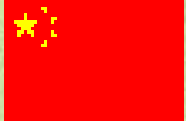


Agrievolution 2008
First World Summit on
Agricultural Machinery



**Analysis of Agricultural
Machinery Sector in
China & India & Turkey**
from Agrievolution 2008

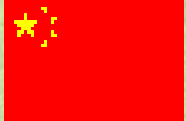


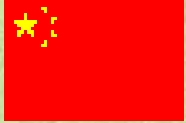
Prof.Dr.Kamil Okyay SINDIR

Ege University, Faculty of Agriculture,
Dept.of Agricultural Machinery, Izmir, TURKEY
kamil.sindir@ege.edu.tr

Content

- General Economic Indicators
- General Agricultural Indicators
- Agricultural Machinery Sector
 - Machinery Population Growth
 - Mechanization Criteria Comparison
 - Current Status of the Sector
 - Foreign Trade of Agricultural Machinery
 - Manufacturing Industry
 - Future Trends





General Economic Indicators

of

China

India

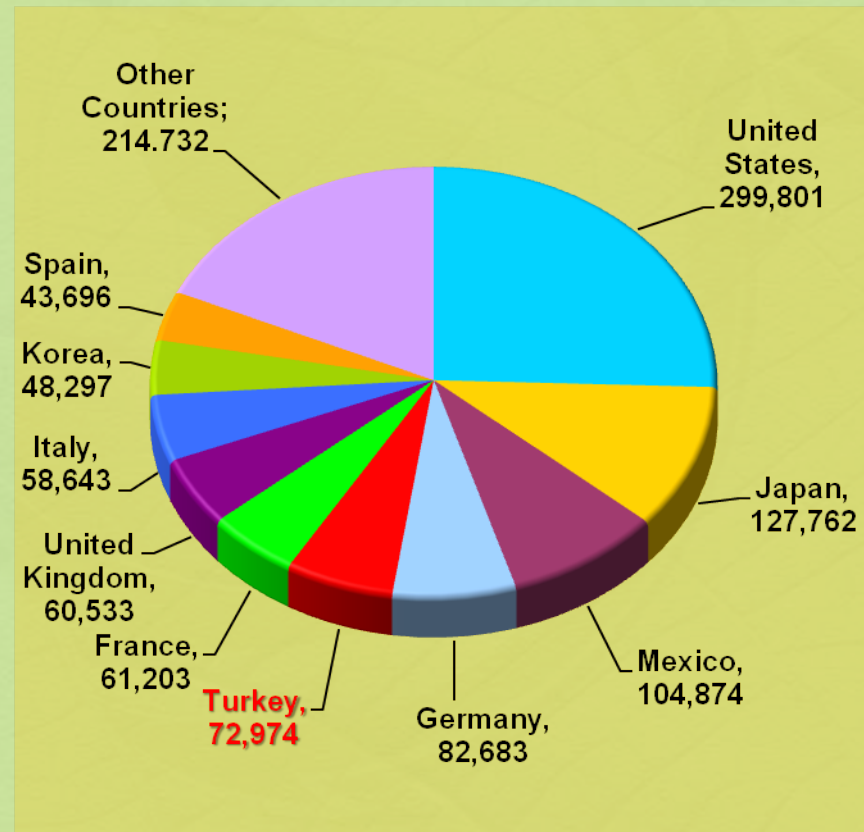
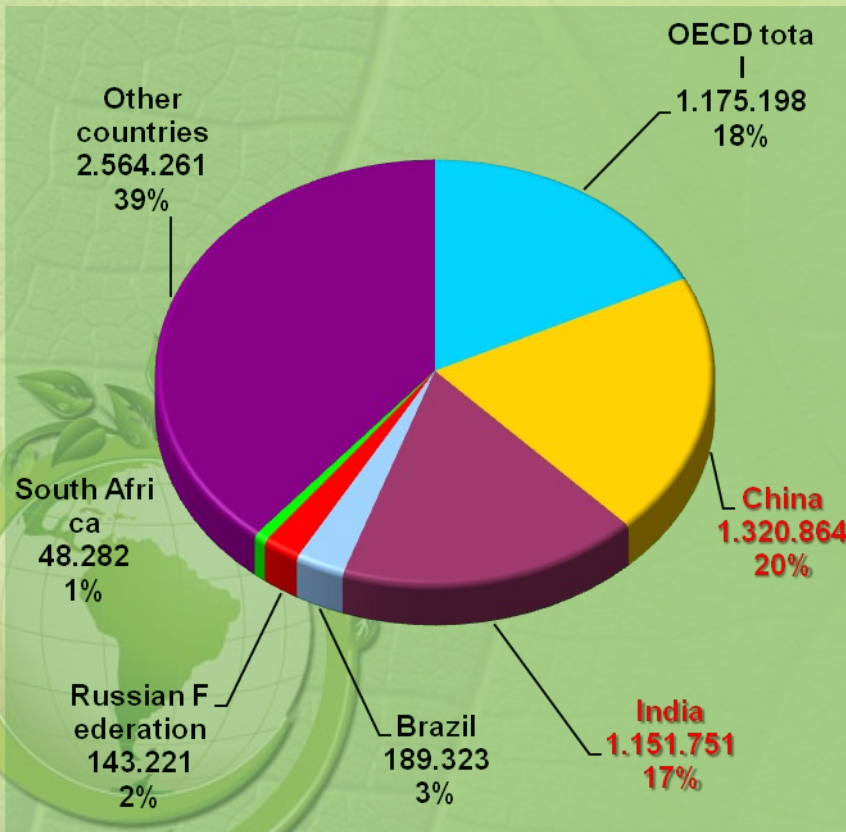
Turkey



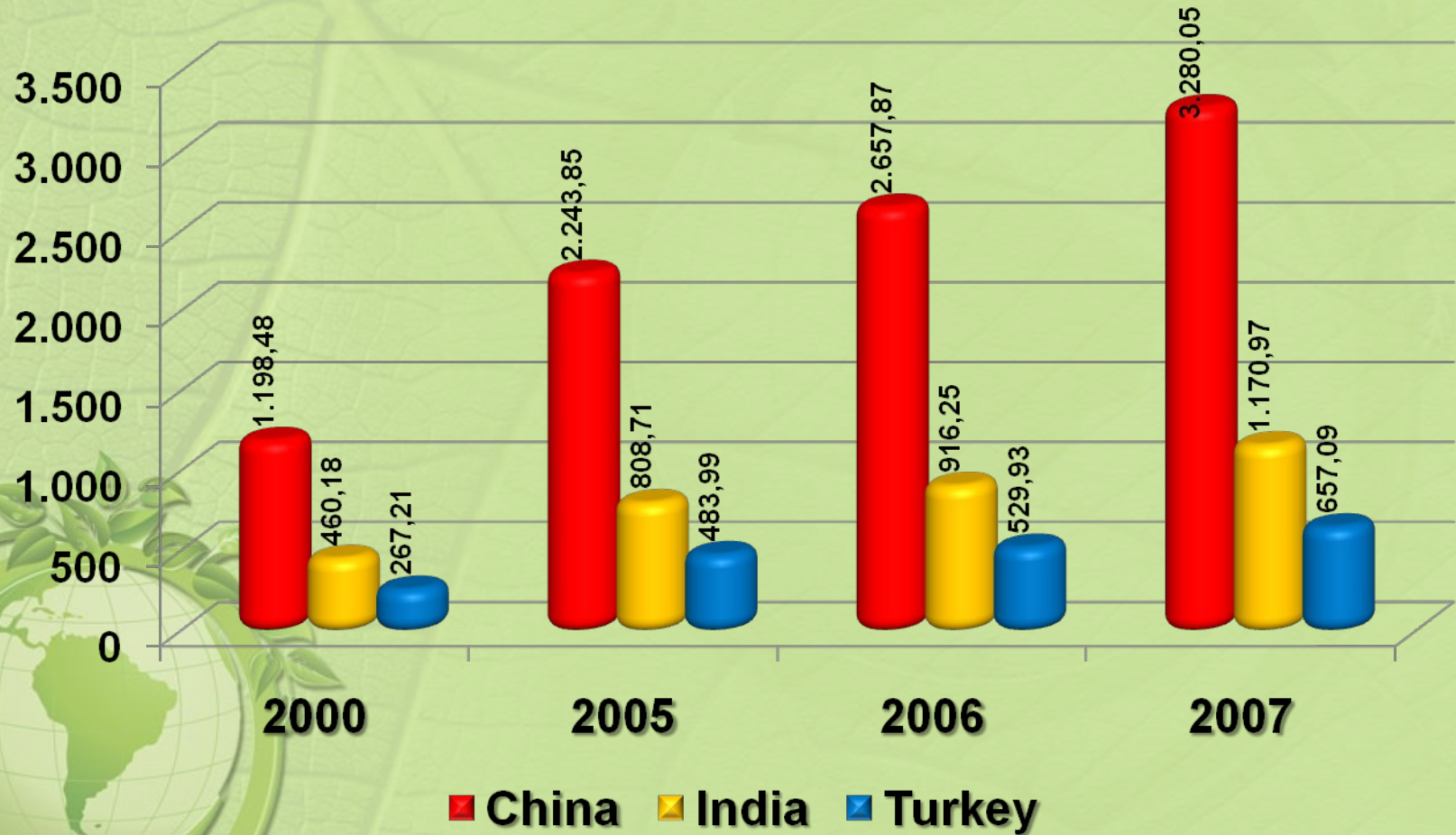
Population Statistics - ('000 - 2006)

World – 6.592.900

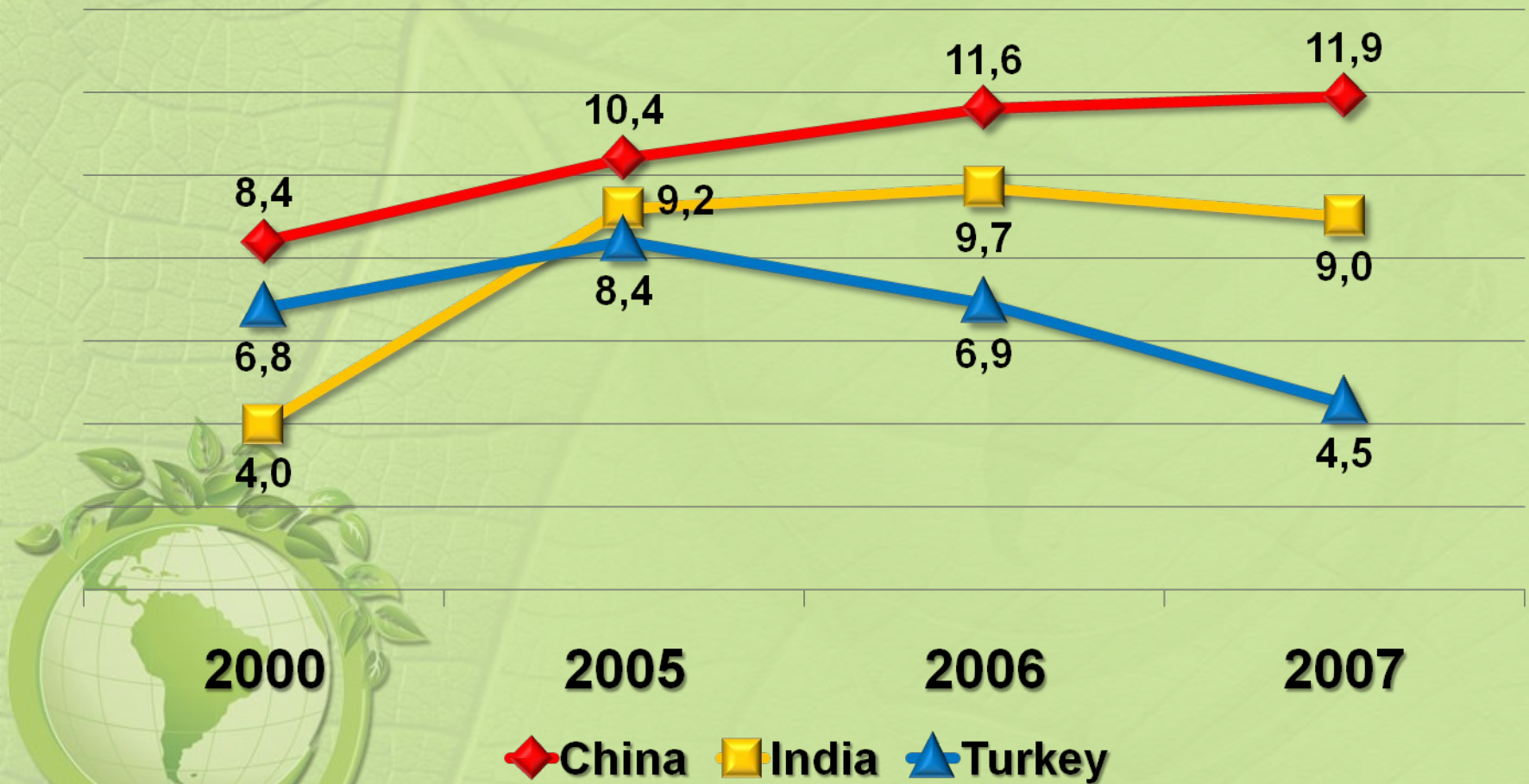
OECD – 1.175.198



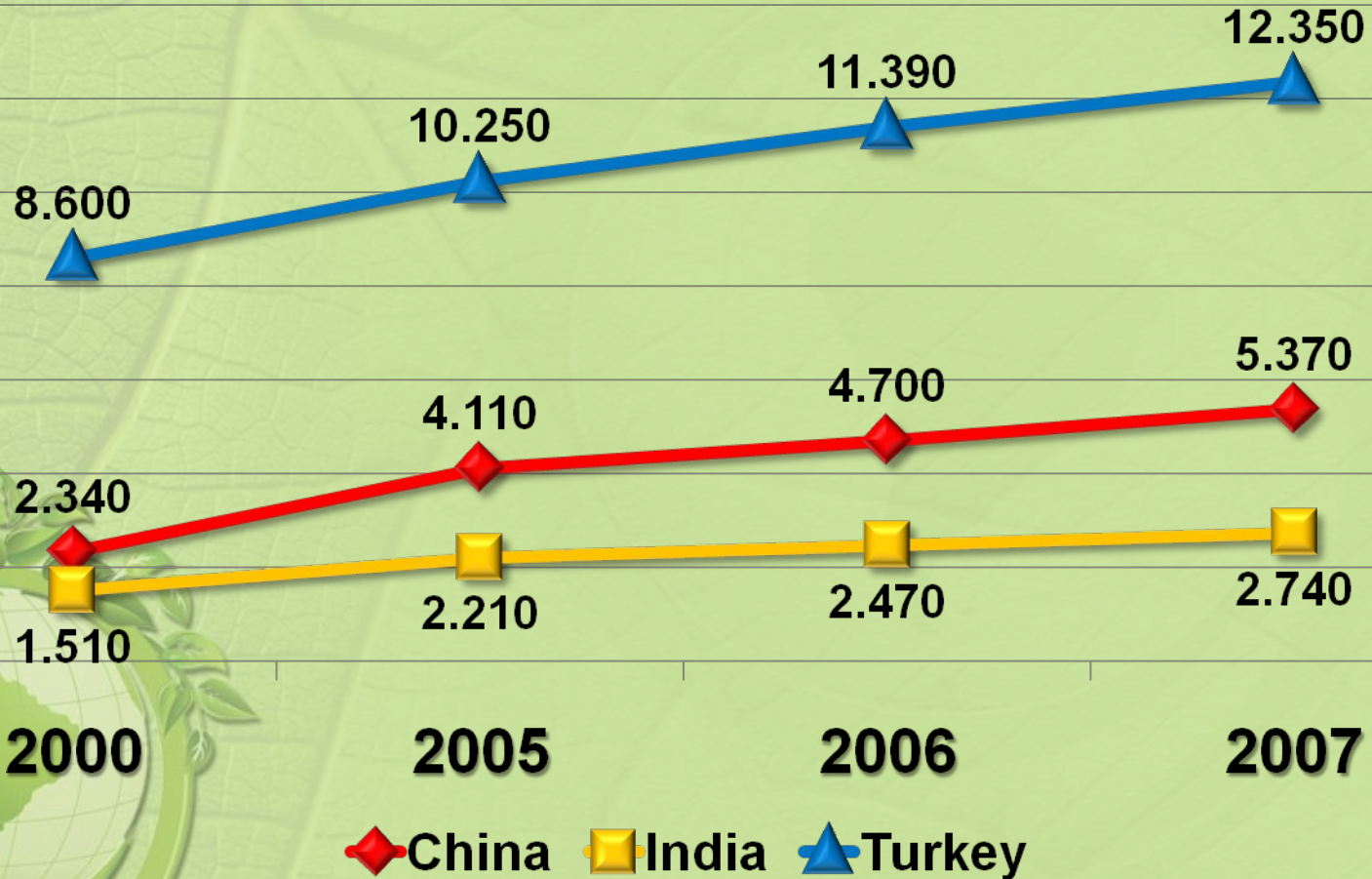
GDP (current US\$) (billions)



GDP growth (annual %)

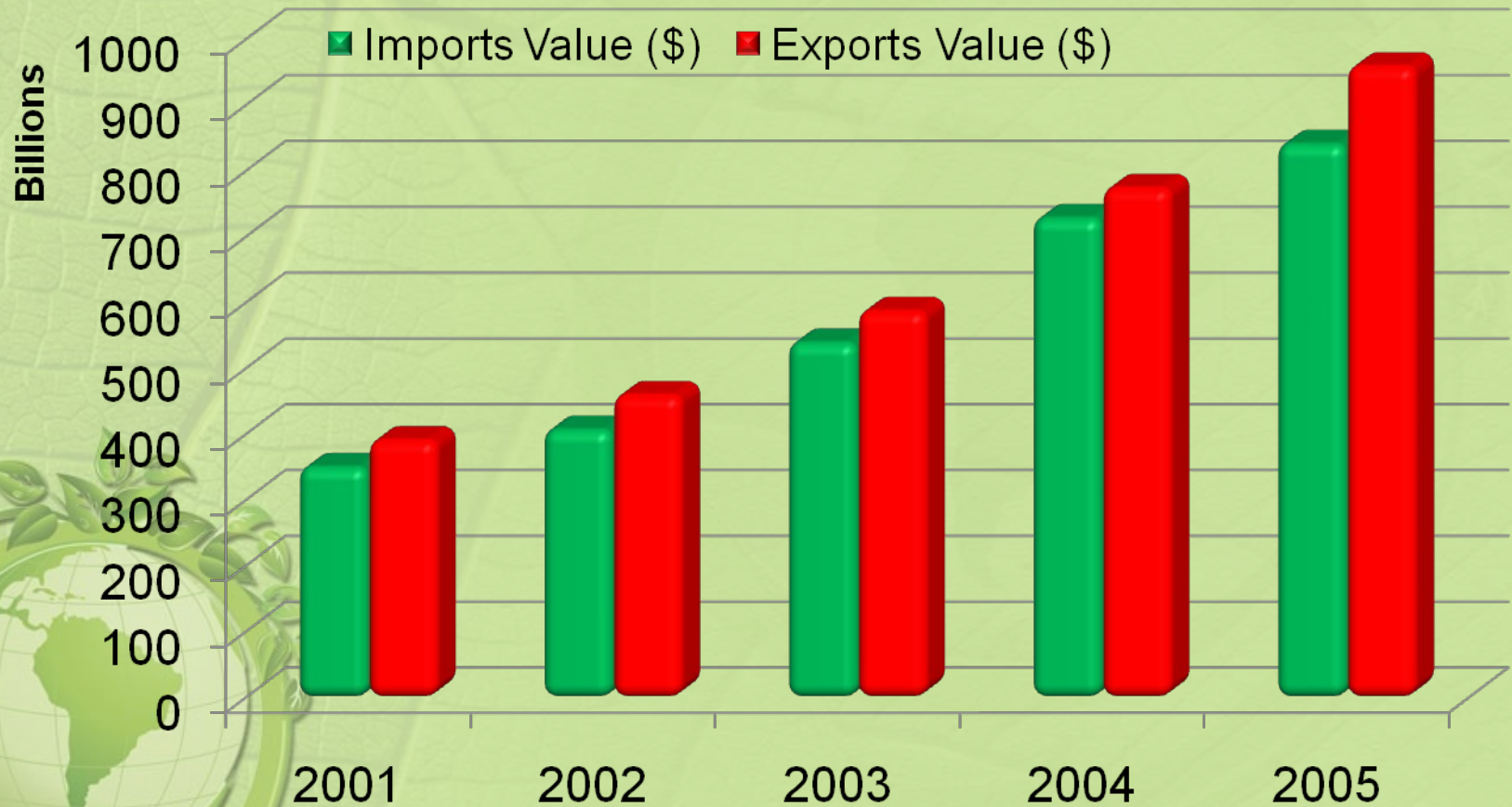


GNI per capita, PPP (current int. \$)



