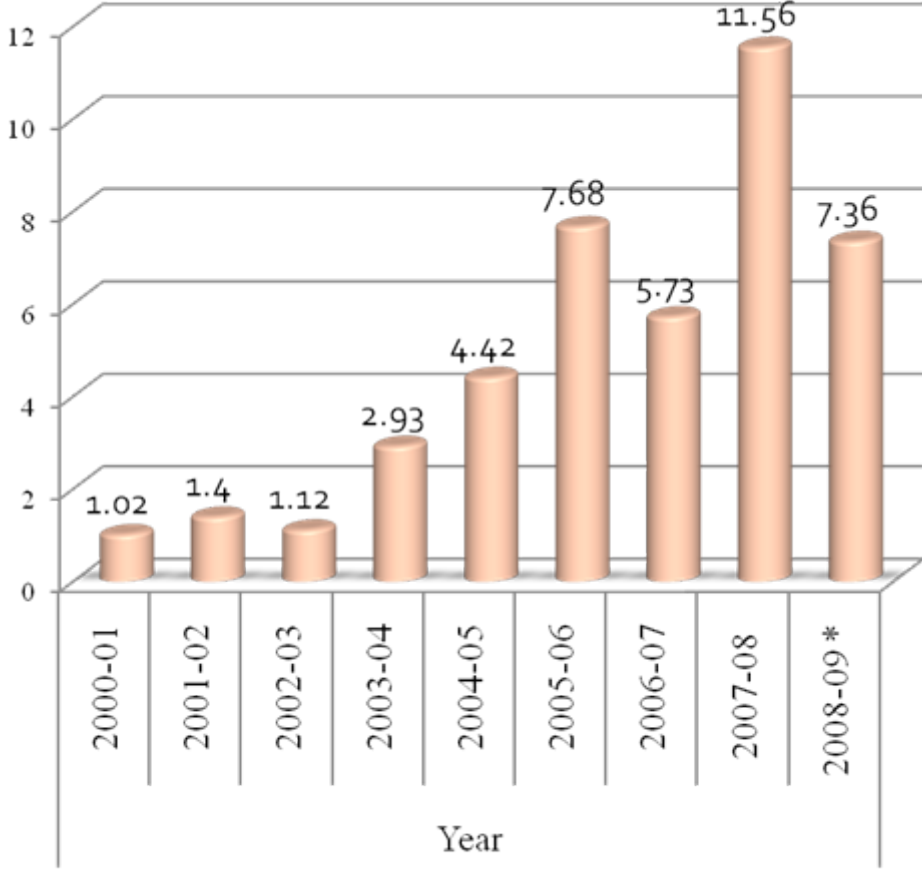
POULTRY EQUIPMENTS - Poultry incubators and brooders and parts there-of, other Poultry-Keeping Machinery, and Machinery for preparation of Meat / Poultry

## EXPORTS



Selected Poultry Equipments Exports [USD Million, Actual Prices]

## IMPORTS



Selected Poultry Equipments Imports [USD Million, Actual Prices]