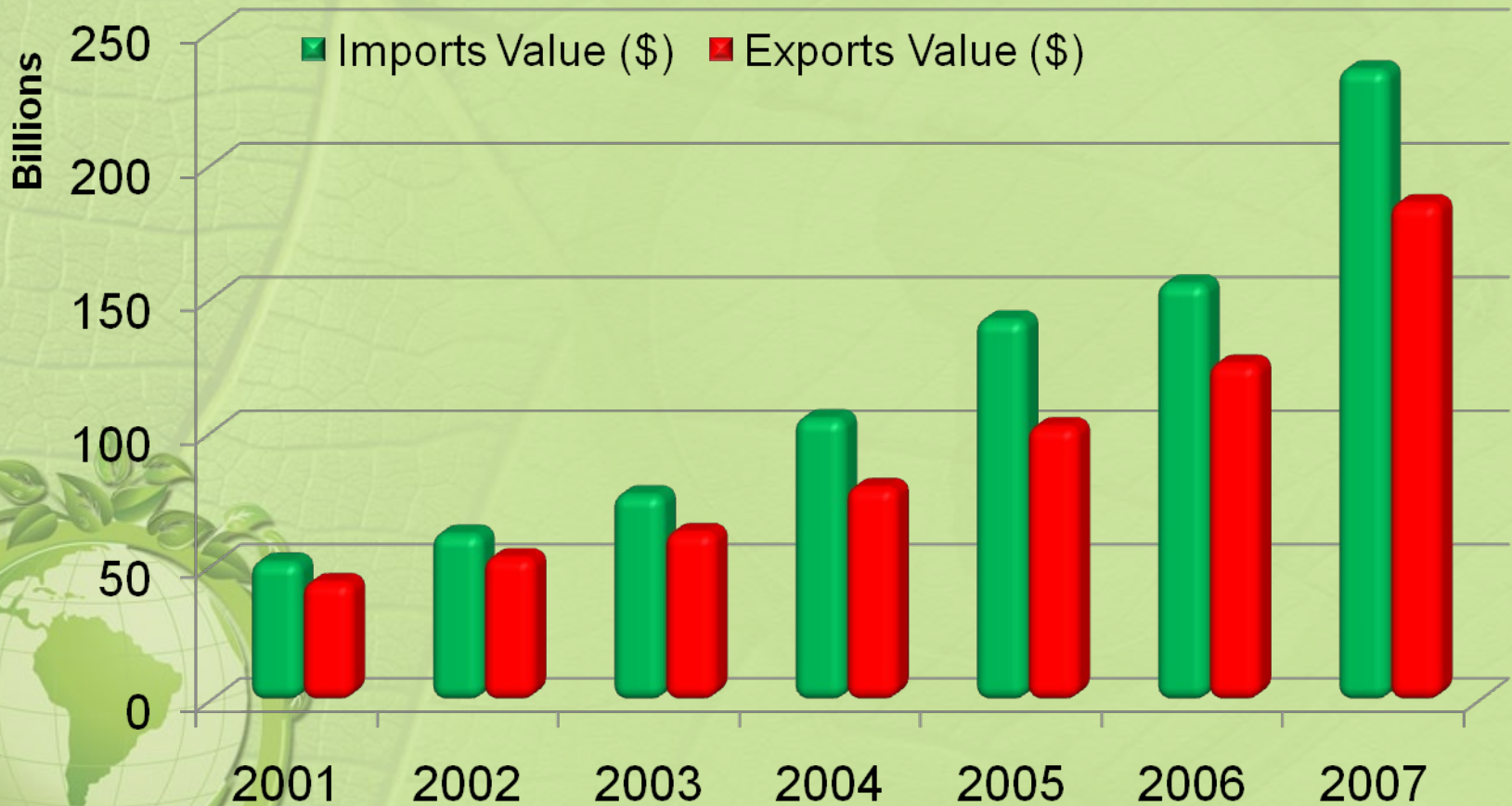


Total Merchandise Trade of China



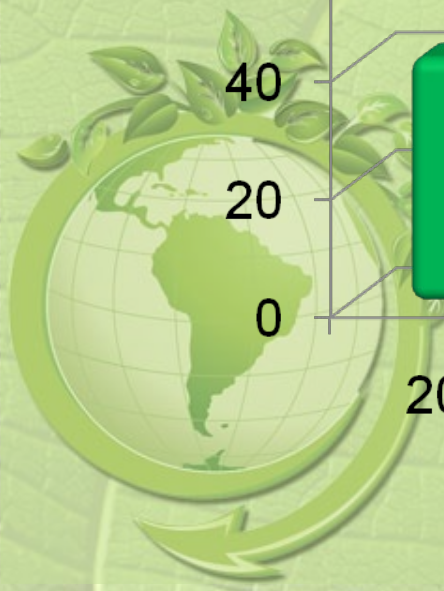
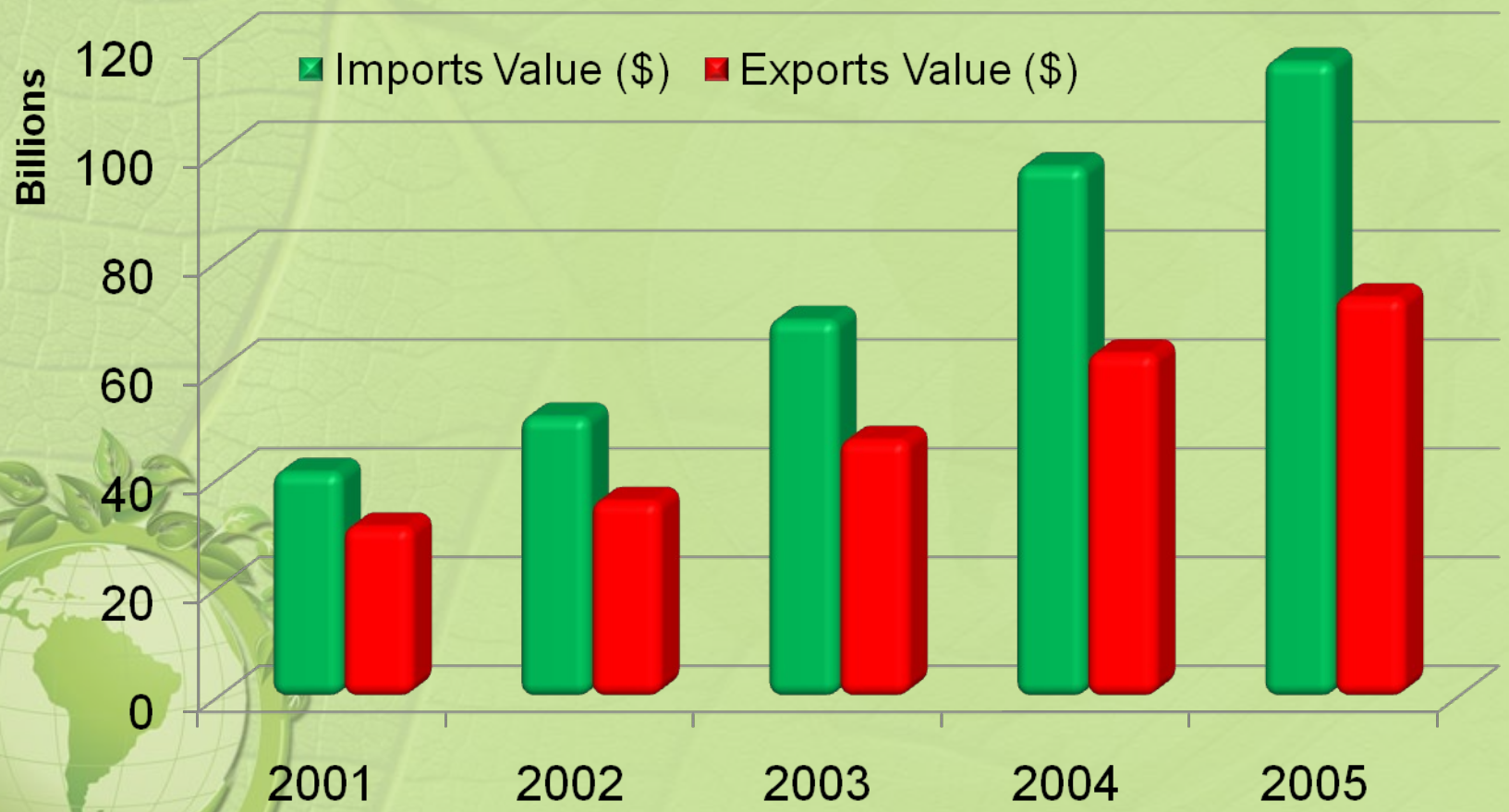


Total Merchandise Trade of India



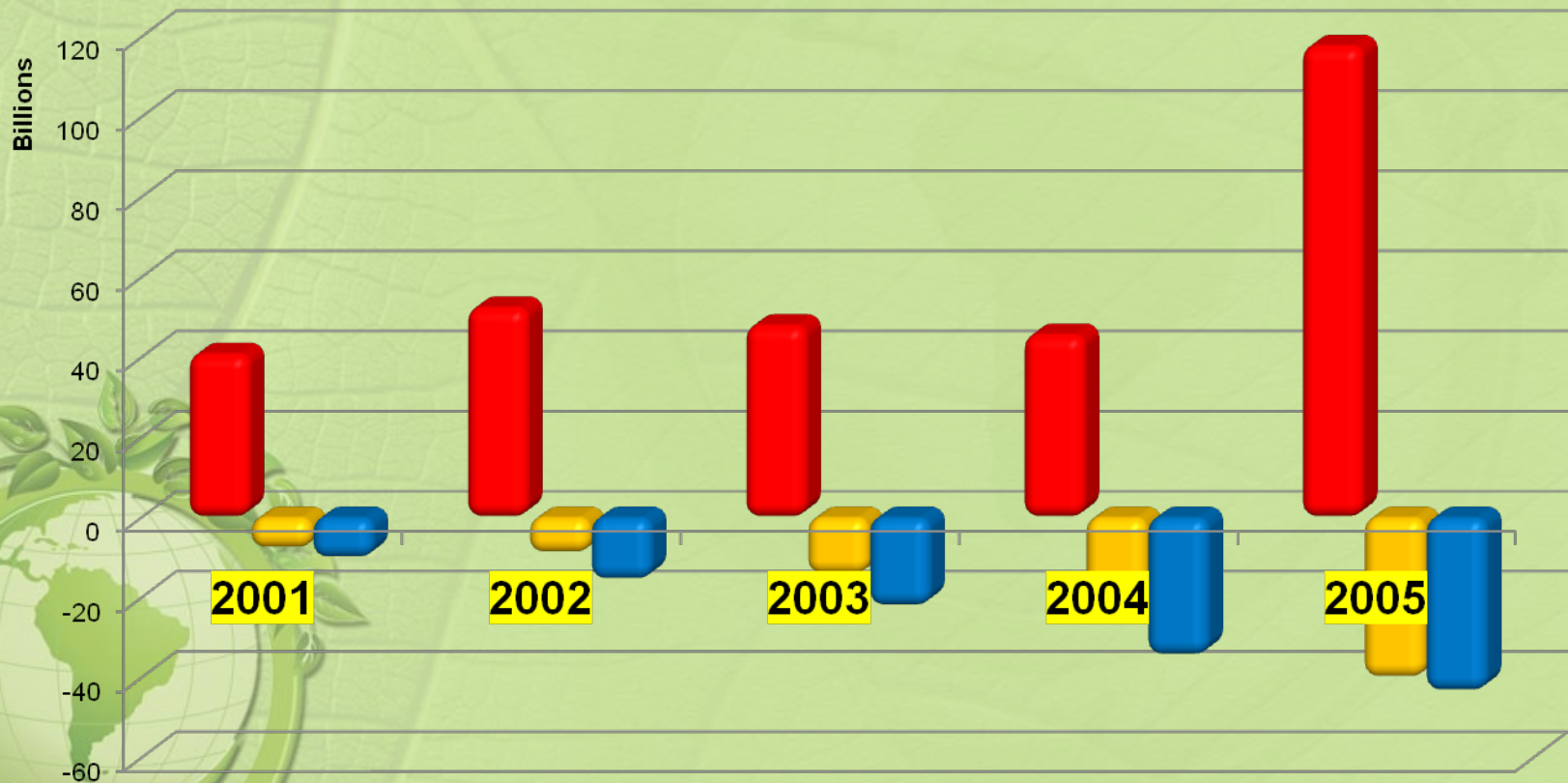


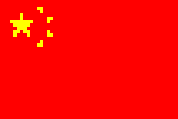
Total Merchandise Trade of Turkey



Merhandise Trade Balance

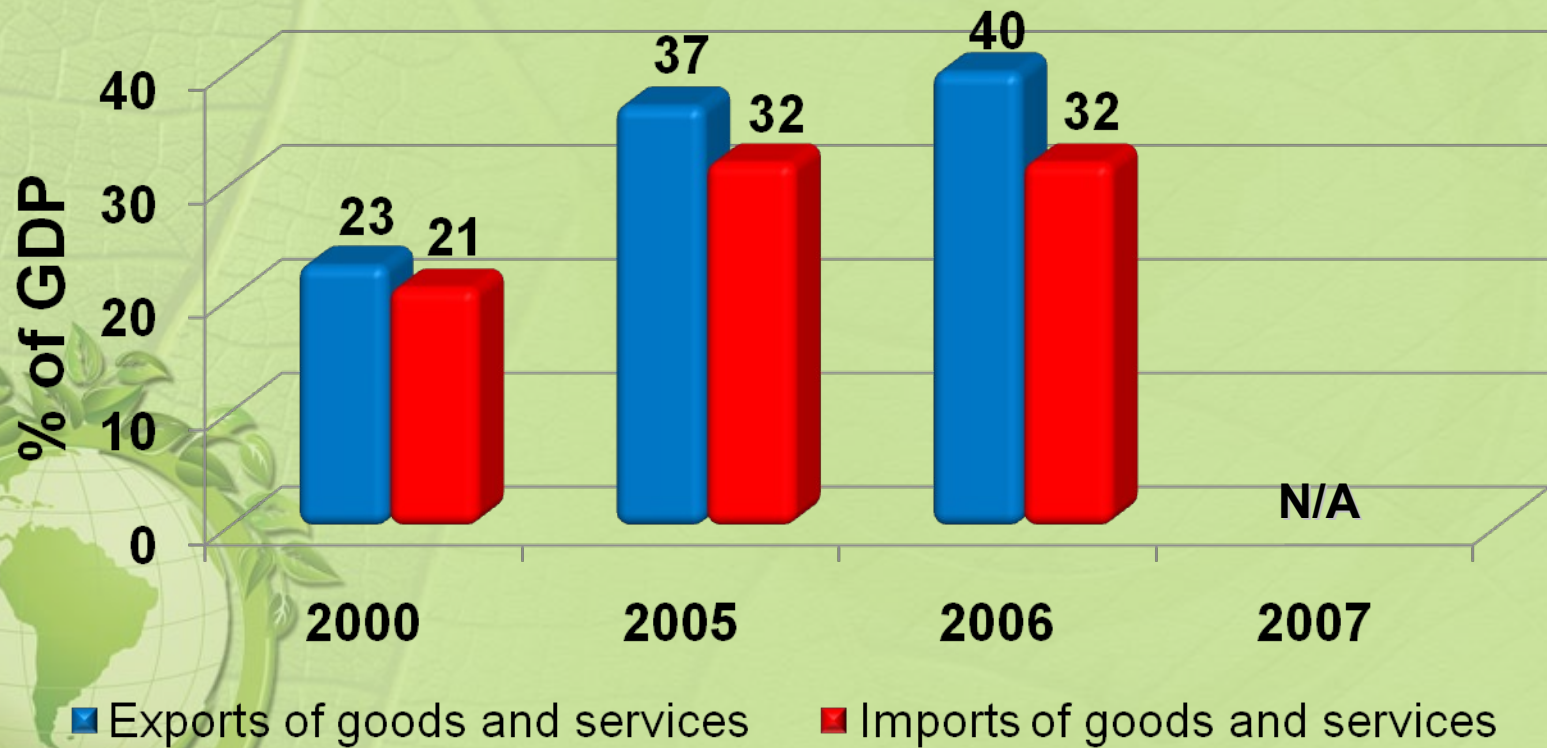
■ China ■ India ■ Turkey





Foreign Trade as % of GDP

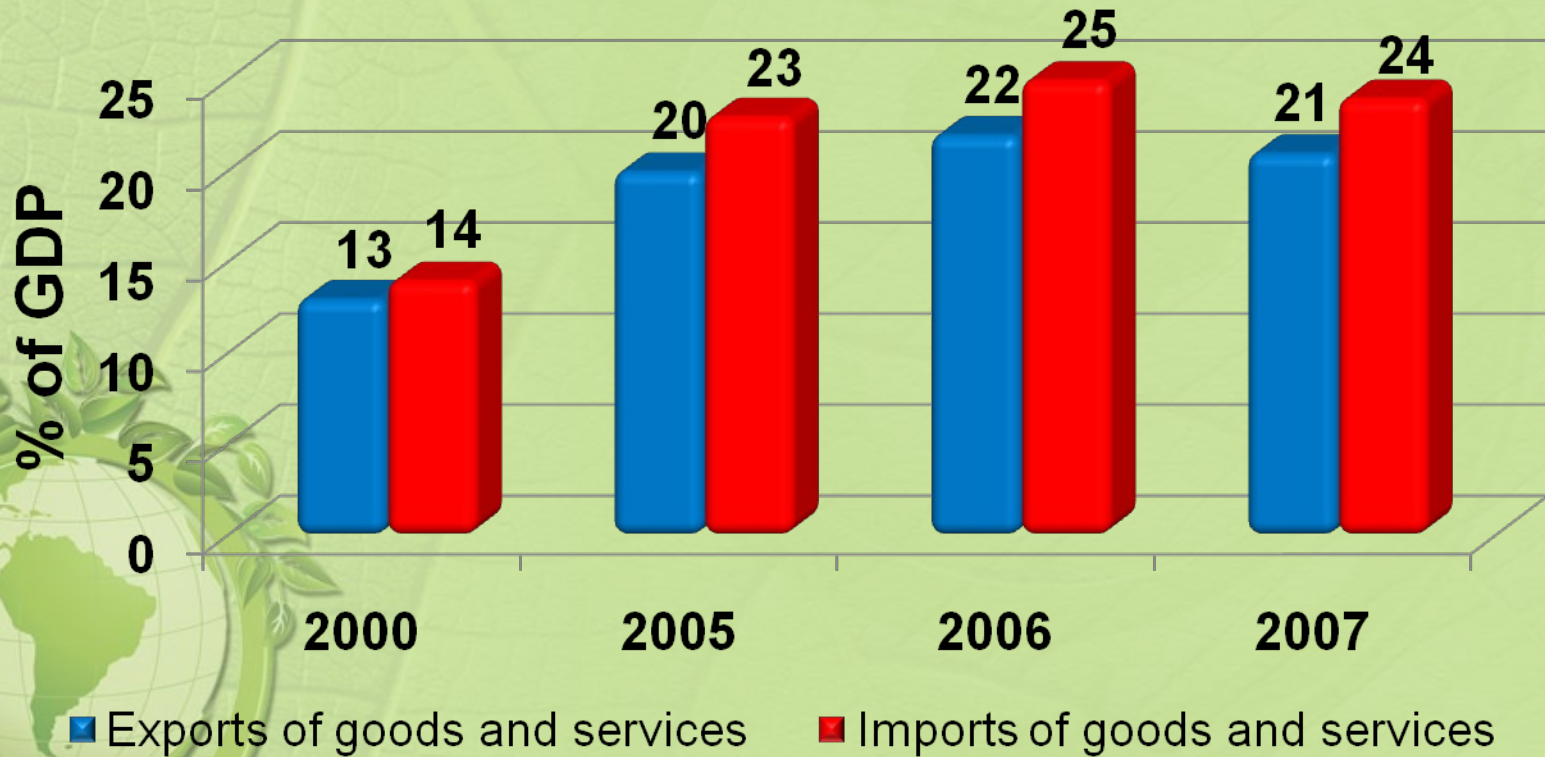
China





Foreign Trade as % of GDP

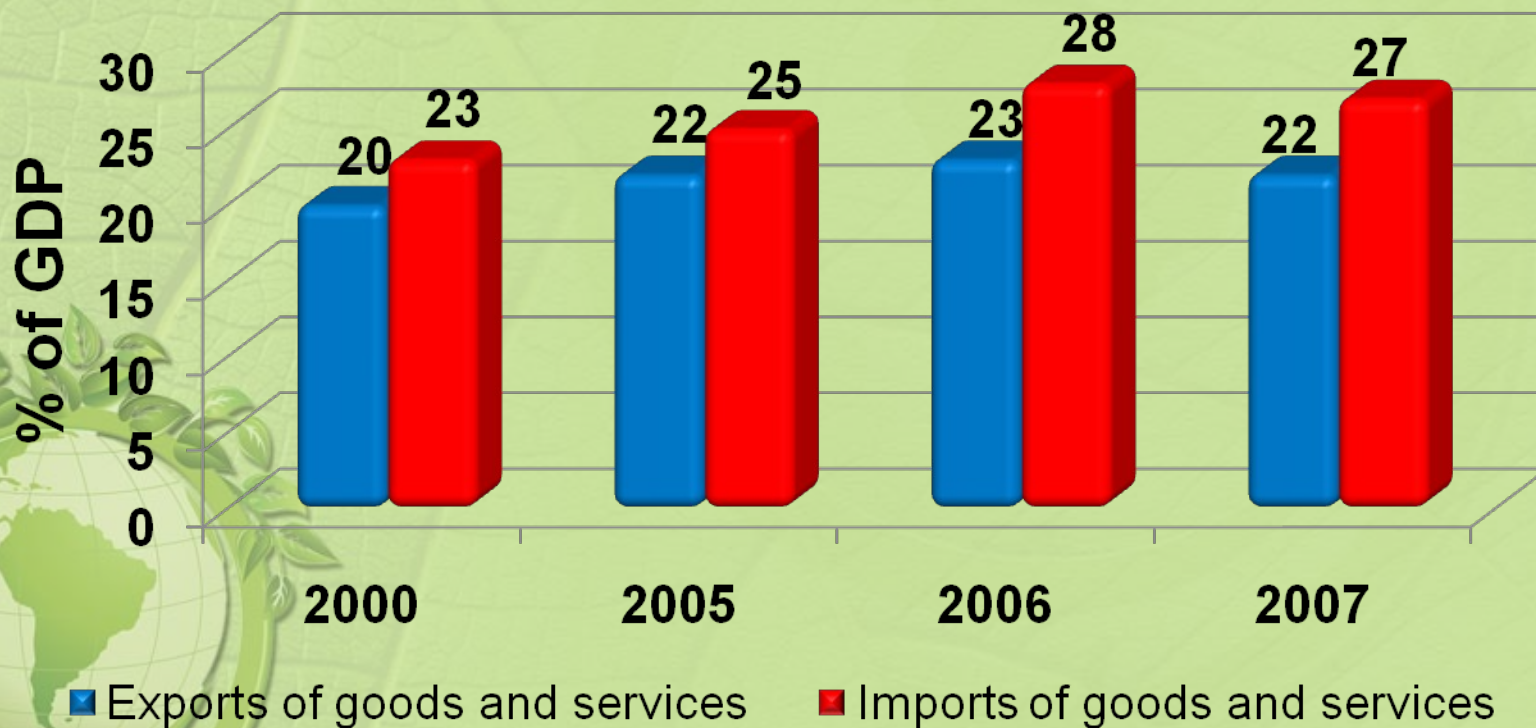
India





Foreign Trade as % of GDP

Turkey





General Agricultural Indicators

of

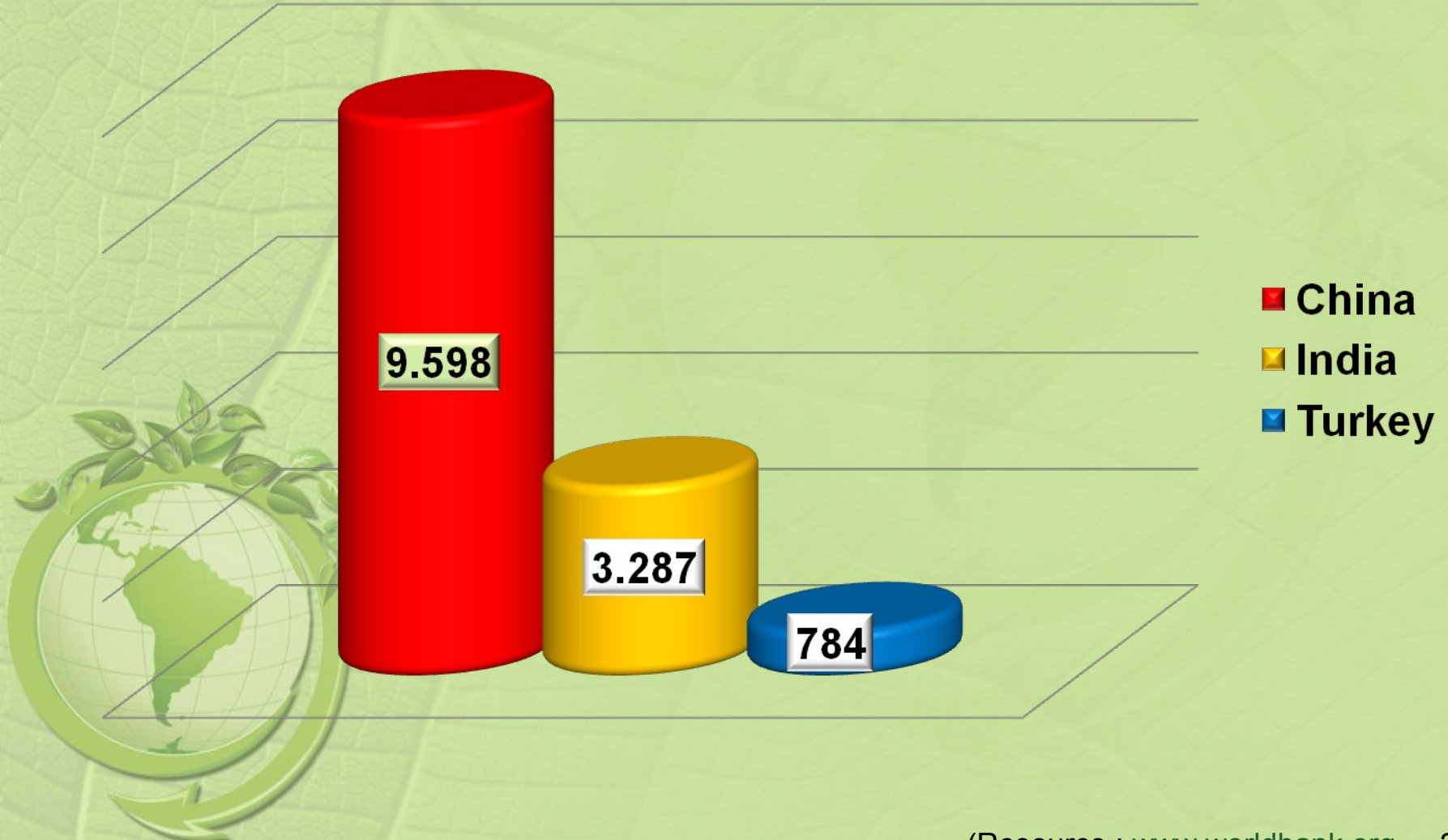
China

India

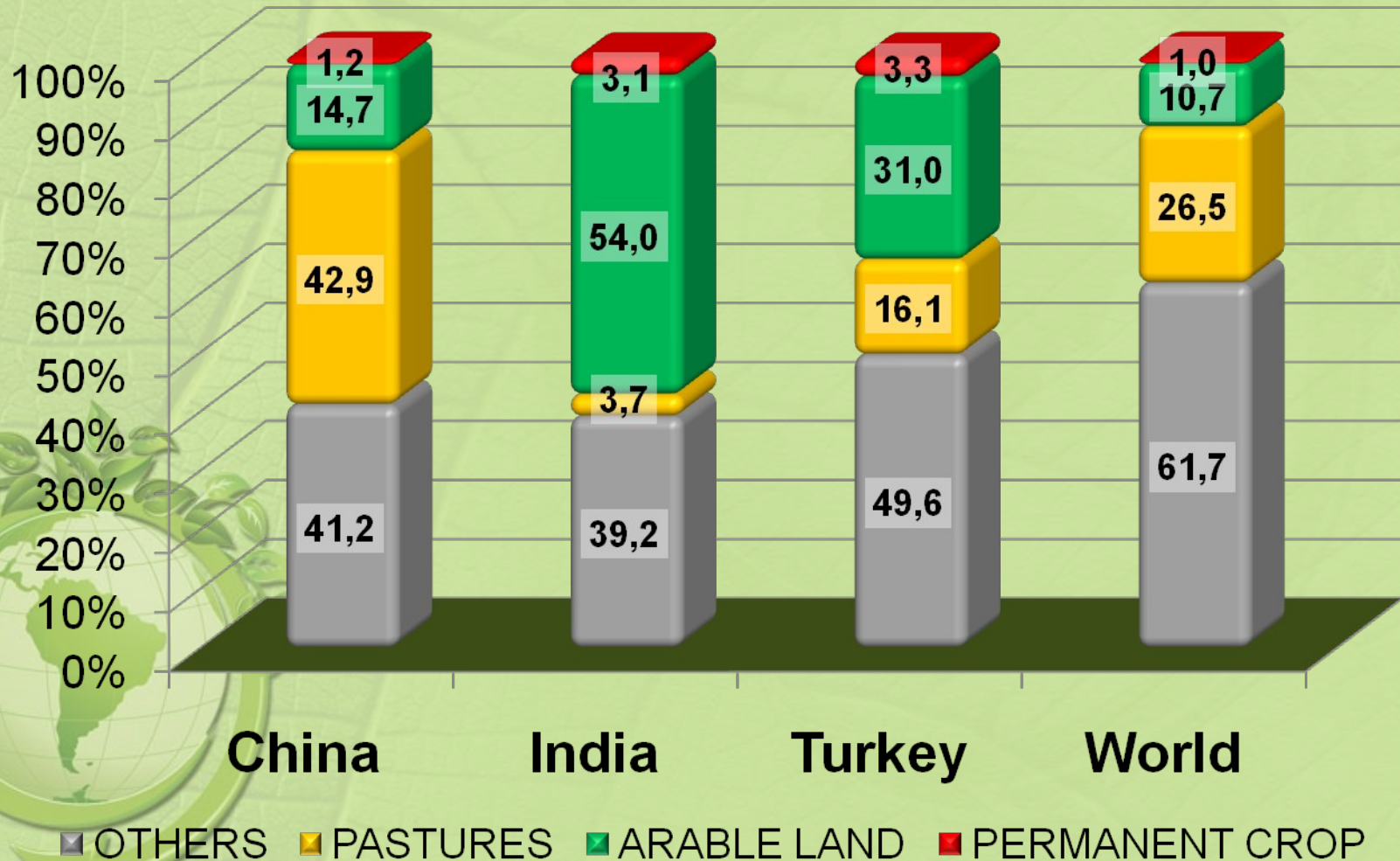
Turkey

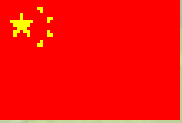


Surface area (sq. km) (thousands)



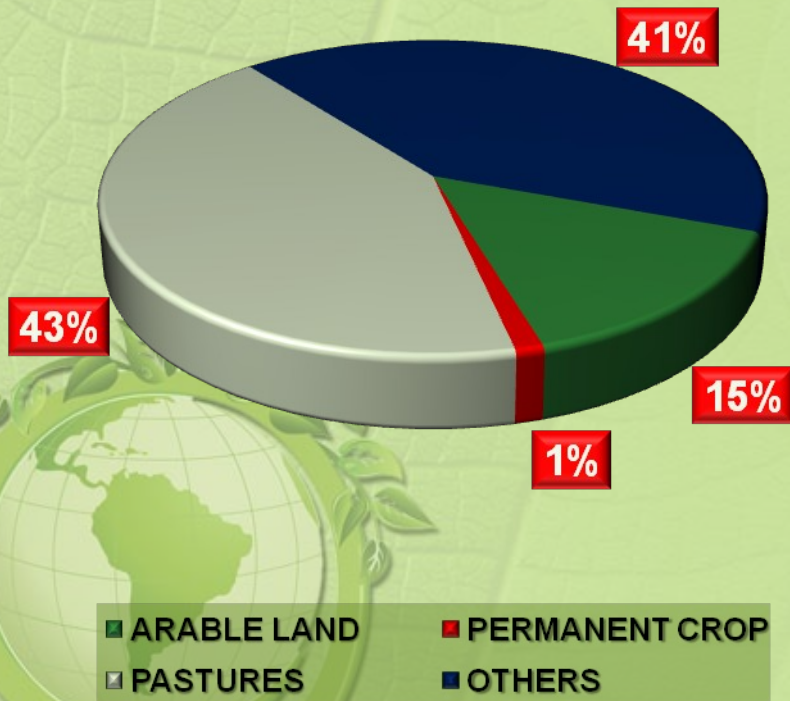
Land Use in Comparison



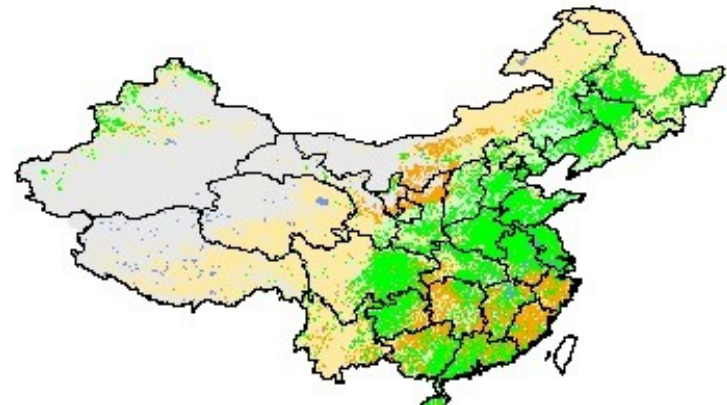


Land Use of China

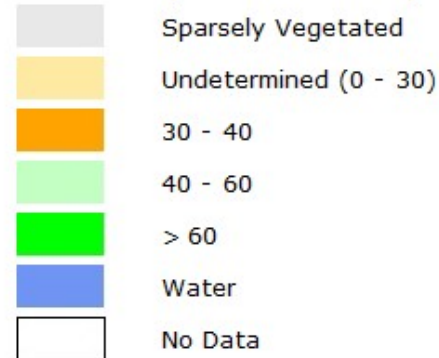
Land Use of China



Permanent Crops and Arable Land



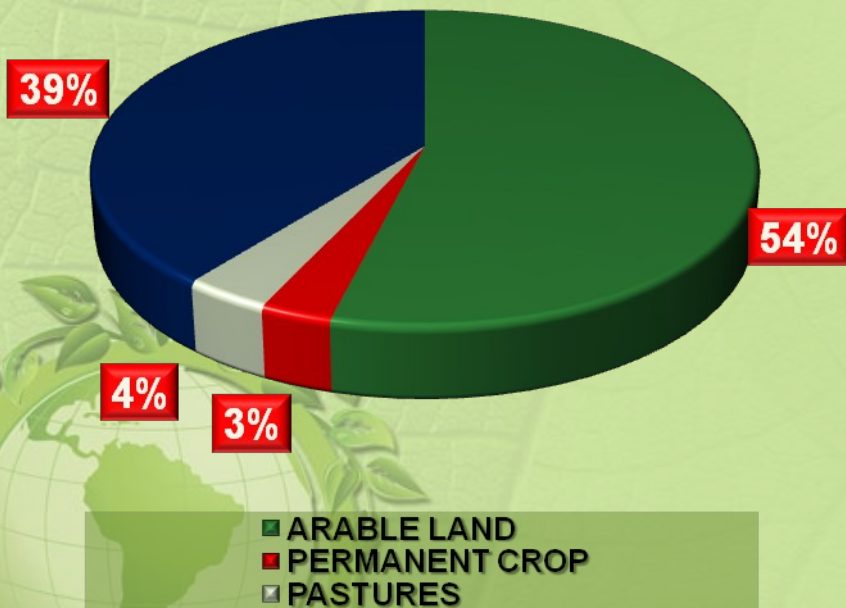
Permanent Crops & Arable Land (Percentage Intensity)





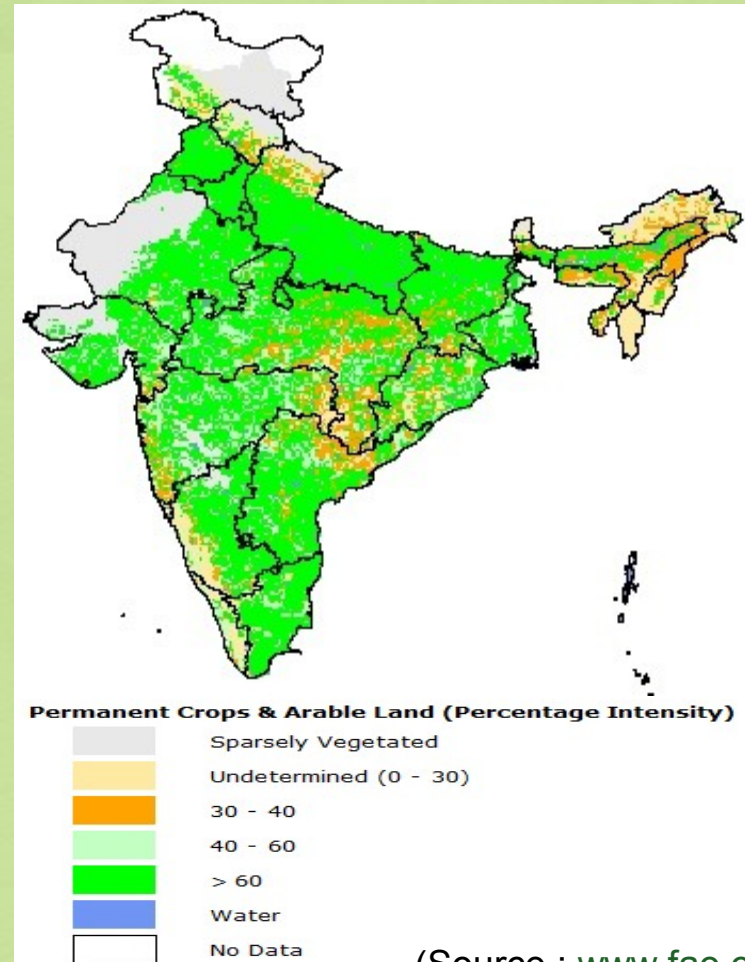
Land Use of India

Land Use of India



- Second Largest Arable Land in the World
- Highest Arable Land to Land Size Ratio
- Largest Irrigated Land Network

Permanent Crops and Arable Land

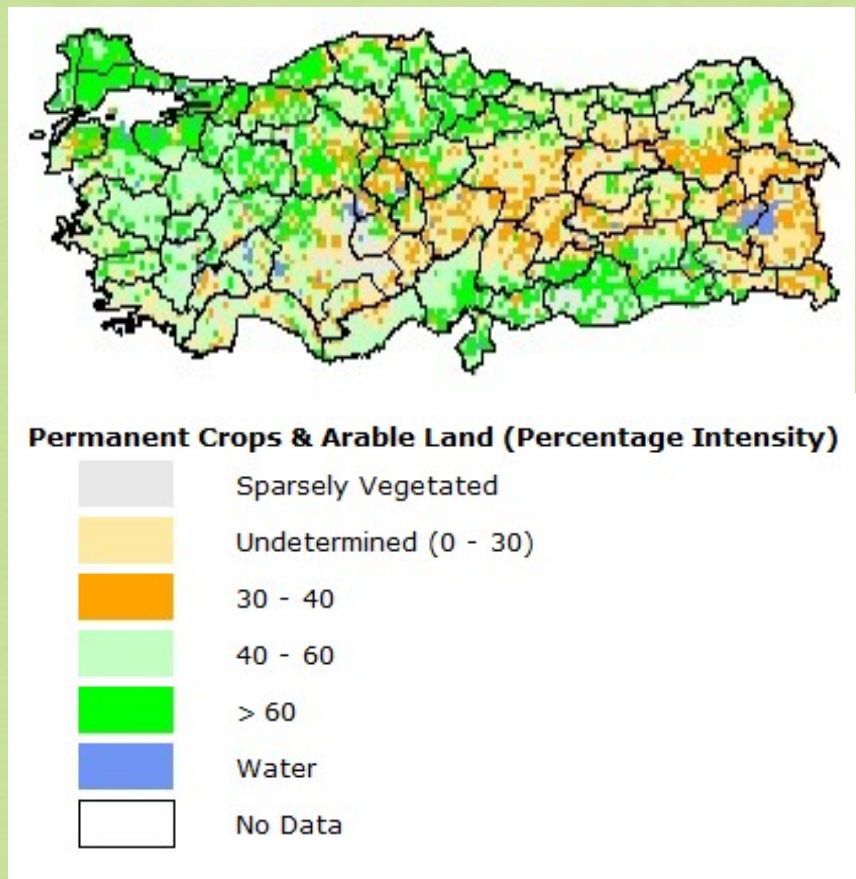
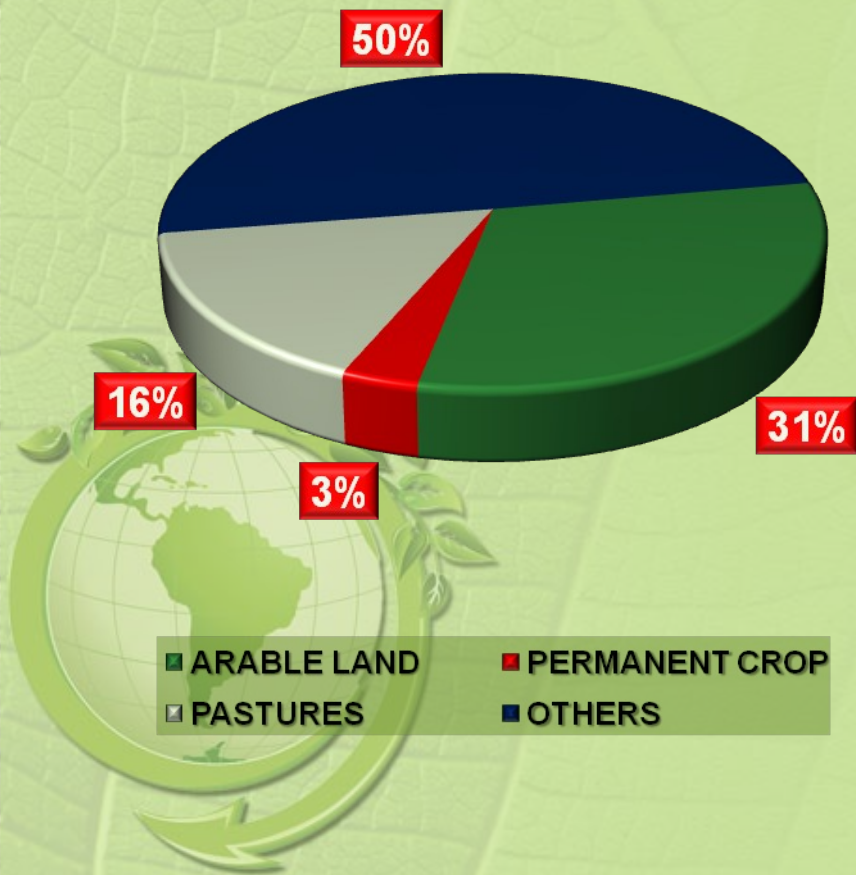




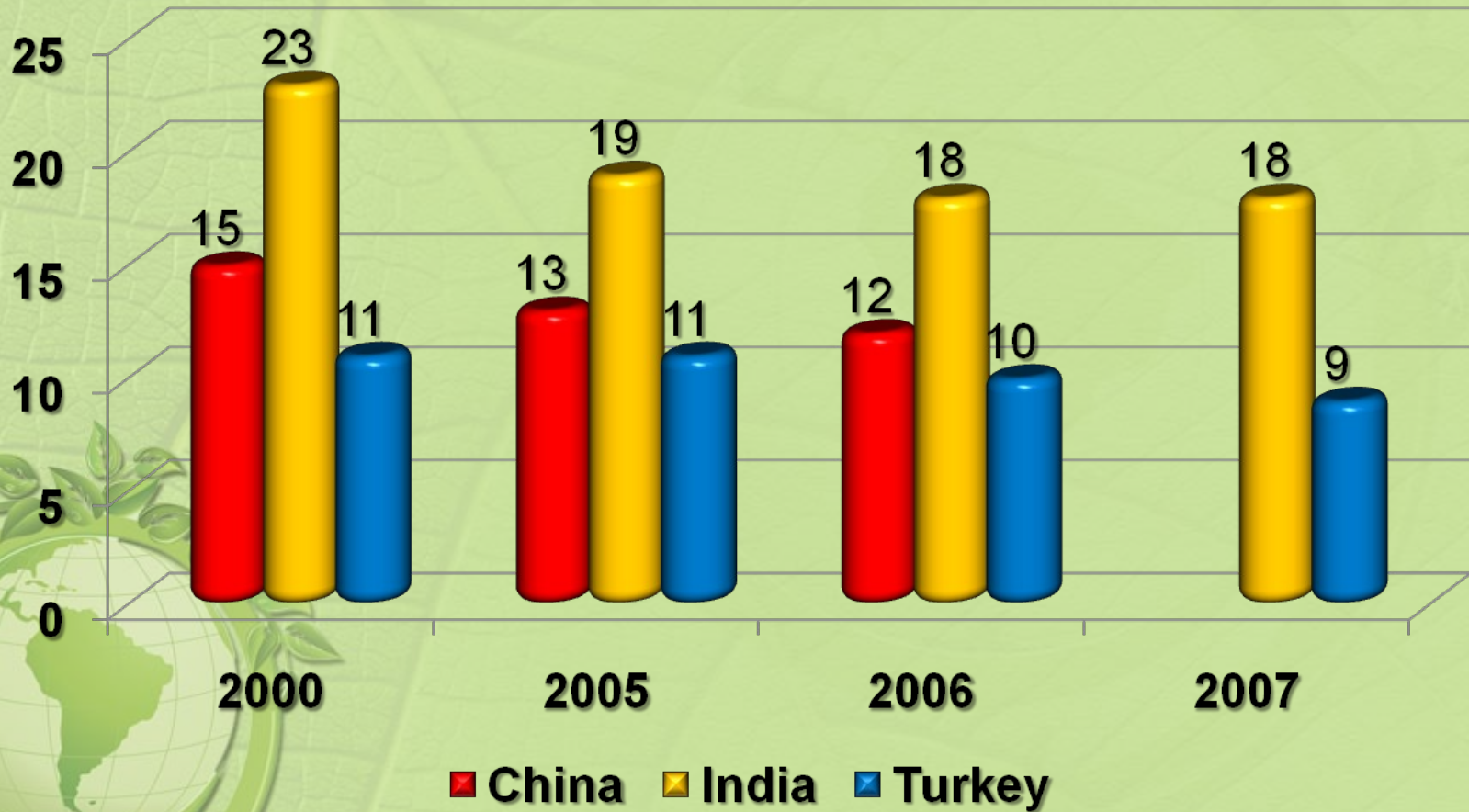
Land Use of Turkey

Land Use of Turkey

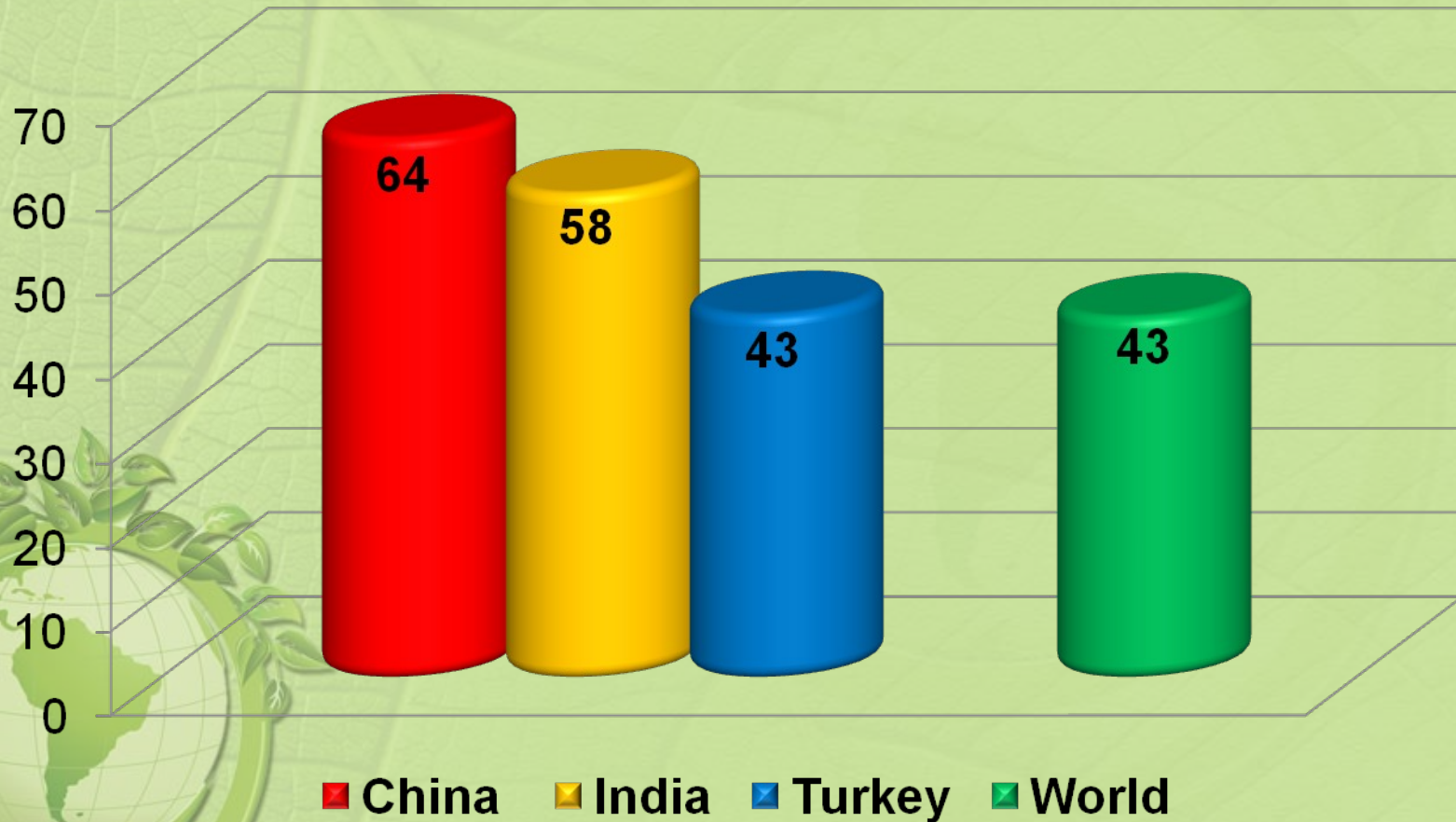
Permanent Crops and Arable Land



Agriculture, value added (% of GDP)



Economically Active Population in Agriculture (Share in Total, %)



World Rank for Commodities

(Source : www.fao.org - 2005)

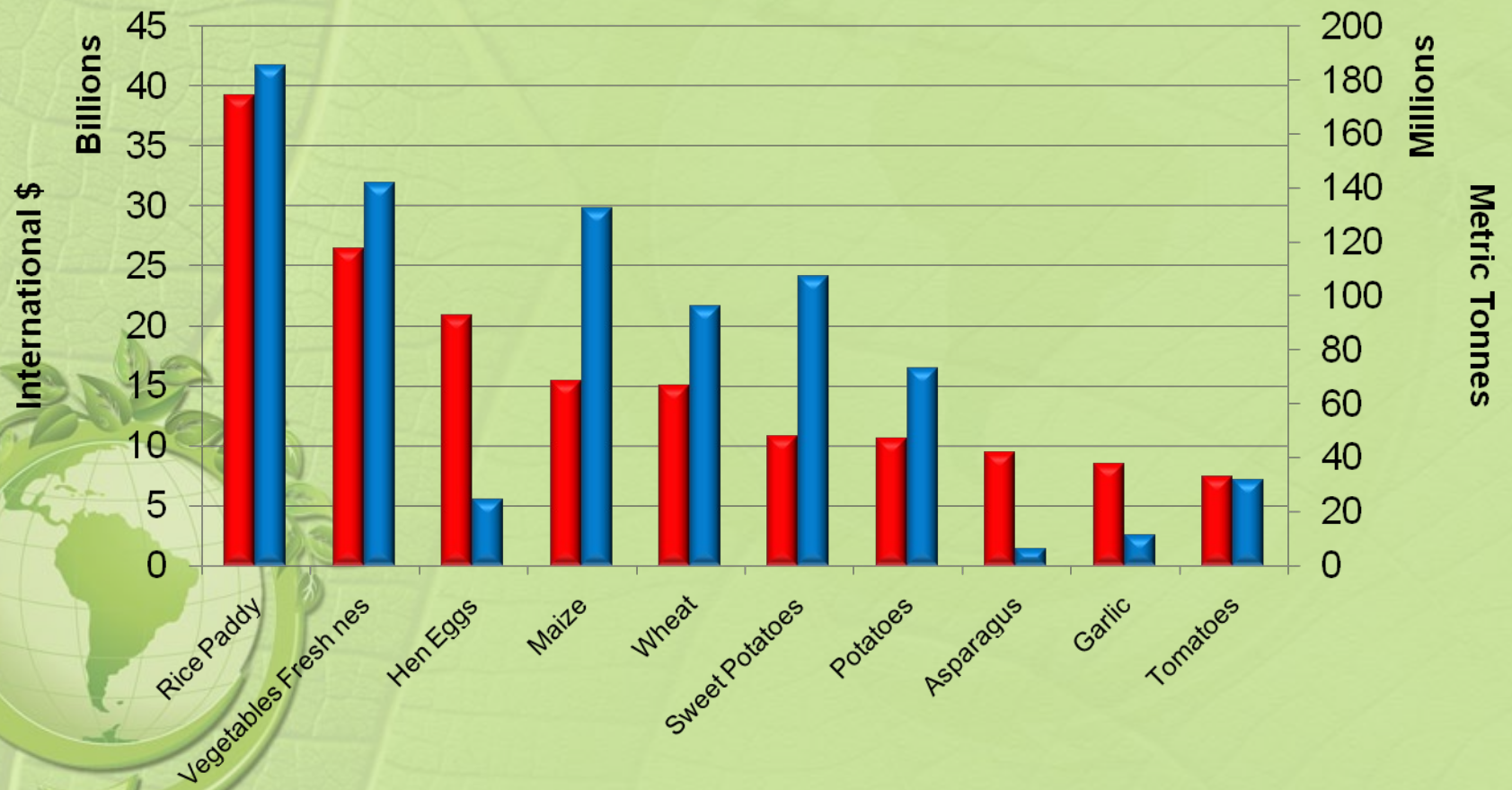
China				India				Turkey			
Commodity	Rank	Commodity	Rank	Commodity	Rank	Commodity	Rank	Commodity	Rank	Commodity	Rank
Apples	1	Peaches and Nectarines	1	Anise, Badian, Fennel	1	Eggplants	2	Apricots	1	Walnuts	4
Asparagus	1	Pears	1	Bananas	1	Garlic	2	Cherries	1	Indigenous Sheep Meat	5
Beans, Green	1	Persimmons	1	Buffalo Milk	1	Ginger	2	Figs	1	String Beans	5
Broad Beans, Dry	1	Plums	1	Castor Beans	1	Groundnuts in Shell	2	Hazelnuts (Filberts)	1	Tea	5
Buckwheat	1	Potatoes	1	Chick-Peas	1	Lemons and Limes	2	Cantaloupes&oth Melons	2	Vanilla	5
Cabbages	1	Pumpkins, Squash, Gourds	1	Fruit Fresh nes	1	Lentils	2	Cucumbers and Gherkins	2	Barley	6
Cantaloupes&oth Melons	1	Rapeseed	1	Goat Milk	1	Oilseeds nes	2	Vetches	2	Grapes	6
Carrots	1	Rice, Paddy	1	Indigenous Buffalo Meat	1	Onions, Dry	2	Watermelons	2	Peaches and Nectarines	6
Cauliflower	1	Sesame Seed	1	Indigenous Goat Meat	1	Pumpkins, Squash, Gourds	2	Apples	3	Sugar Beets	6
Chestnuts	1	Sheep Milk	1	Jute	1	Rice, Paddy	2	Beans, Green	3	Tobacco Leaves	6
Chillies&Peppers, Green	1	Spinach	1	Jute-Like Fibres	1	Safflower Seed	2	Chick-Peas	3	Onions+Shallots, Green	7
Cocoons, Reelable	1	Sweet Potatoes	1	Mangoes	1	Sesame Seed	2	Chillies&Peppers, Green	3	Strawberries	7
Cucumbers and Gherkins	1	Tang.Mand.Clement.Satsma	1	Millet	1	Sugar Cane	2	Lentils	3	Grapefruit and Pomelos	8
Eggplants	1	Tea	1	Okra	1	Tea	2	Pistachios	3	Lettuce	8
Eggs, excluding Hen	1	Tobacco Leaves	1	Peas, Green	1	Vegetables Fresh nes	2	Sheep Milk	3	Okra	8
Flax Fibre and Tow	1	Tomatoes	1	Pigeon Peas	1	Wheat	2	Sour Cherries	3	Rye	8
Garlic	1	Vegetables Fresh nes	1	Pimento, Allspice	1	Coconuts	3	Spices nes	3	Almonds	9
Ginger	1	Walnuts	1	Pulses nes	1	Fruit Tropical Fresh nes	3	Tomatoes	3	Anise, Badian, Fennel	9
Groundnuts in Shell	1	Watermelons	1	Spices nes	1	Hen Eggs	3	Berries nes	4	Broad Beans, Green	9
Hen Eggs	1	Wheat	1	Beans, Dry	2	Nutmeg, Mace, Cardamons	3	Chestnuts	4	Buffalo Milk	9
Honey	1	Cinnamon (Canella)	2	Cabbages	2	Potatoes	3	Eggplants	4	Indigenous Goat Meat	9
Lettuce	1	Jute-Like Fibres	2	Cashew Nuts	2	Rapeseed	3	Honey	4	Plums	9
Mushrooms	1	Pimento, Allspice	2	Cauliflower	2	Sorghum	3	Olives	4	Tang.Mand.Clement.Satsma	9
Oilseeds nes	1	Spices nes	2	Cocoons, Reelable	2	Tobacco Leaves	3	Onions, Dry	4	Hen Eggs	10
Onions, Dry	1	Wool, Greasy	2	Cow Milk, Whole, Fresh	2	Indigenous Chicken Meat	4	Spinach	4	Indigenous Geese Meat	10



China - Top 10 Commodities

■ Production in International \$

■ Production in Metric Tonnes

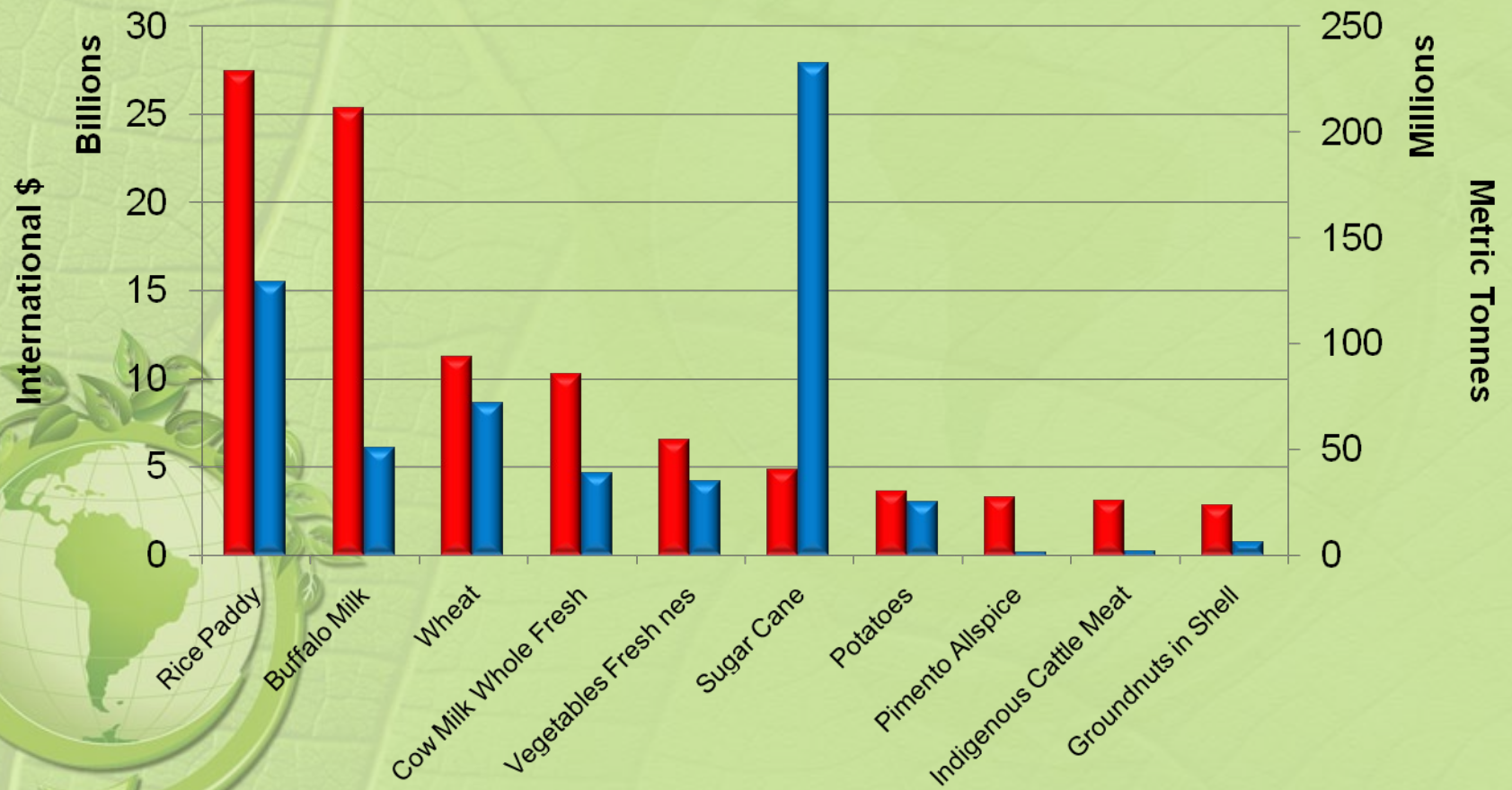




India - Top 10 Commodities

■ Production in International \$

■ Production in Metric Tonnes



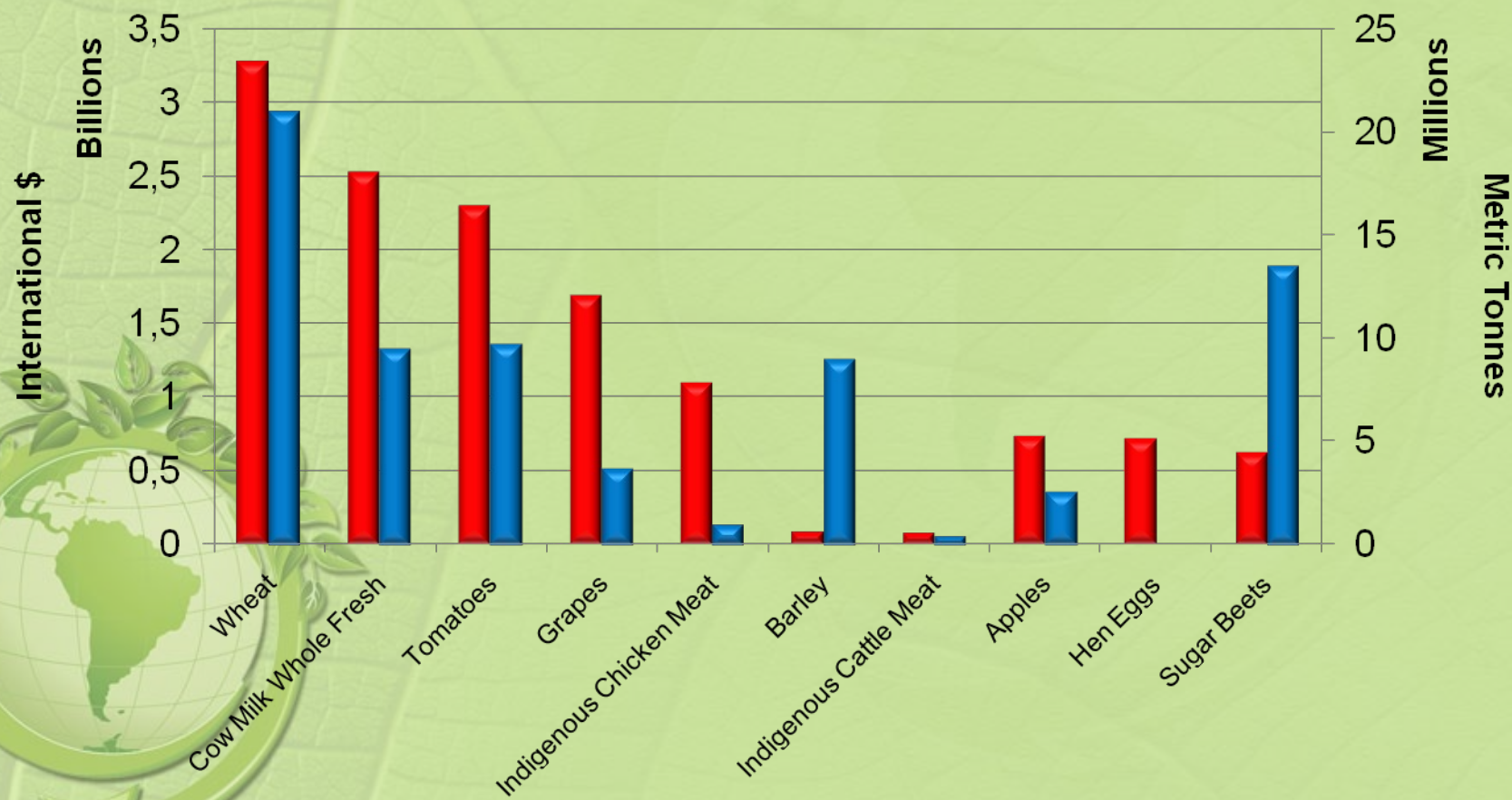
(Source : www.fao.org - 2005)



Turkey - Top 10 Commodities

■ Production in International \$

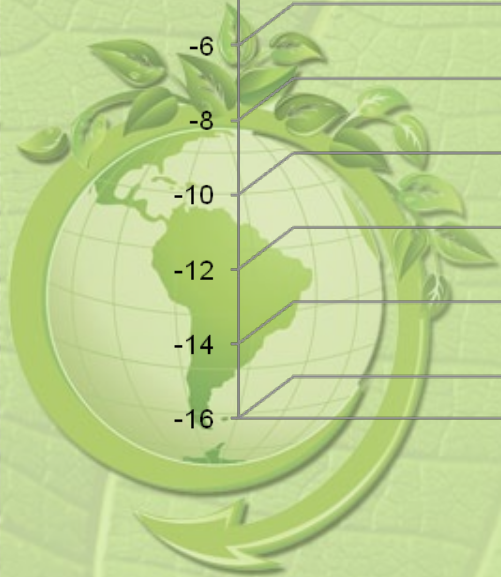
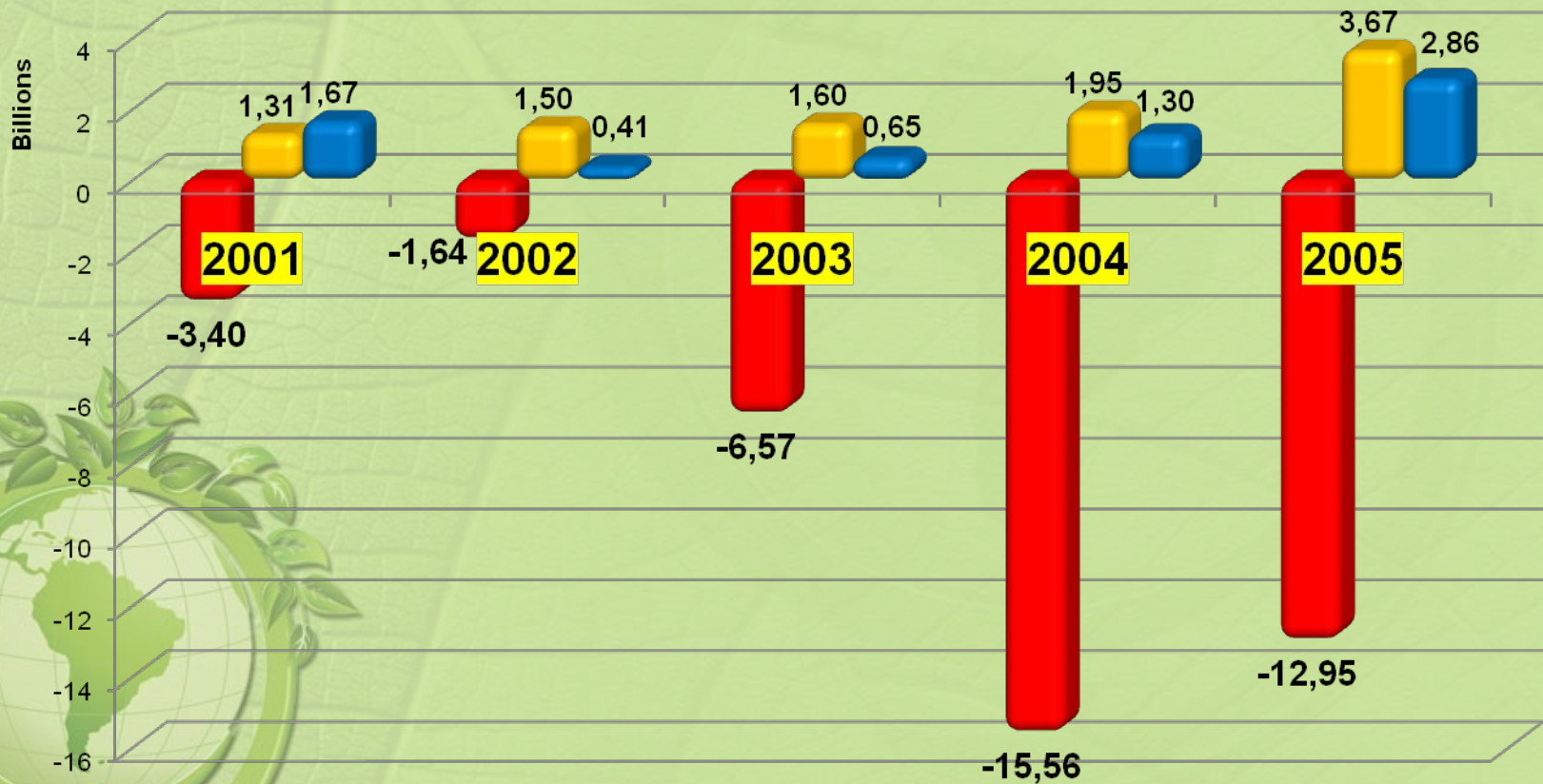
■ Production in Metric Tonnes

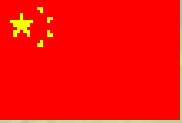


(Source : www.fao.org - 2005)

Agricultural Trade Balance

■ China ■ India ■ Turkey





Share of Agriculture in Total Trade of China (%)

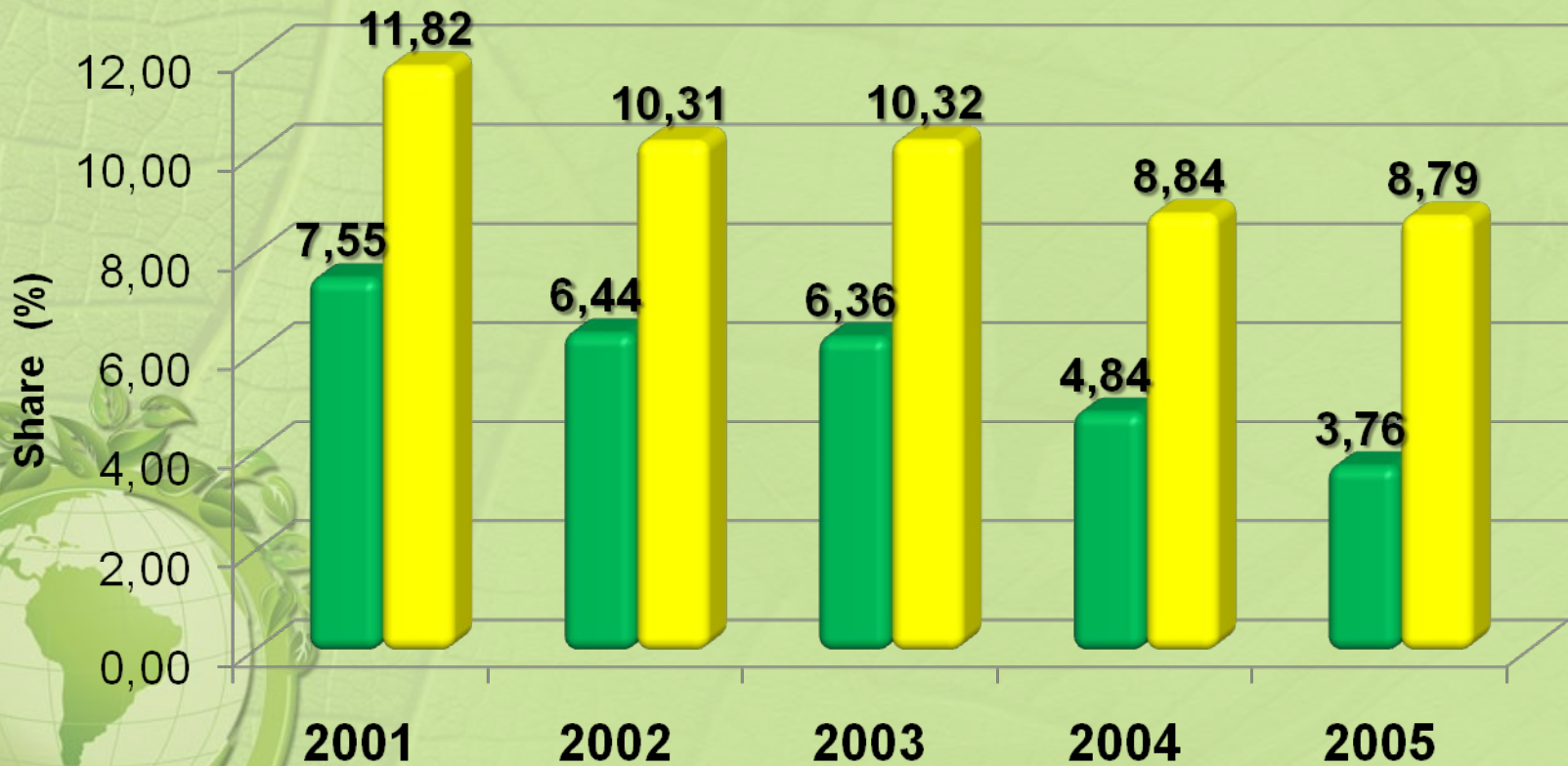
■ Imports ■ Exports





Share of Agriculture in Total Trade of India (%)

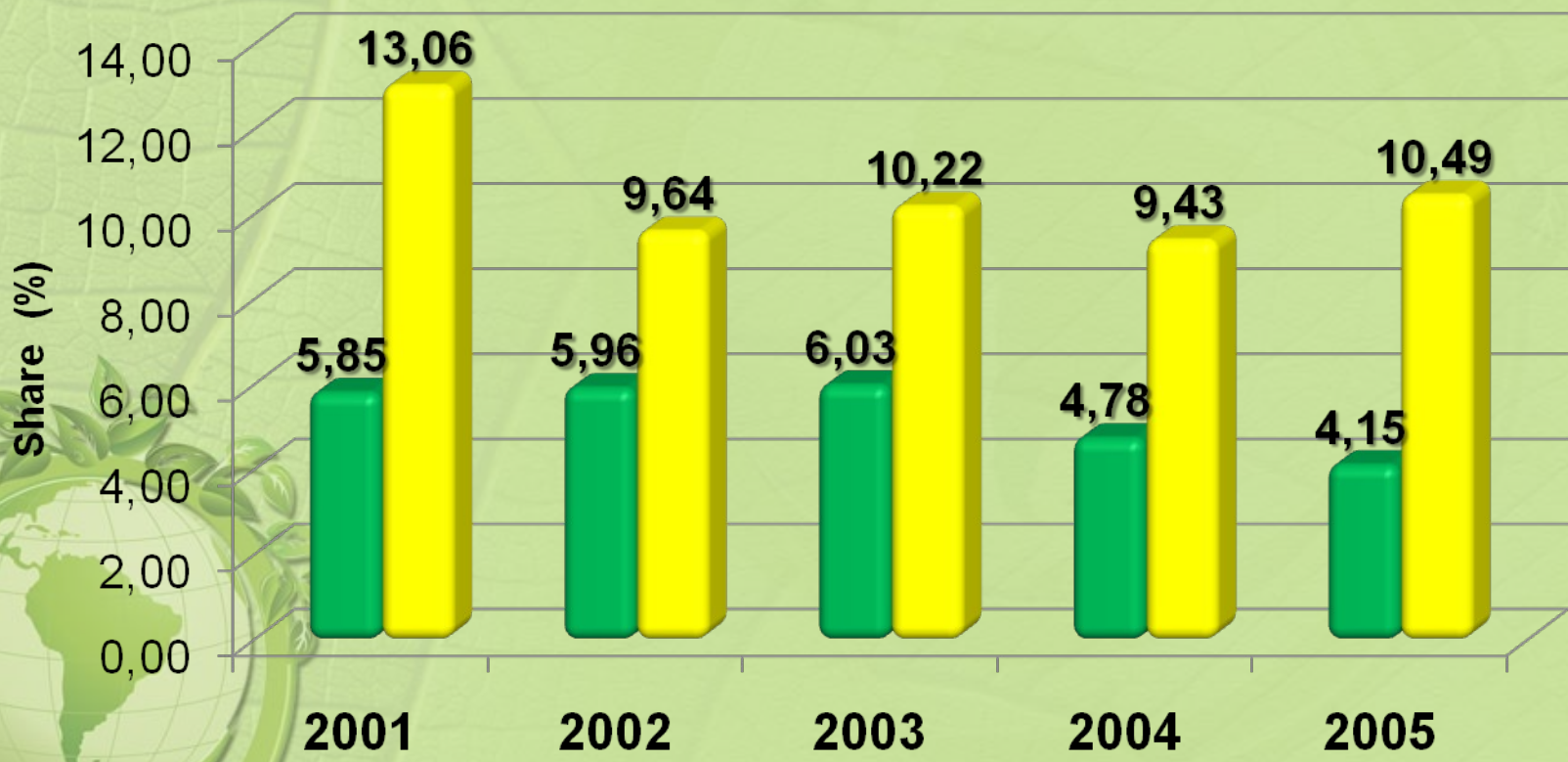
■ Imports ■ Exports





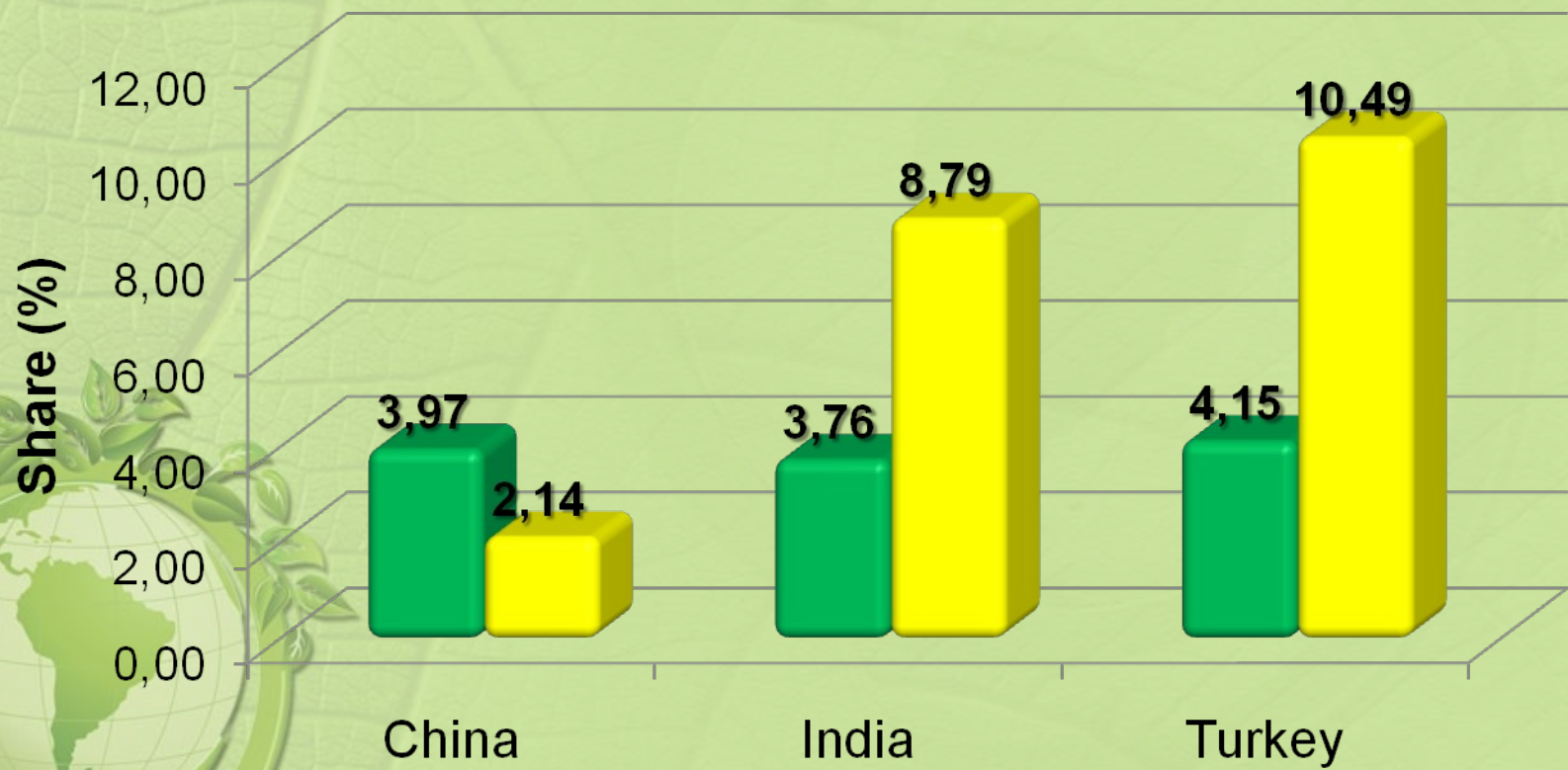
Share of Agriculture in Total Trade of Turkey (%)

■ Imports ■ Exports



Share of Agriculture in Total Trade in Comparison – 2005

■ Imports ■ Exports





China - Imports of 10 Major Commodity Groups (millions \$)



item	2001	2002	2003	2004	2005
Oilseeds -22 +	3810	3200	6205	7937	8737
Fixed Vegetab Oils -42 +	689	1517	2867	4057	3257
Cereals +	1541	1348	1434	3380	2471
Fruit + Vegetables -05 +	1240	1208	1420	1757	2065
Tobacco +	908	682	847	858	1026
Total Meat +	790	850	988	668	931
Dairy Products+Eggs-02 +	463	452	531	658	702
Milk Cond+Dry+Fresh +	400	388	442	528	543
Rice +	101	110	146	313	221
Pulses +	58	50	43	52	97
Oranges+Tang+Clem +	37	31	50	48	48
Olive Oil,Total +	21	17	18	22	32



China - Exports of 10 Major Commodity Groups (millions \$)



item	2001	2002	2003	2004	2005
Fruit + Vegetables -05 +	3982	4472	5430	6381	7586
Total Meat +	1466	1392	1423	1620	1968
Cereals +	1117	1726	2651	821	1502
Oilseeds -22 +	462	464	581	592	706
Tobacco +	391	439	503	524	553
Pulses +	281	320	359	332	389
Fixed Vegetab Oils -42 +	107	91	100	115	229
Rice +	352	392	495	233	225
Dairy Products+Eggs-02 +	78	97	99	126	160
Oranges+Tang+Clem +	37	52	71	99	129
Milk Cond+Dry+Fresh +	39	53	45	55	80
Olive Oil,Total +	0	0	0	1	1



India - Imports of 10 Major Commodity Groups (millions \$)

item	2001	2002	2003	2004	2005
Fixed Vegetab Oils -42 +	1448	1808	2514	2411	2042
Fruit + Vegetables -05 +	1050	1030	1049	1081	1456
Pulses +	737	608	555	428	634
Oilseeds -22 +	2	10	16	15	19
Tobacco +	4	9	12	24	18
Dairy Products+Eggs-02 +	7	14	28	12	9
Cereals +	1	1	2	3	8
Olive Oil,Total +	3	3	3	3	5
Milk Cond+Dry+Fresh +	2	2	19	3	3
Total Meat +	0	0	0	1	1
Oranges+Tang+Clem +	0	0	0	0	1
Rice +	0	0	0	0	0



India - Exports of 10 Major Commodity Groups (millions \$)

item	2001	2002	2003	2004	2005
Cereals +	1072	1657	1580	2001	1652
Fruit + Vegetables -05 +	872	905	961	1167	1588
Rice +	707	1212	895	1478	1411
Total Meat +	263	280	363	379	619
Oilseeds -22 +	211	147	363	286	319
Tobacco +	180	211	236	274	302
Pulses +	83	73	72	125	255
Fixed Vegetab Oils -42 +	159	120	157	273	234
Dairy Products+Eggs-02 +	74	62	73	135	224
Milk Cond+Dry+Fresh +	37	20	14	68	133
Oranges+Tang+Clem +	7	6	11	7	8
Olive Oil,Total +	0	0	0	1	0



Turkey - Imports of 10 Major Commodity Groups (millions \$)



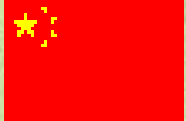
item	2001	2002	2003	2004	2005
Fixed Vegetab Oils -42 +	269	337	409	425	626
Oilseeds -22 +	134	223	411	470	625
Fruit + Vegetables -05 +	118	140	130	161	284
Tobacco +	283	208	235	239	276
Cereals +	180	373	695	521	190
Rice +	58	86	123	62	97
Dairy Products+Eggs-02 +	21	36	50	68	75
Pulses +	64	37	14	15	59
Milk Cond+Dry+Fresh +	6	10	22	28	25
Oranges+Tang+Clem +	0	5	6	6	12
Total Meat +	0	0	0	0	0
Olive Oil,Total +	0	4	2	0	0



Turkey - Exports of 10 Major Commodity Groups (millions \$)



item	2001	2002	2003	2004	2005
Fruit + Vegetables -05 +	2143	1930	2549	3407	4374
Tobacco +	435	367	419	478	590
Cereals +	196	121	171	221	547
Fixed Vegetab Oils -42 +	165	70	225	175	359
Olive Oil,Total +	136	44	163	135	305
Oranges+Tang+Clem +	118	107	144	147	185
Pulses +	194	109	196	167	158
Dairy Products+Eggs-02 +	35	25	40	49	73
Oilseeds -22 +	29	26	48	51	60
Total Meat +	18	14	20	25	40
Milk Cond+Dry+Fresh +	3	3	5	7	16
Rice +	1	1	1	1	1



Agricultural Machinery Sector

in

China

India

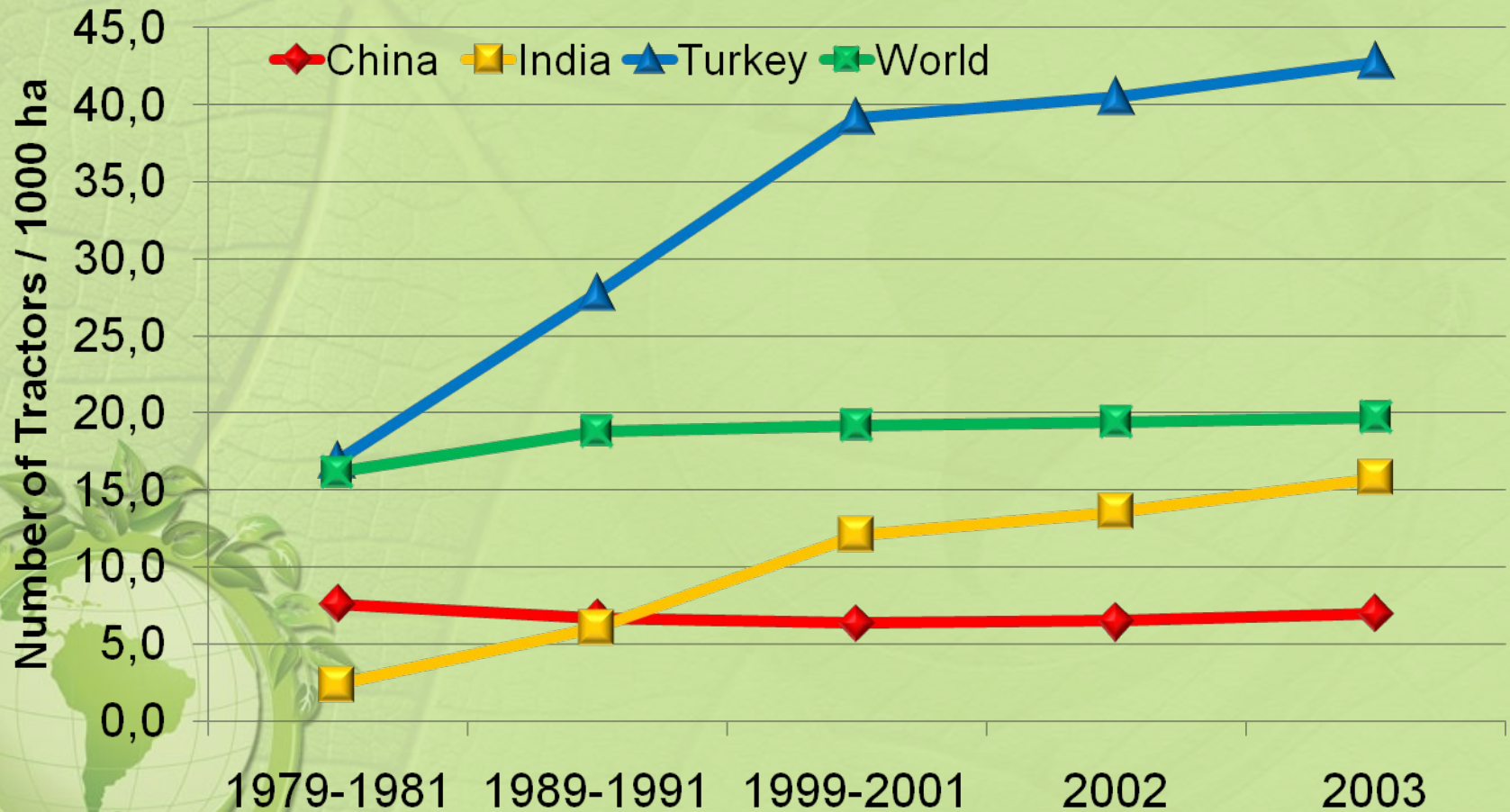
Turkey



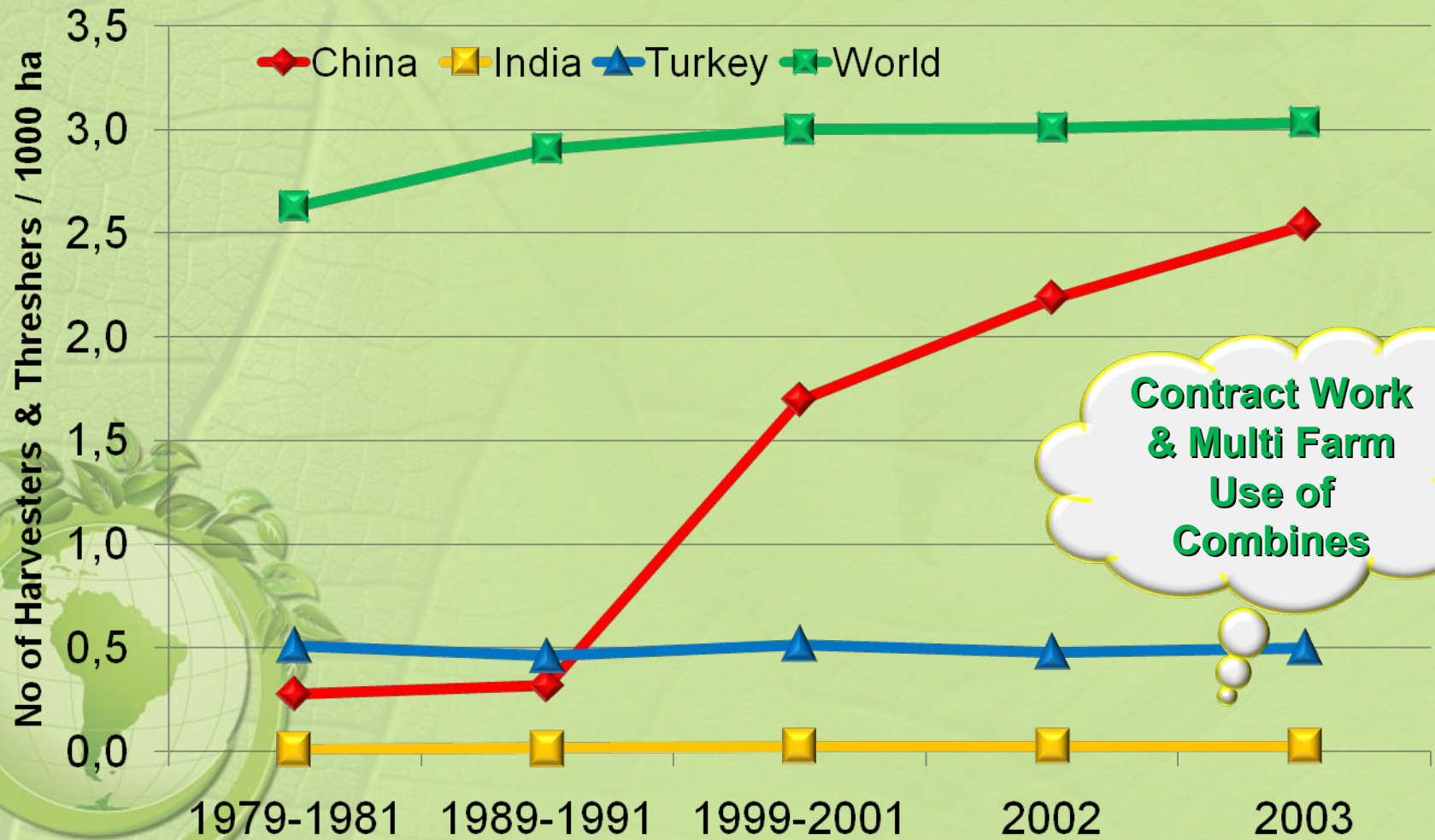
Agricultural Machinery Sector in Comparison - 2003

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.	Turkey	1.53	42.7	0.5
8.	Argentina	--	10.74	1.79
9.	Brazil	--	13.66	0.915
10.	China	--	6.98	2.53
11.	Pakistan	--	16.47	0.08
12.	Egypt	--	30.70	0.79

Tractor Population in Comparison



Harvesters & Threshers Population in Comparison



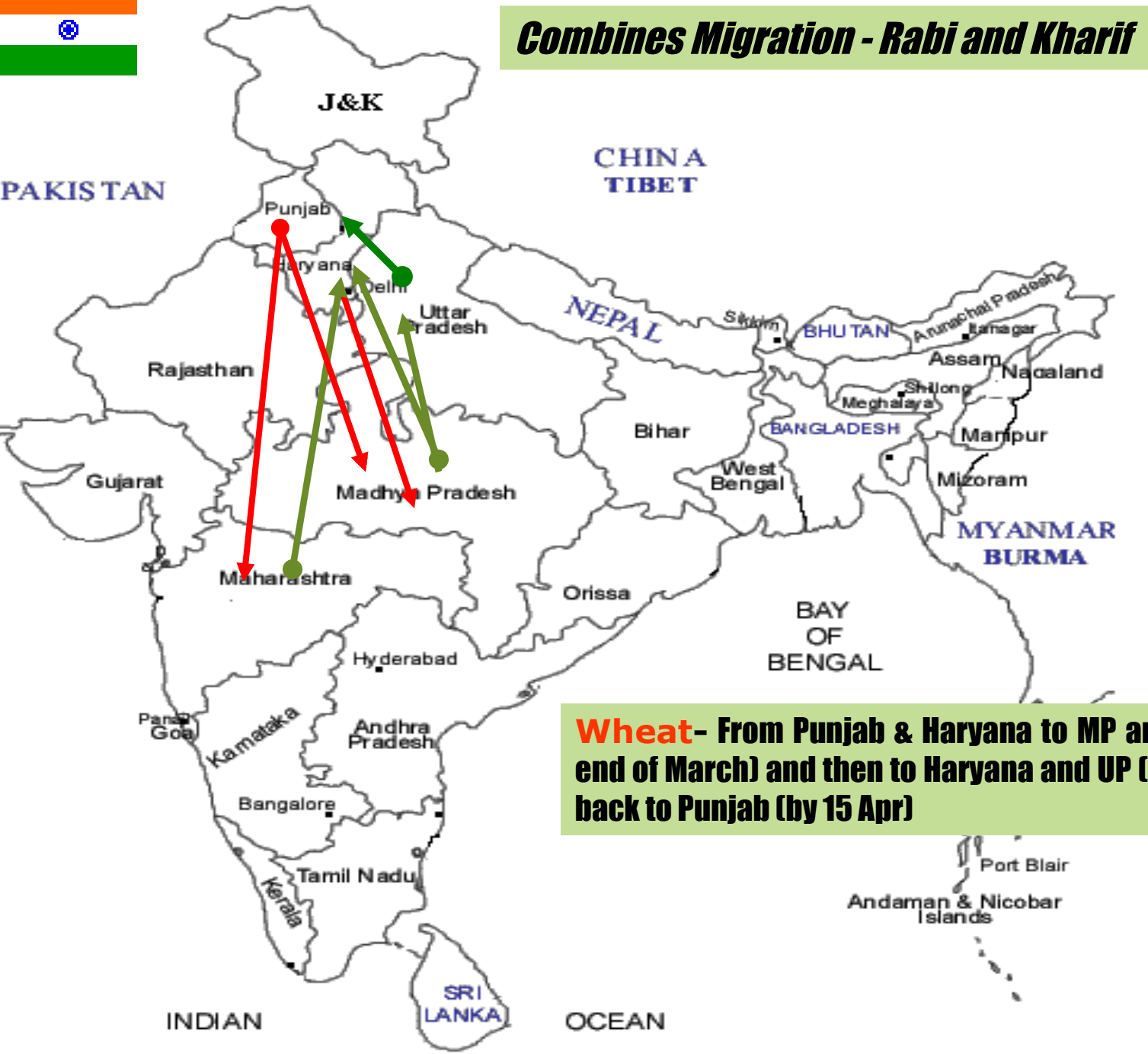
Contract Work
& Multi Farm
Use of
Combines



Combines Migration - Rabi and Kharif



PAKISTAN



Wheat- From Punjab & Haryana to MP and Maharashtra (till end of March) and then to Haryana and UP (till 10th April). Return back to Punjab (by 15 Apr)



INDIAN

SRI LANKA

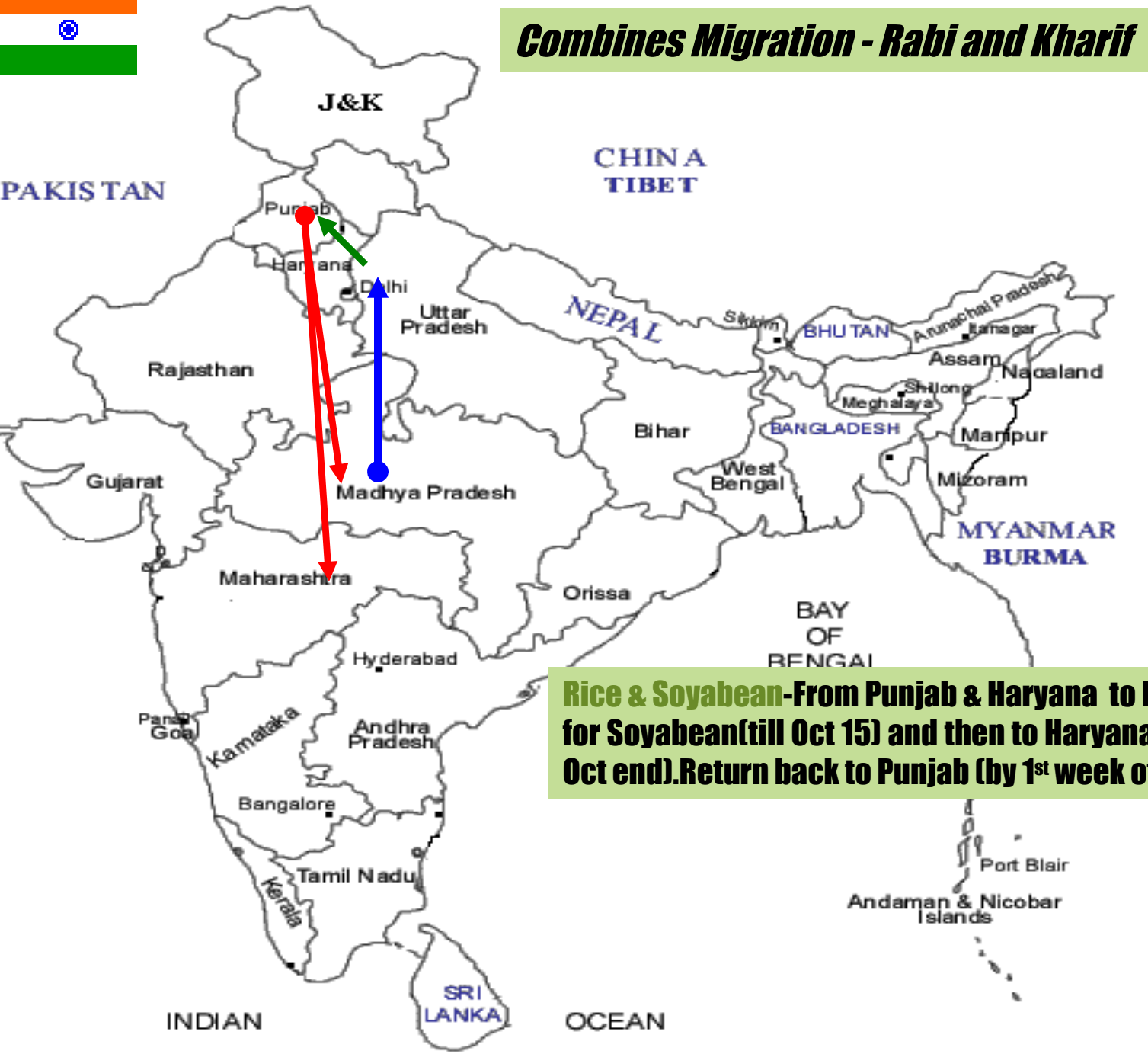
OCEAN



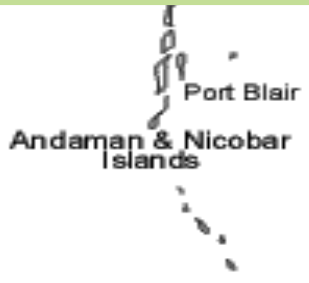
Combines Migration - Rabi and Kharif



PAKISTAN



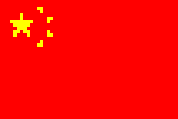
Rice & Soyabean-From Punjab & Haryana to MP and Maharashtra for Soyabean(till Oct 15) and then to Haryana and UP for Rice (till Oct end).Return back to Punjab (by 1st week of Nov)



INDIAN

SRI LANKA

OCEAN



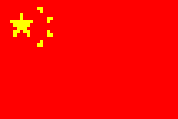
Current Status of Agricultural Machinery Sector in China



Main Reasons of Fast development of Chinese Agricultural Machinery Industry

- **Government policies**
- **Socialization of agricultural machinery operation**
- **Adjustment of agricultural structure**





Current Status of Agricultural Machinery Sector in China

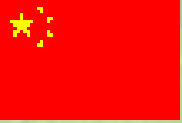
Main Reasons of Fast development of Chinese Agricultural Machinery Industry

Government policies

• Chinese government has attached great importance to agriculture, rural areas and farmers, made a series of policies that favorite to the farmers,

- added the financial subsidy to the agriculture,
- especially constituted the subsidy policies for the farmers on their agricultural machinery purchasing (see the table, Unit: Million RMB)

	2004	2005	2006	2007	2008
Central Government	70	300	600	2000	4000
Local Government	410	800	1006		



Current Status of Agricultural Machinery Sector in China

Main Reasons of Fast development of Chinese Agricultural Machinery Industry

Socialization of Agricultural Machinery Operations

- Socialization service of agricultural machinery developed very fast in China.
- At present, there are 35 million specialized households of agricultural machinery with an annual operation income of RMB 282.9 billions Yuan in 2006





Current Status of Agricultural Machinery Sector in China

Main Reasons of Fast development of Chinese Agricultural Machinery Industry

Adjustment of Agricultural Structure

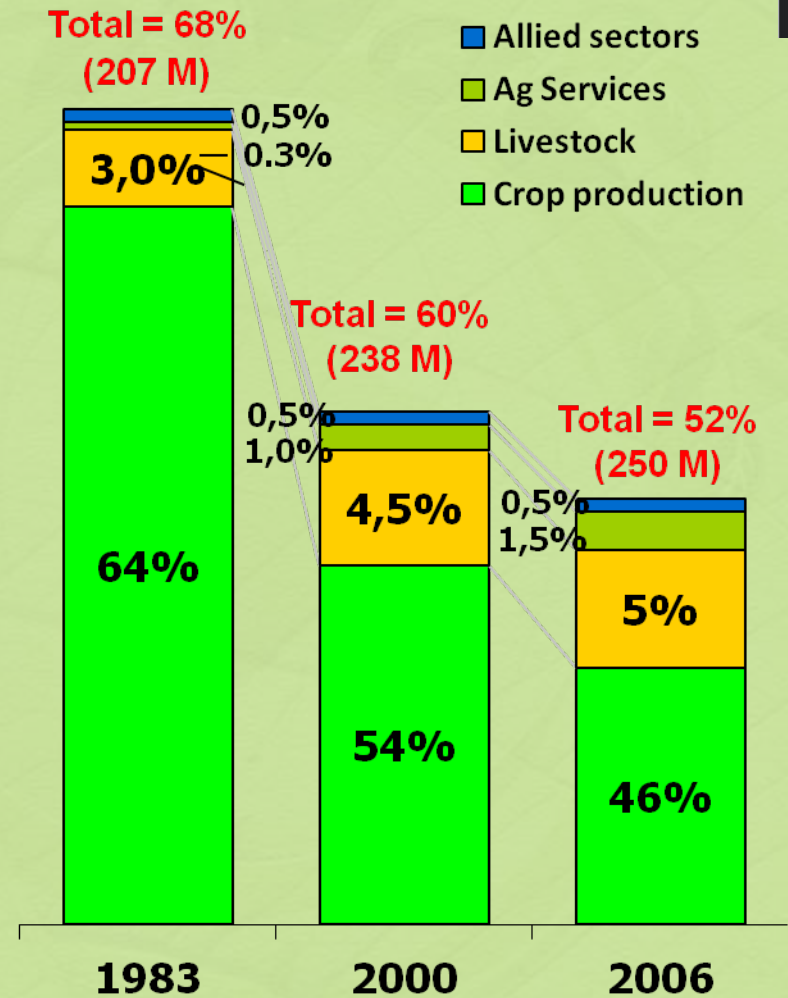
- The adjustment of industrial structure of agriculture is on the way;
 - from giving priority to grain production to overall development of farming, forestry, sideline production and fishery,
 - from traditional agricultural production to agricultural industrialization.





Current Status of Agricultural Machinery Sector in India

- 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 because of ;
 - Crop Diversification
 - Migration
 - To Achieve Higher Productivity
 - Monsoon Dependent (less Time lag for Manual Operations)

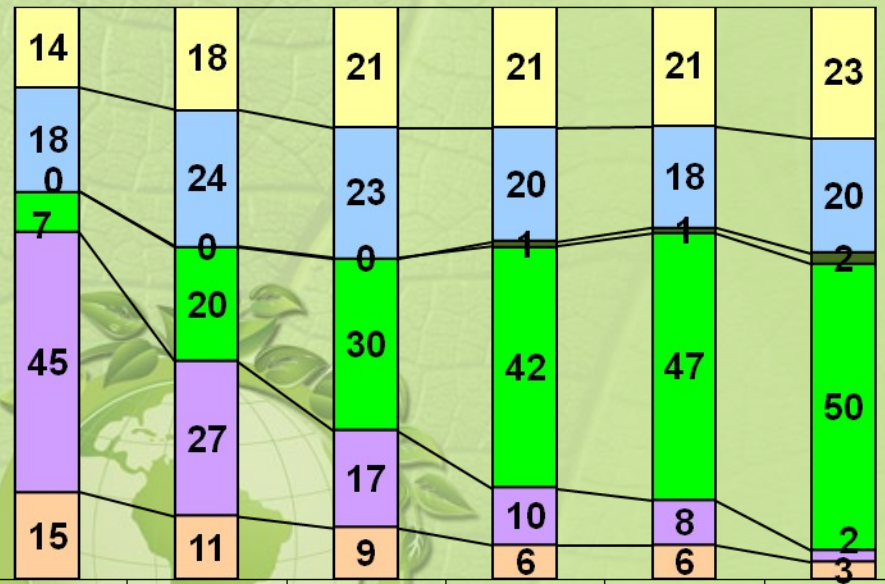




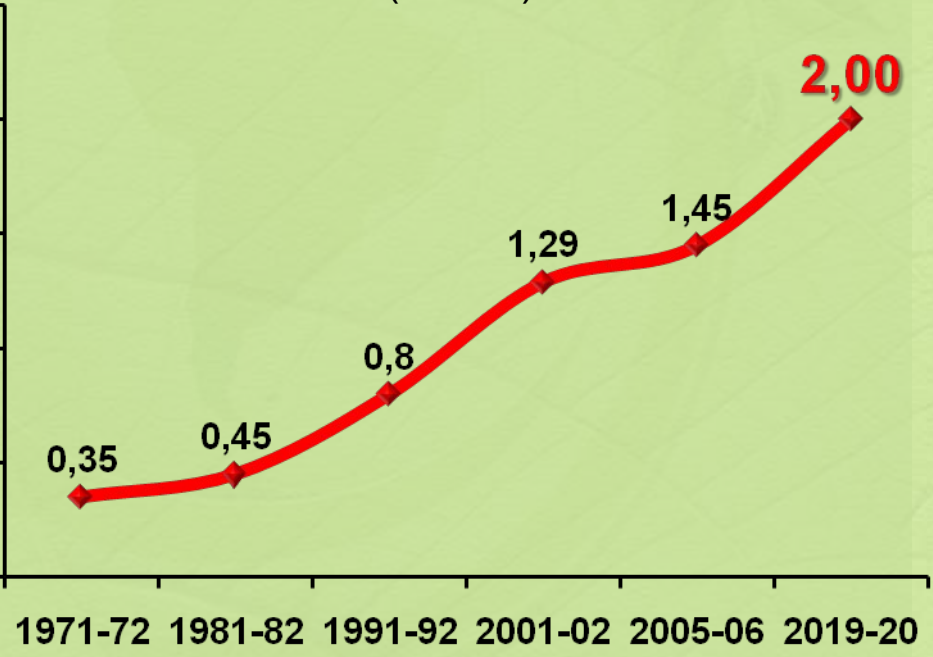
Current Status of Agricultural Machinery Sector in India

Changing Focus on Agri-mechanization - Automation

Percentage share of Power usage in Indian agricultural sector



Total Power Consumption (kW/ha)



Ag worker
 Animal
 Tractor
 Power Tiller
 Diesel Engine
 Electric Motor



Current Status of Agricultural Machinery Sector in India

- Indian agricultural mechanization shows an increasing trend,
- The sale of machines like combines, threshers and other power operated equipment have been increasing throughout the country,
- Northern and Western States achieved a faster growth in mechanization due to;
 - Various plans of the states,
 - Increase in area under irrigation,
 - Growing awareness among farmers
- However, there are **disparities in the levels of mehanization across the states** especially at Northern and Eastern States due to;
 - Hilly topography
 - Socio-economic conditions
 - Hight transport costs,
 - Lack of institutional financing,
 - Lack of farm machinery industry





Current Status of Agricultural Machinery Sector in India

Policies pertaining to Agricultural Machinery Sector; Central Sector

- Subsidies for the purchase of tractors,
- Subsidies for the purchase of various equipment for various objectives;
 - Wheat, maize and millet programmes
 - Oil seed production programme
 - National Pulse development programme
 - Intensive cotton production programme
 - Integrated programme for rice development,
 - R & D support for the development of industrial designs of prototypes of agricultural machinery.



Current Status of Agricultural Machinery Sector in India

Policies pertaining to Agricultural Machinery Sector; State Sector

- Subsidized charges for tractors with matching implements,
- Manufacture of implements by the state governments and providing them to farmers at nominal profits.





Current Status of Agricultural Machinery Sector in India

After Sales Service;

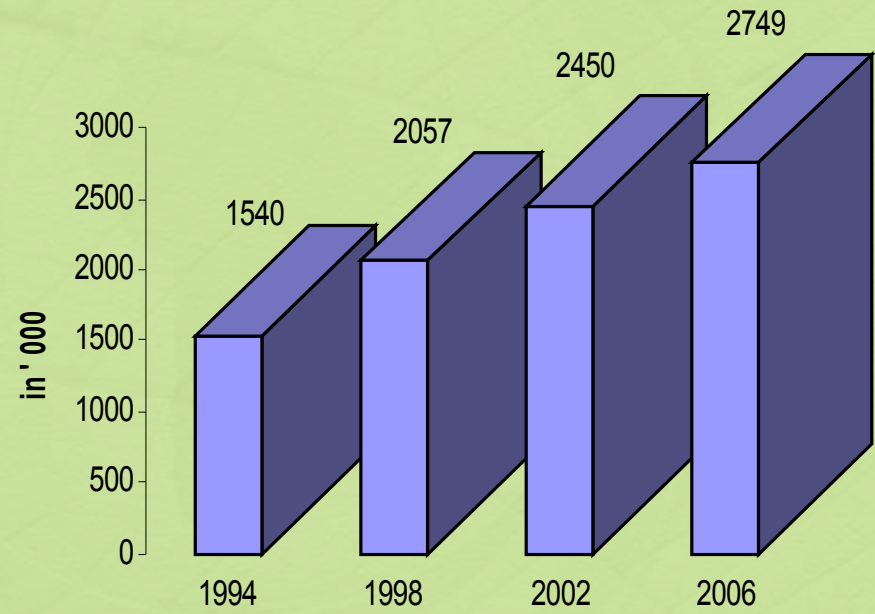
- Large and medium scale manufacturers have well organized distributors and dealers,
 - Good advertising and product promotion
 - Training programmes
 - Services,
 - Repair and maintenance
 - Supply of parts, etc
- Very few small-scale industries to provide after sales service
- Village artisans to provide immediate attention to farmers needs



Current Status of Agricultural Machinery Sector in India

- Use of Tractors has witnessed an increase of more than 78% since 1994
- There are nearly 13500 tractors per million hectares at present in India

NUMBER OF TRACTORS

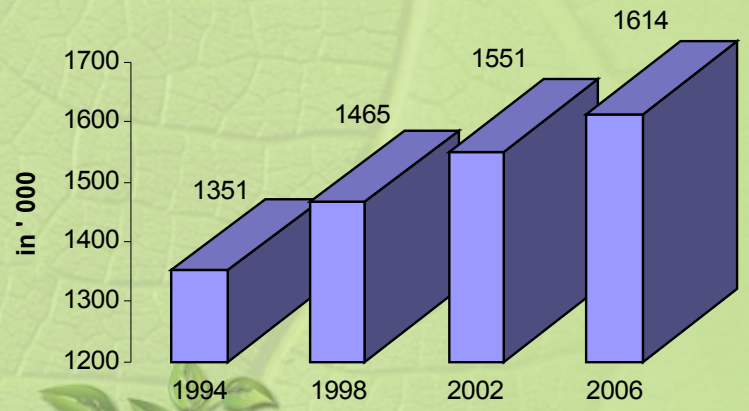




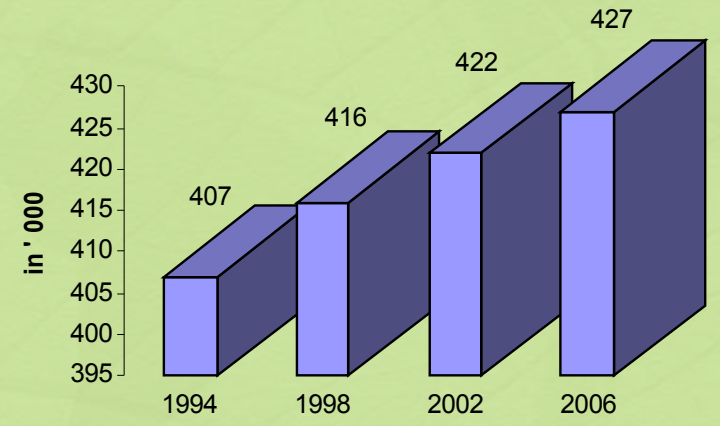
Current Status of Agricultural Machinery Sector in India

Usage Trends of Major Farm Equipment

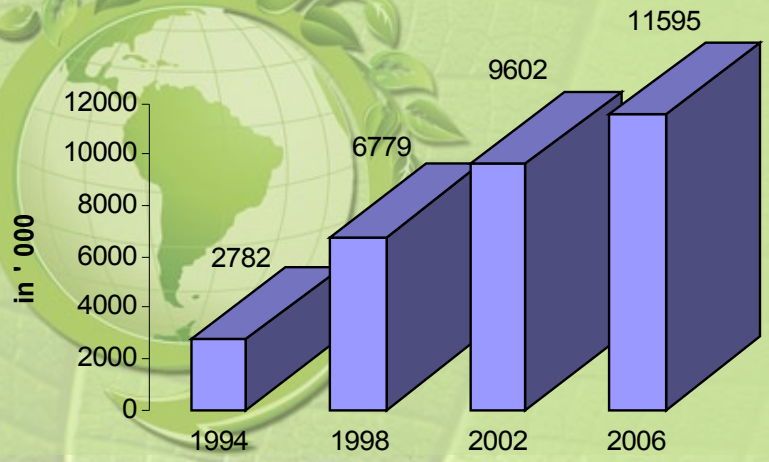
NUMBER OF THRESHOR



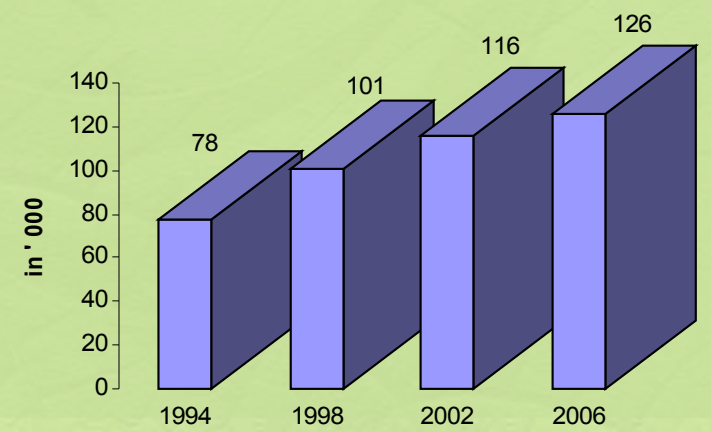
NUMBER OF HARVESTOR



NUMBER OF REAPERS



NUMBER OF MAIZE SHELLERS





Current Status of Agricultural Machinery Sector in India

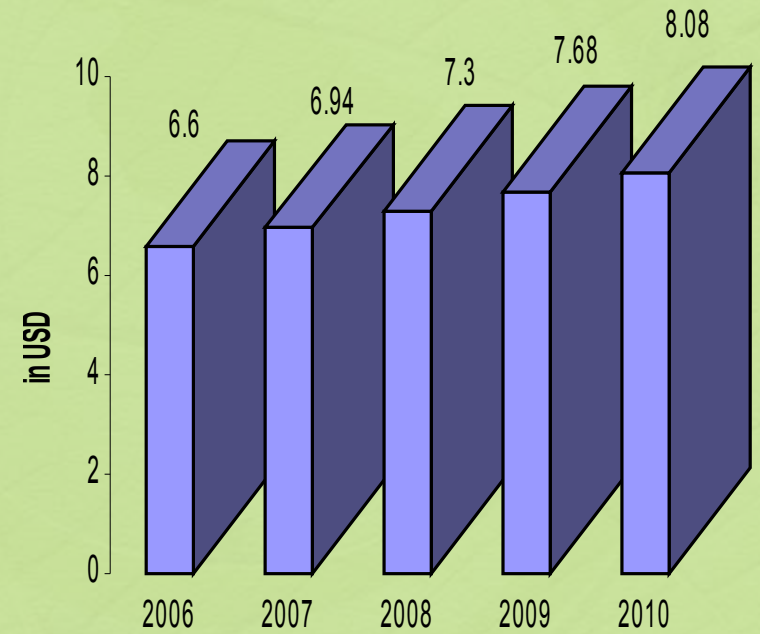
- Indian Farm Equipment Market is expected to grow at a CAGR of ~5%
- Indian Agriculture Farm Equipment Market is now widely exposed to International Trade

Favourable Factors:

- Monsoon
- Government Declared Support Prices for Crops
- Supportive Credit Policy of Banks



INDIAN AGRICULTURE EQUIPMENT MARKET

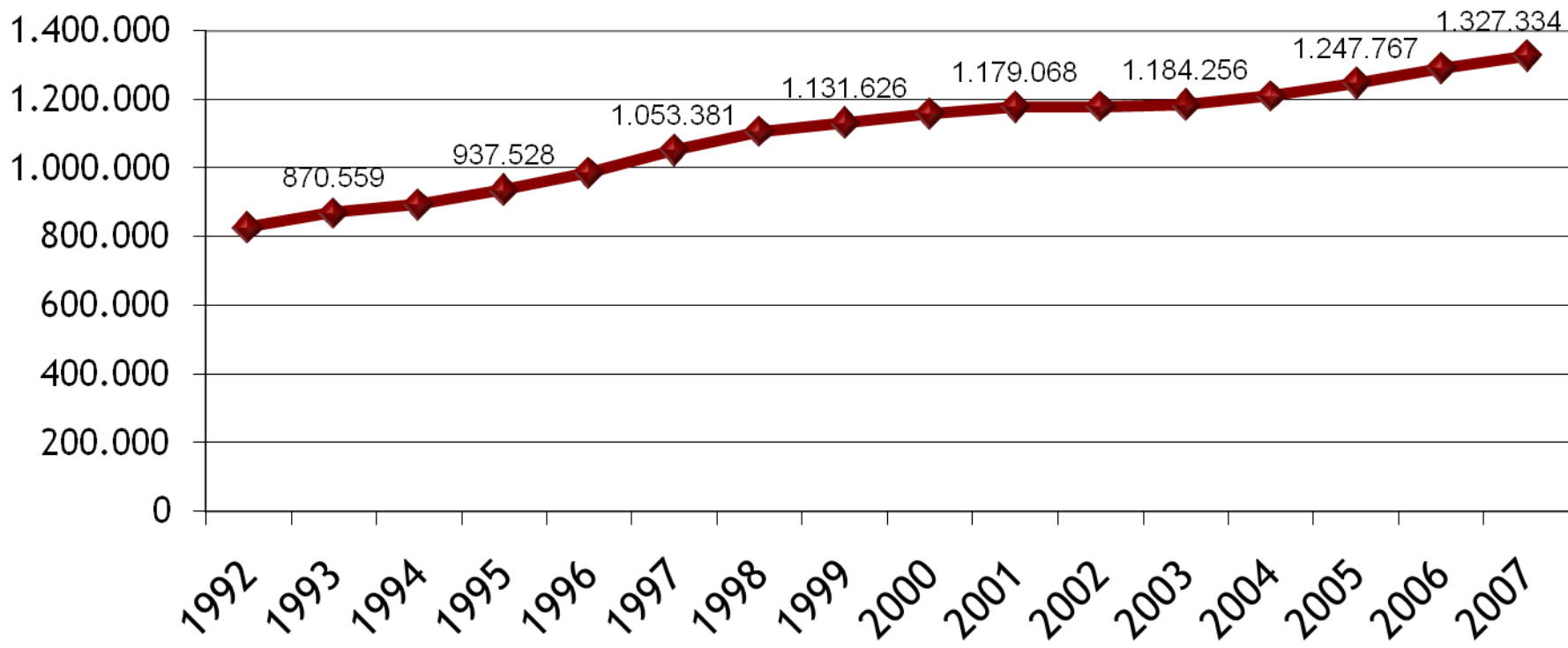




Current Status of Agricultural Machinery Sector in Turkey



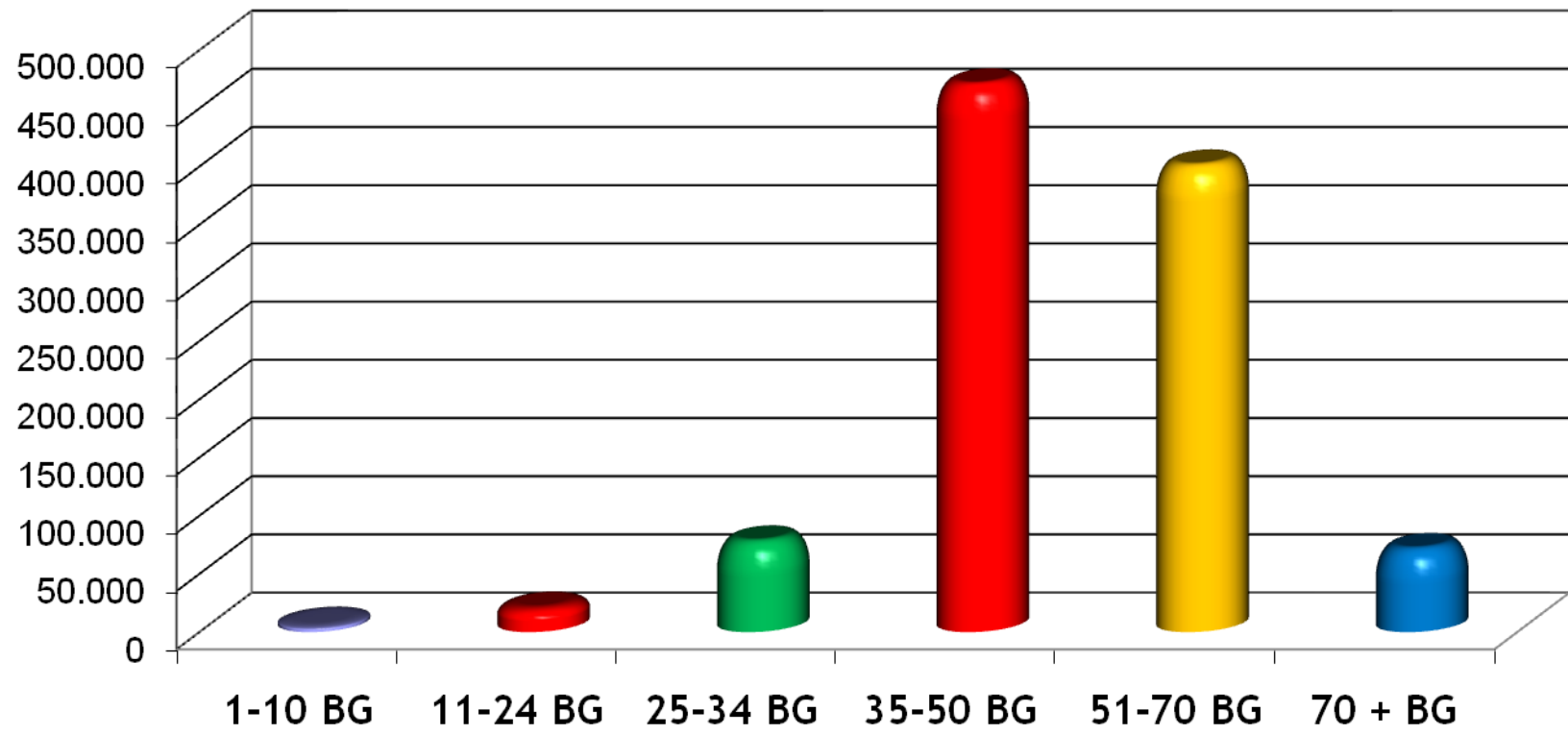
Tractor Park by Years 1992-2007





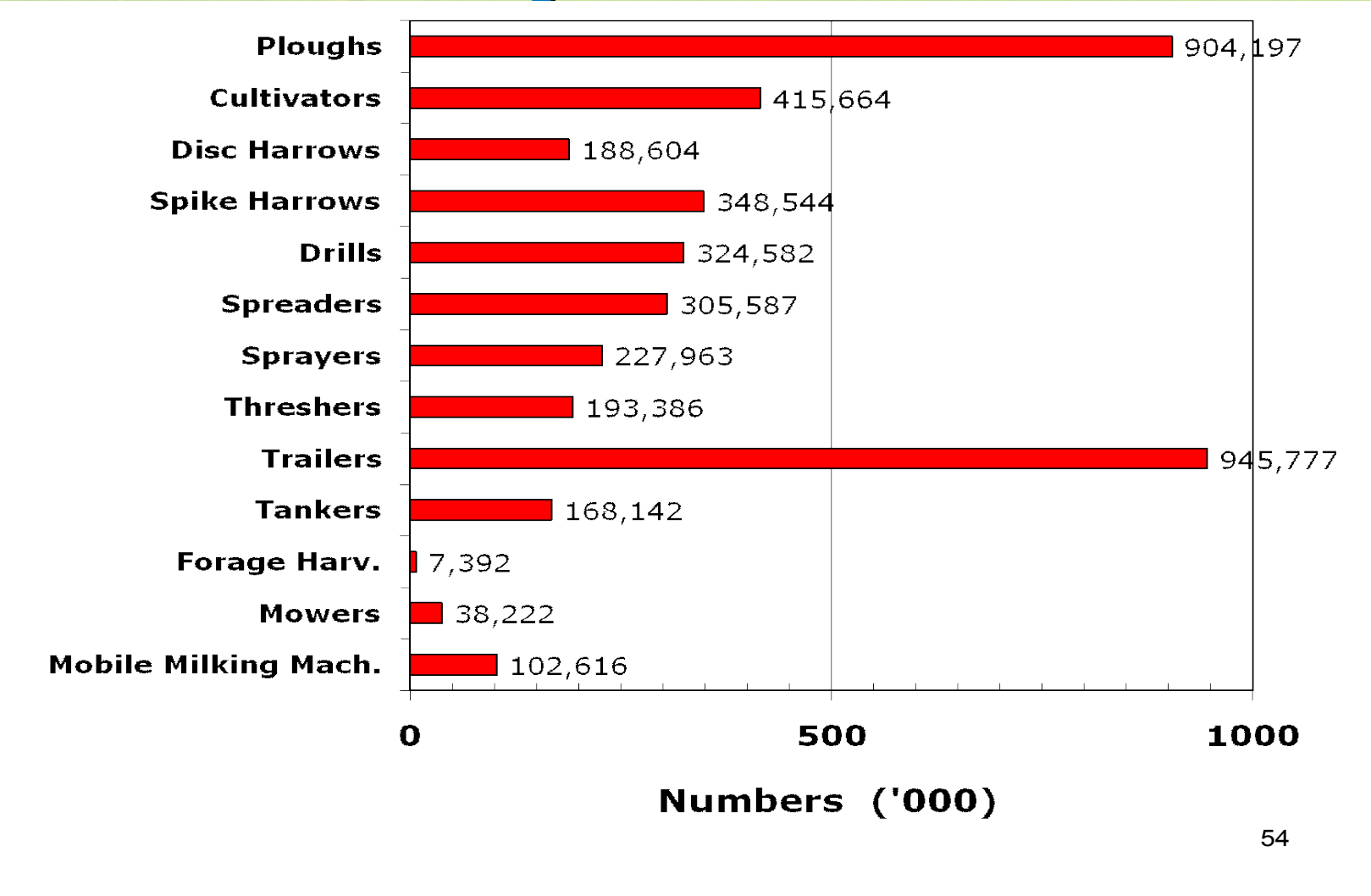
Current Status of Agricultural Machinery Sector in Turkey

Tractor Park (Units) According to Power, 2007





Current Status of Agricultural Machinery Sector in Turkey





Current Status of Agricultural Machinery Sector in Turkey



Ownership and Use of Tractors in Turkey

- 31.5% of 3 075 515 farmers own at least one tractor
- 19.7% of farmers, having land between 0-5 ha, own at least one tractor (39% of tractor park)
- 50.5% of farmers, having land between 5-20 ha, own at least one tractor (46% of tractor park)
- 72% of farmers, having land between 20-50 ha, own at least one tractor (12% of tractor park)
- 85% of farmers, having land larger than 50 ha, own at least one tractor (2.5% of tractor park)





Current Status of Agricultural Machinery Sector in Turkey

Ownership and Use of Tractors in Turkey

- Number of tractors per farming business possessing tractors is between 1.026 – 1.3 tractors
- 74% of farmers (3 0121 190) are using tractors
- 72% of farmers possessing land are cultivated by tractors
- Area cultivated by one tractor is 13.3 ha



Foreign Trade of Agricultural Machinery Sector in World

Country	2003	2004	2005
Germany	1.927	2.637	2.552
USA	1.371	1.756	2.125
Japan	1.139	1.569	1.722
Italy	1.285	1.511	1.658
UK	1.168	1.080	1.365
France	572	839	913
Brasil	303	485	558
Belarussia	243	339	432
Finland	446	372	391
Austria	294	320	356
Belgium	149	228	219
Canada	173	224	217
India	78	111	213
South Korea	134	163	203
China	84	122	156
Turkey	156	147	126
Others	654	792	881
Total	10.183	12.702	14.095

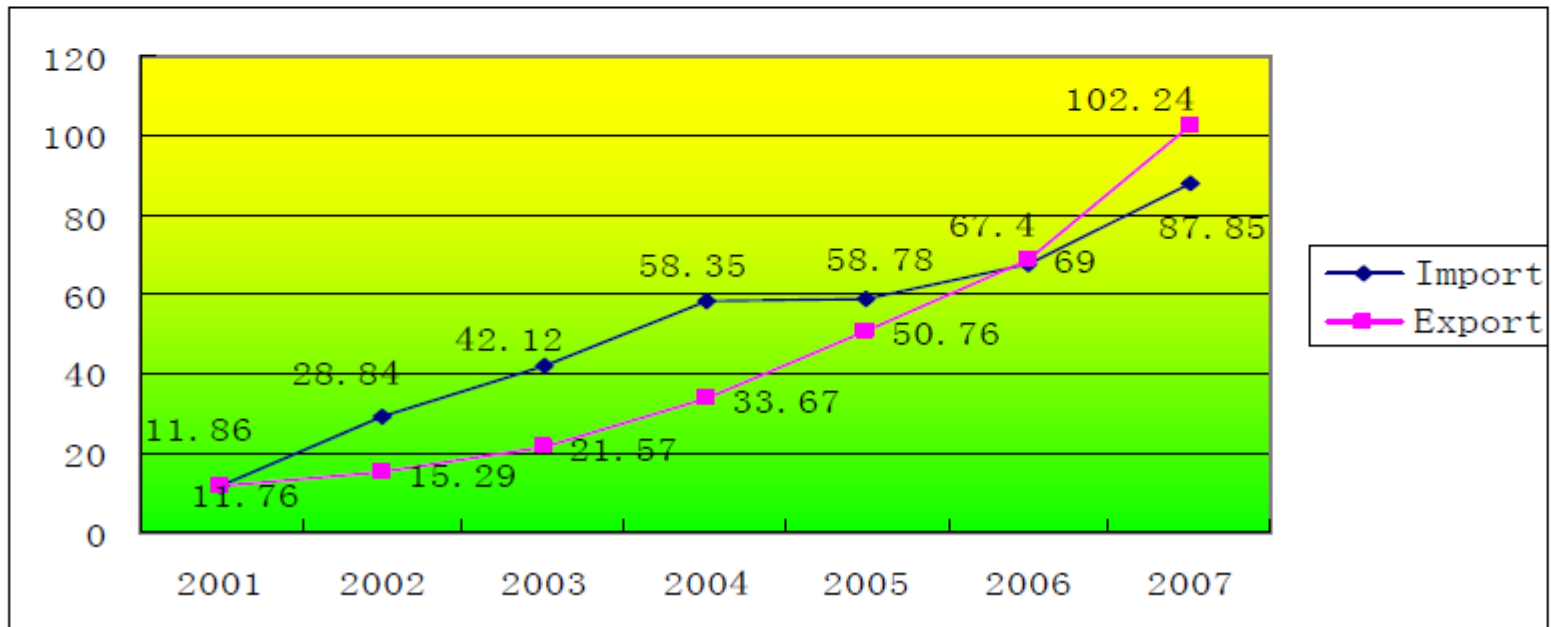


Foreign Trade of Agricultural Machinery Sector in China

Import & Export

- **including** diesel engines and water pumps

Unit:100million USD



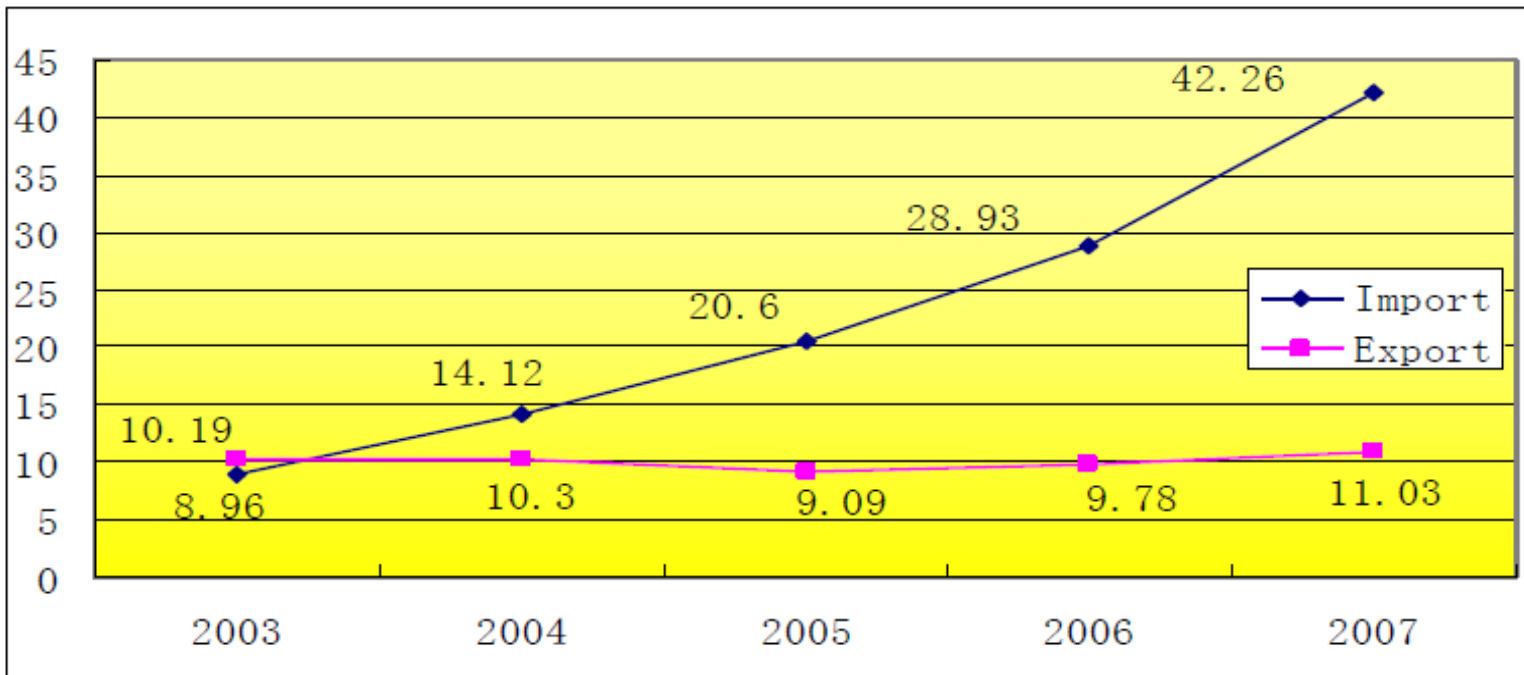


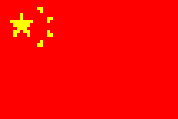
Foreign Trade of Agricultural Machinery Sector in China

Import & Export

- **excluding** diesel engines and water pumps

Unit:100million USD



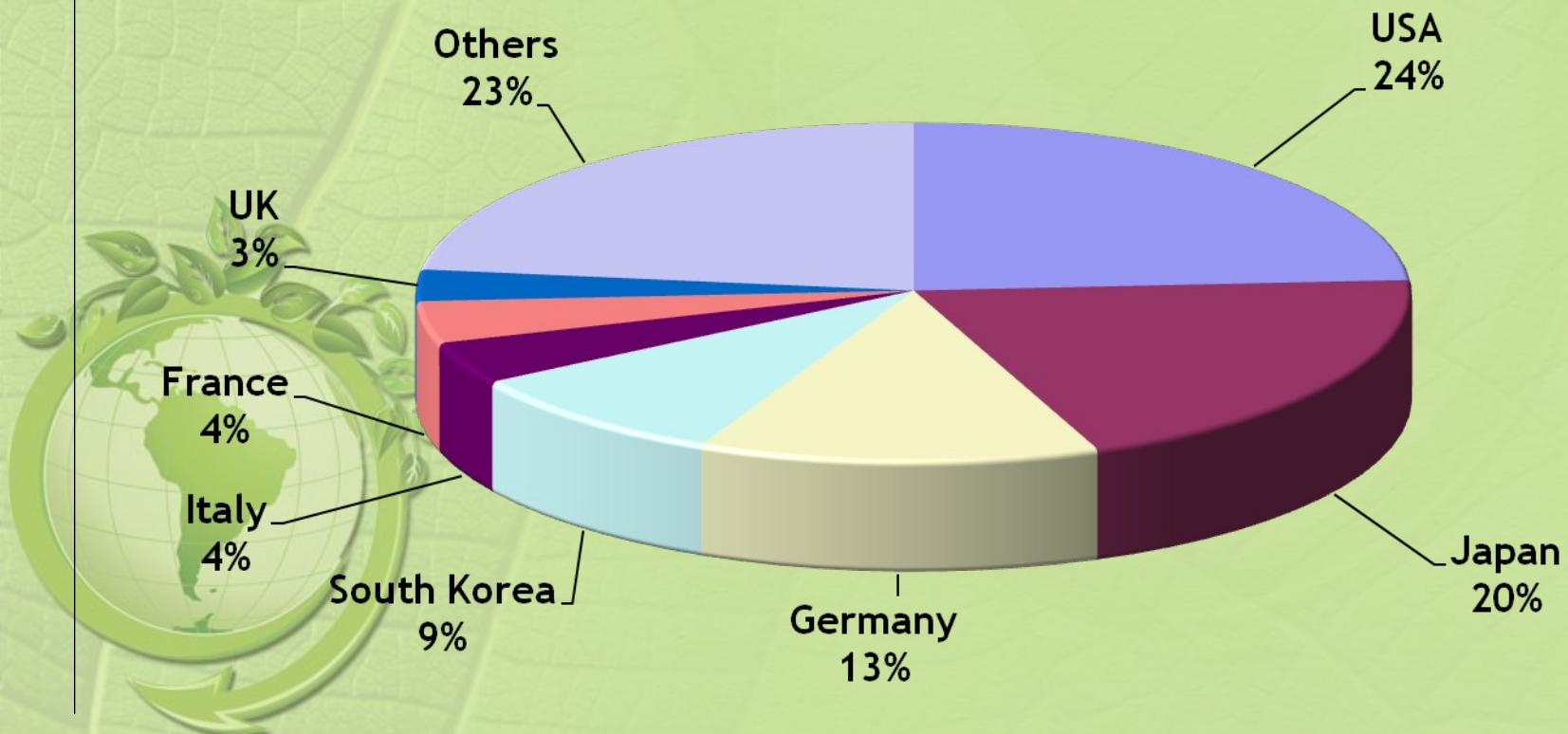


Foreign Trade of Agricultural Machinery Sector in China

Countries from which China Imports Agricultural Machinery

Avg. of 2005-2007

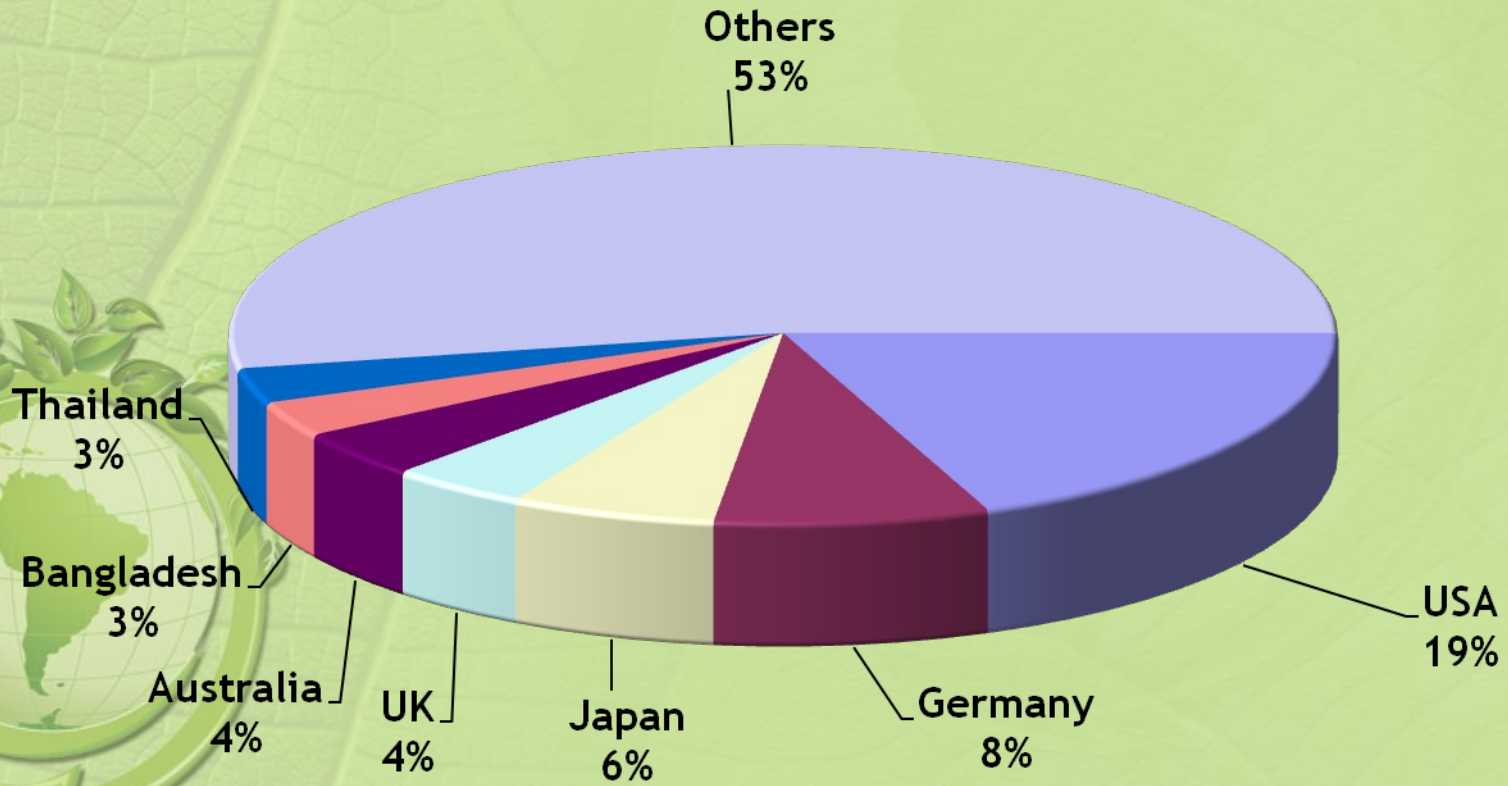
(Total Imports : [2005: 217] [2006: 201,6] [2007:218,7] Million Euros)





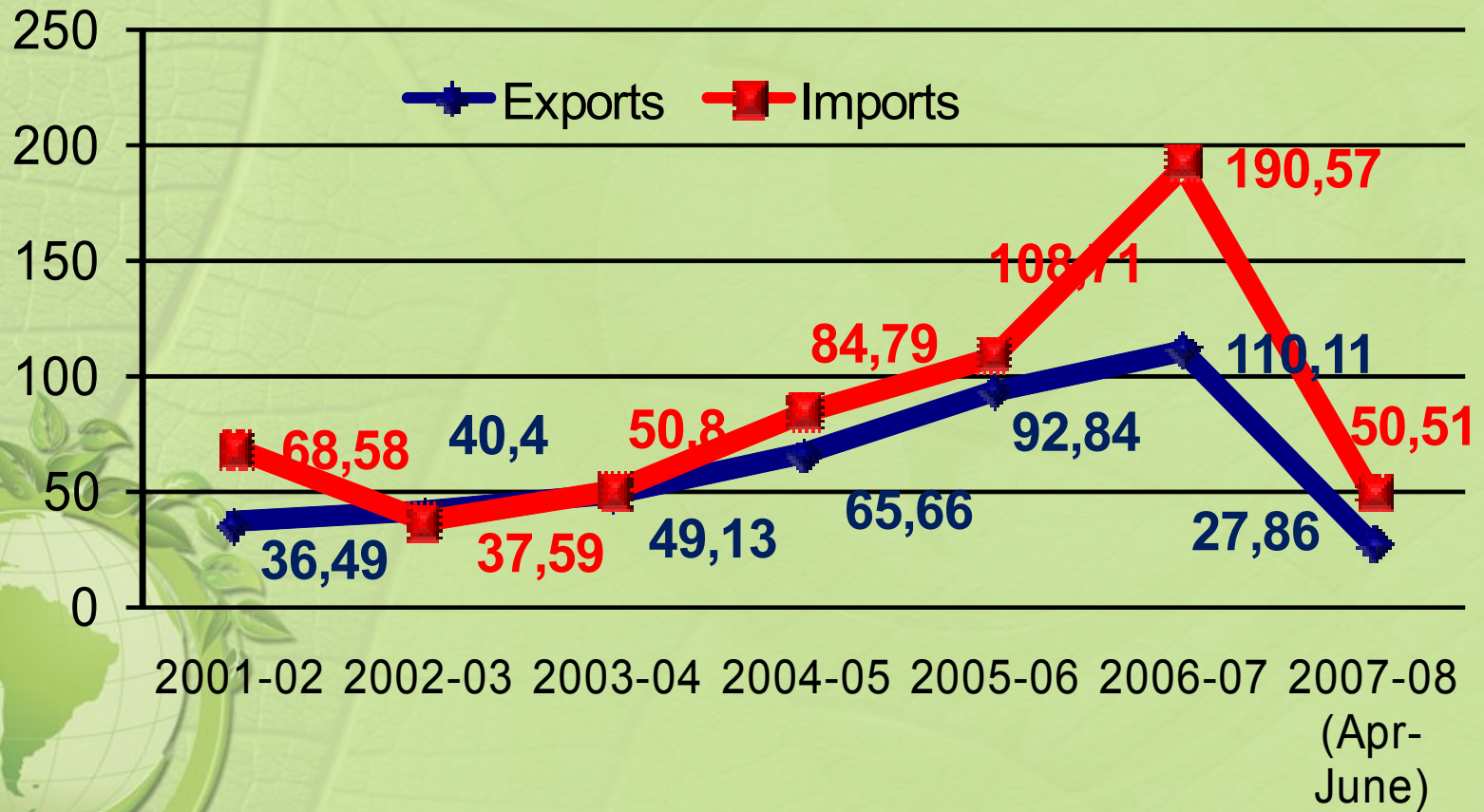
Foreign Trade of Agricultural Machinery Sector in China

Countries to which China Exports Agricultural Machinery
Avg. of 2005-2007
(Total Exports: [2005: 731,6] [2006: 917,2] [2007: 1.320,2] MillionEuros)





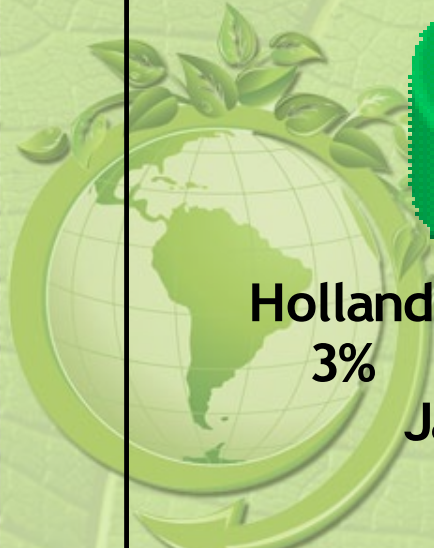
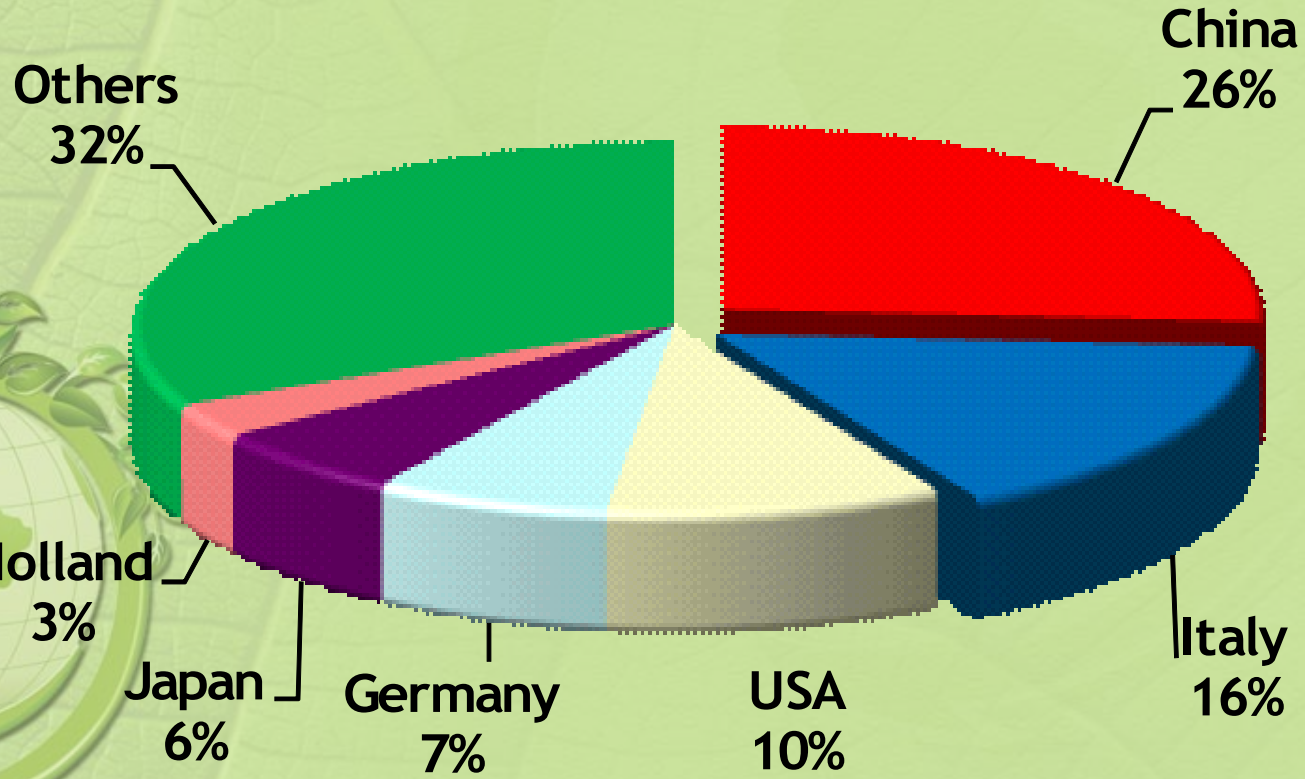
Foreign Trade of Agricultural Machinery Sector in India





Foreign Trade of Agricultural Machinery Sector in India

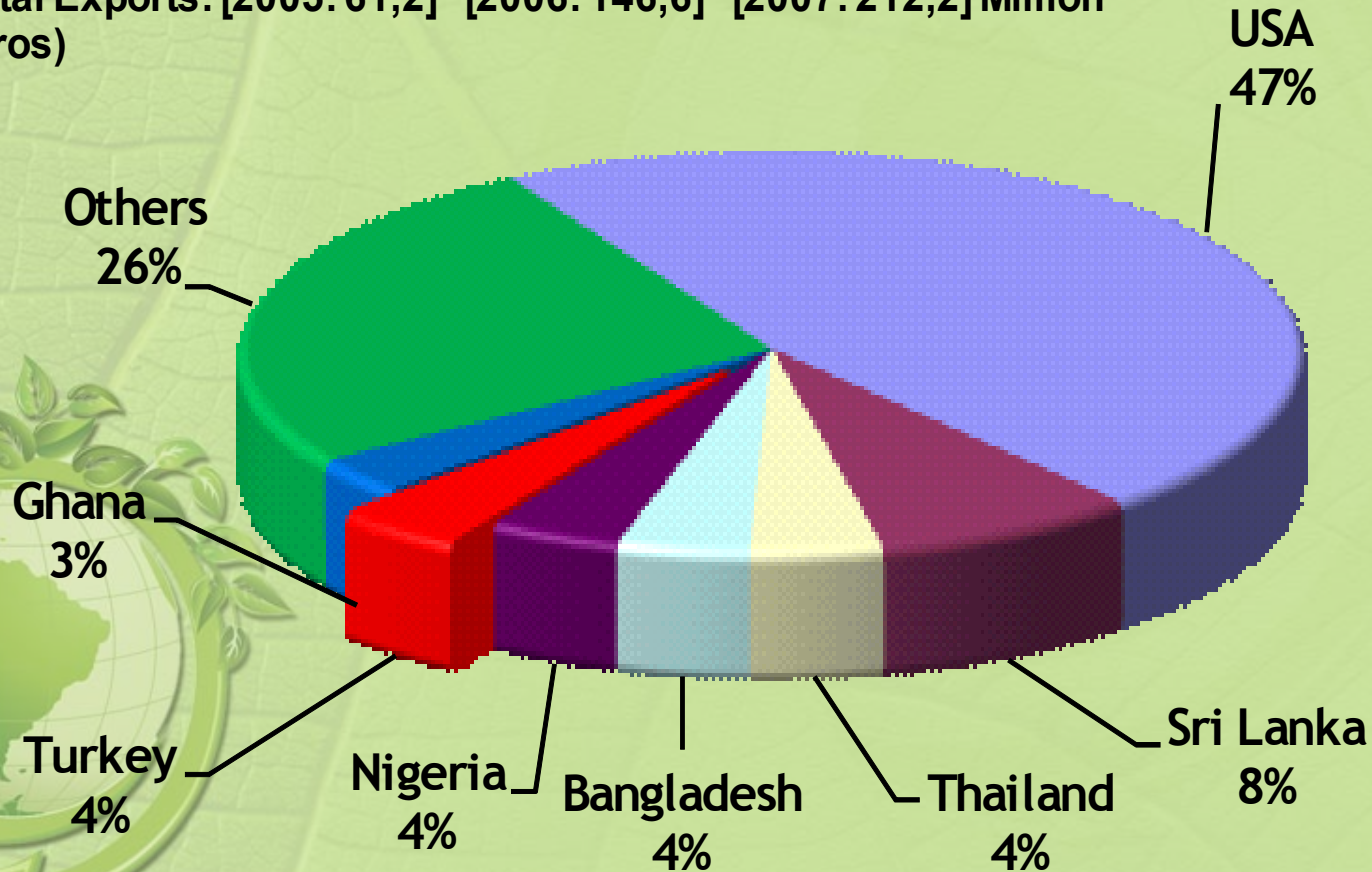
Countries from which India Imports Agricultural Machinery
Avg. of 2005-2007
(Total Imports: [2005:23,8] [2006: 36] [2007:45,4] Million Euros)





Foreign Trade of Agricultural Machinery Sector in India

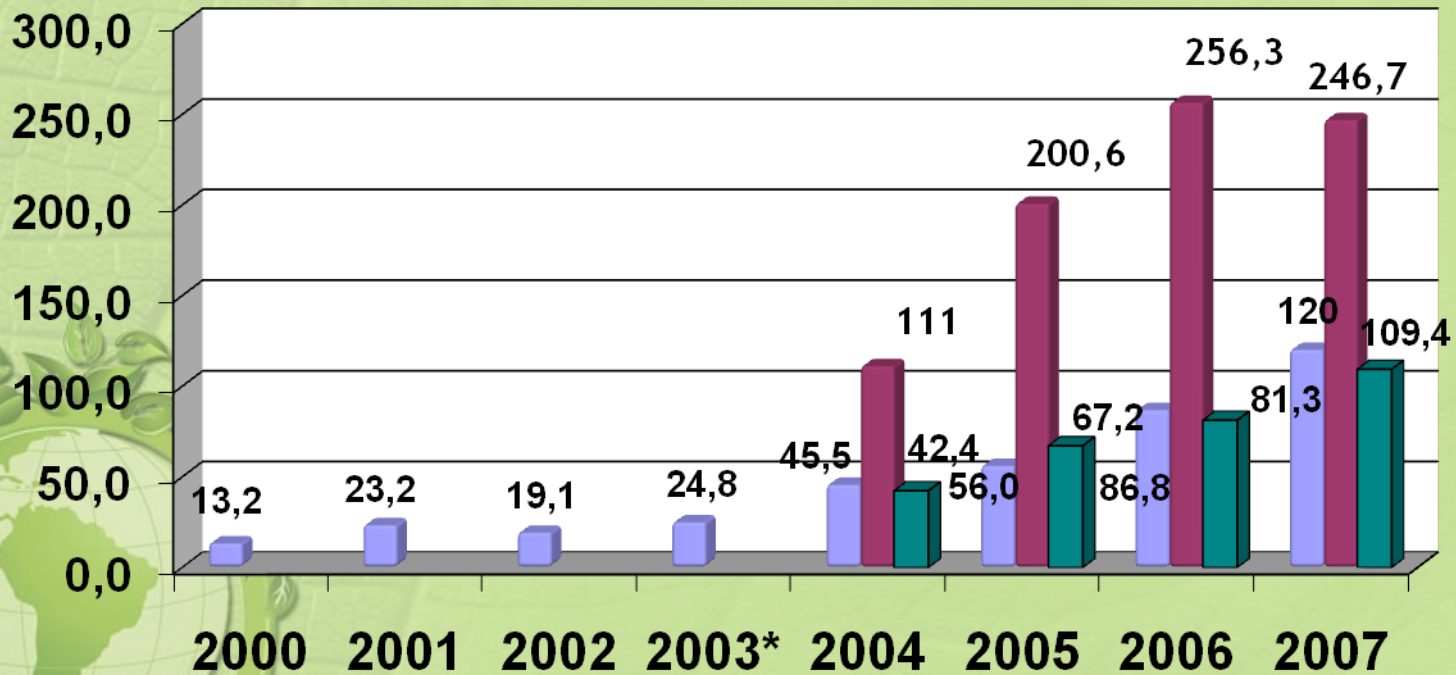
Countries to which India Exports Agricultural Machinery
Avg. of 2005-2007
(Total Exports: [2005: 61,2] [2006: 146,6] [2007: 212,2] Million Euros)





Foreign Trade of Agricultural Machinery Sector in Turkey

Exports & Imports of Agricultural Machinery (excl.tractors) in Turkey by Years (Value, million USD)



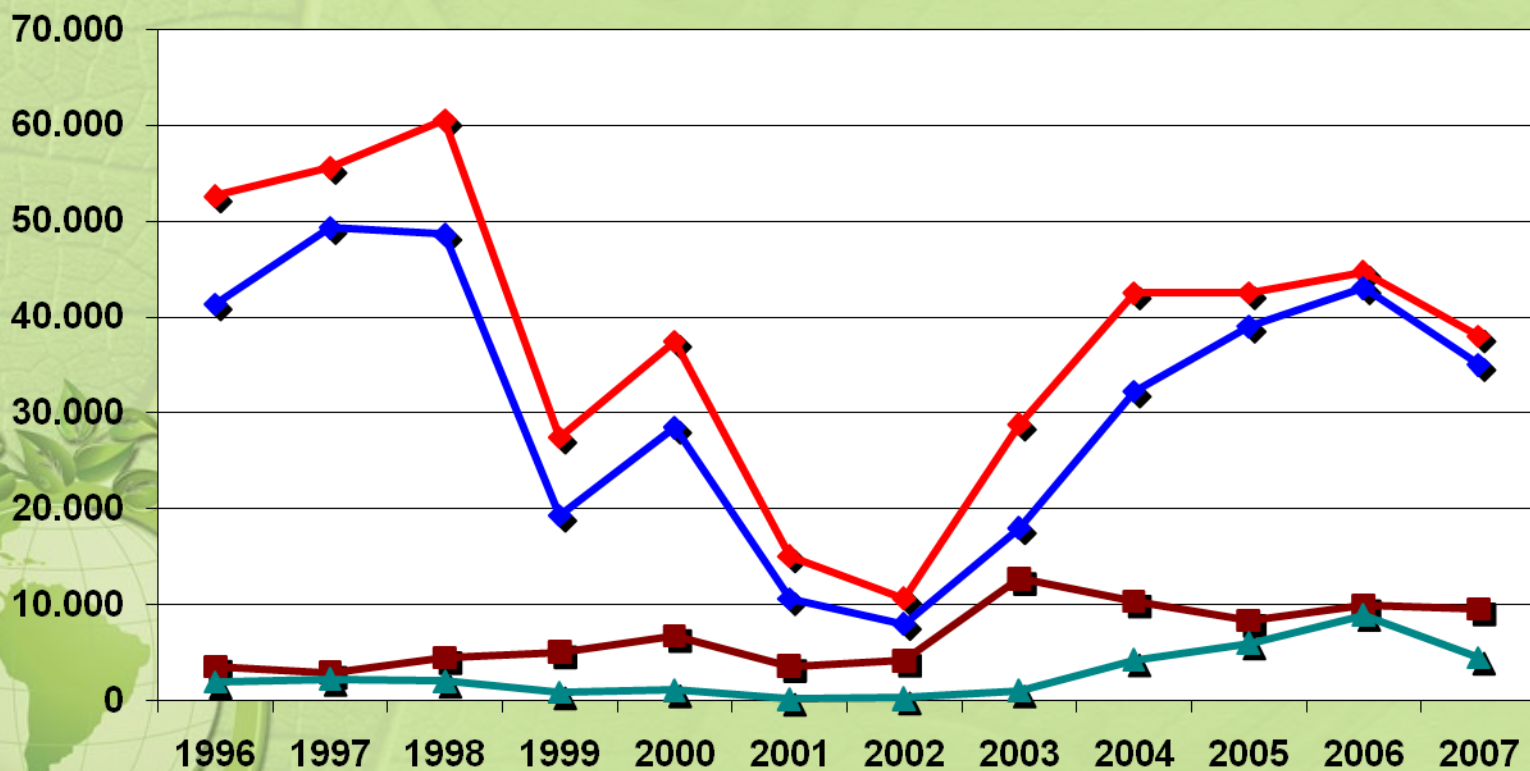
■ Exports ■ Imports ■ Imports (excl. combines, cotton pickers and balers)



Foreign Trade of Agricultural Machinery Sector in Turkey



Production, Domestic Sales, Exports and Imports of Tractors in Turkey by Years (numbers)

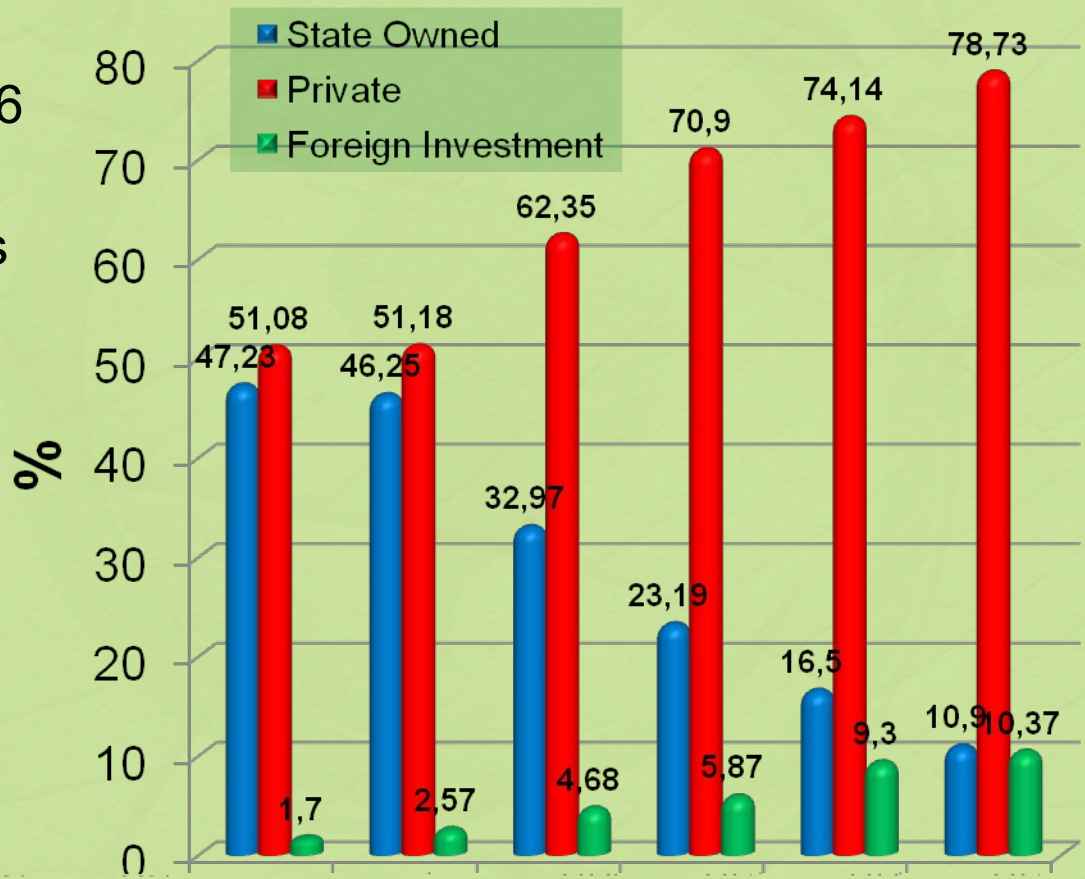


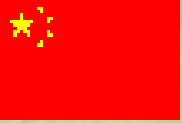
◆ Production ■ Exports ▲ Imports ◆ Domestic Sales



Agricultural Machinery Industry in China

- The number of above-scale enterprises in 2006 is **1735**
- State-owned enterprises and enterprises whose controlling stake was owned by the state is **10.9%**
- Private enterprise is **78.73%**
- Three kinds of foreign-invested enterprises or ventures is **10.37%**





Agricultural Machinery Industry in China

- Since 2003, the annual **growth rate of total output value** of agricultural machinery **and sales income** exceeded **20 percent**.
- Total output value was over 150 billion RMB Yuan in 2007.
- China agricultural machinery industry **still can not totally meet the domestic demand**, especially **most of the large agricultural machinery depends on importing** to meet the agricultural reclamation.





Agricultural Machinery Industry in China

- Current Production Output of Agricultural Machinery Industry in China is as follows;

Name of Products	Units	2006	2007
Big-mid-size tractor	set	207.328	203.128
Small-size tractor	set	1.915.079	2.138.094
Diesel engine	10000 kW	45.217	56.529
Harvesting machinery	set	355.837	250.523
Farm transportation machinery	set	1.844.993	1.893.407
Grain processing machinery	set	1.685.025	1.400.258
Feed processing machinery	set	169.804	251.846
Pump	set	37.524.727	59.469.301



Agricultural Machinery Industry in China

- Current Production Output of Agricultural Machinery Industry in China is as follows;

Name	Economic Indicators
Number of Enterprises	1849
Gross Output Value of Industry (billions Yuan)	151,75
Total Assets (billions Yuan)	79,56
Total Profits (billions Yuan)	7
Employees (thousands)	359,7



Agricultural Machinery Industry in India

- India is the **second largest manufacturer** of tractors in the world.
- In 2005 the Indian tractor industry produced **250,000 units** with a growth of **over 30% over previous year**.
- 30-40 hp tractors primarily used in southern and western regions due to hard soil conditions,
- 21-30 hp tractors finds its market in soft soil conditions and well irrigated northern states .





Agricultural Machinery Industry in India

- Government's initiative on rural roads and better connectivity with major towns and cities,
- Increase in area under irrigation,
- Improved agricultural performance and
- Factors like increment in minimum support price coupled with more emphasis on agricultural financing
- will supposed to keep up the momentum of growth in coming years





Agricultural Machinery Industry in India

- The tractor industry comprises 14 players, including three MNCs and is led by Mahindra & Mahindra Ltd, Tractors & Farm Equipment Ltd and Punjab tractors Ltd.

Company	Products	Tractor sales as a % of total	Market Share in Tractors
Mahindra & Mahindra Ltd	Utility vehicle, LCV, Three wheelers, Tractors	25	44 %
TAFE Ltd.	Tractors & farm machines	80	23 %
International Tractors ltd	Tractors	100	11 %
Escorts	Tractors	NA	14 %
New Holland	Tractors	100	5 %
John Deere	Tractors	100	4 %
Others	Tractors & farm machines	NA	7 %



Agricultural Machinery Industry in Turkey

- In Turkey almost all of the machinery and tractors used in agriculture are produced domestically
- There are 24 companies dealing with manufacturing or foreign trade of agricultural tractors,
- There are 8 agricultural tractor manufacturers in Turkey with 50 - 55 % capacity utilization.
- There are more than 1000 agricultural machinery (excl. Tractors) manufacturers producing more than 130 different types of machines.
- There has been a significant development in the production, use and adoption of machinery in agriculture.



Agricultural Machinery Industry in Turkey

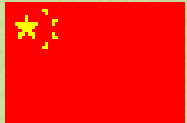
- Major Tractor Producers
- Capacity Utilization is approx. 50 – 55 %

Firms /Trademarks	2007	Share
Hattat-Hattat	1.254	3,3%
Uzel-MF	13.914	36,8%
NH Trakmak-CNH	18.350	48,5%
Alçelik-Tumosan	2.200	5,8%
Başak-Başak	1.218	3,2%
Erkunt-Erkunt	712	1,9%
Yağmur-Yağmur	146	0,4%
Yağmur-Valpadana	8	0,0%
Toplam/ Total	37.802	100,0%



Agricultural Machinery Industry in Turkey





Challenges for the Future

of

China

India

Turkey



Challenges for the Future

- The trend in agriculture is towards sustainable and environment friendly production.
- It is therefore necessary to consider the production and implementation of appropriate machinery, such as;
 - computer aided production technologies,
 - precision farming,
 - zero-tillage techniques,
 - multi-farm use organizations, etc.



Challenges for the Future

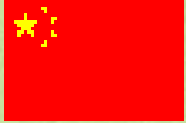
- As in many parts of the world, farmers are also typically conservative and resistant to new technologies and do not accept them unless they are fully convinced of their benefits.
- Technologies are often taken up quickly if they meet a perceived need of farmers and if there are sufficient incentives to encourage their adoption.
- Apart from all financial and technical issues of adoption of Advanced Technologies, farmers must be trained and be concerned about sustainability and environmental issues,



Challenges for the Future

- There is also a significant need for awareness of machinery manufacturers about those Advanced Technologies and their benefits
- Last but not least, in all these three countries discussed, the desperate need for increasing the productivity, quality and food safety will lead to increase in agricultural mechanization level
- As the economic growth continues and sufficient support is provided to farming activities and the income level of farmers rises it must be expected that investments on agricultural mechanization will continue.

Agrievolution 2008
First World Summit on
Agricultural Machinery



**Analysis of Agricultural
Machinery Sector in
China & India & Turkey**
from Agrievolution 2008

Prof.Dr.Kamil Okyay SINDIR

Ege University, Faculty of Agriculture,
Dept.of Agricultural Machinery, Izmir, TURKEY
kamil.sindir@ege.edu.tr

