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Global Market Review: Potential for Horticultural Exports from India

Globalisation is set to have a major impact on world horticultural production and distribution of fruits and vegetables; the world horticulture trade has become fiercely competitive, since last few years. Growing supplies, especially from developing economies, have exerted pressure in all key markets for a range of products. Non-price attributes such as quality, food safety, niche (such as organic and fair trade), environment, and social responsibility are increasingly becoming market-positioning strategies, both for global and domestic markets, in such a competitive environment. In this section, global market for select fruits and vegetables, and floriculture products are reviewed, exports of horticulture products from India are analysed, highlighting prospects and strategies for India in achieving higher export growth.

Fruits and Vegetables

World production of fruits and vegetables stands at over 550 million tonnes, and 910 million tonnes, respectively. In 2007, world trade in fruits was worth USD 60.6 billion, and that of vegetables was worth USD 44.7 billion, growing at a CAGR of 12.36% and 12.68% respectively by value between 2004 and 2007. India is the second largest producer of fruits and vegetables in the world, next only to China. India's production of fruits and vegetables, currently, stands at 64 million tonnes and 126 million tonnes, respectively, making up for around 12% and 14% of world production, in the respective sector. Although India's share in world exports of fruits and vegetables are less than 1.5%, India's exports of fruits and vegetables have grown at a CAGR of 20.61% and 7.21% respectively by value between 2004 and 2007. Over 90% of India's exports in fresh fruits and vegetables mainly go to west Asia and East European markets. With respect to export value, mango is the main fruit crop, and among vegetables, onion occupies the first position. In the recent years, potatoes and green vegetables like okra, bitter gourd, and green chillies are also showing good export potential. Commodity-wise analysis reveals majority of India's fruits and vegetables are exported to neighbouring countries followed by Middle East region. Bangladesh is one of the major trading partners for India for exports of fresh fruits, and onions and potatoes. However, in the recent years, fruits from India such as grapes, mangoes, and vegetables, such as eggplant are increasingly gaining market share in the UK, the Netherlands, France and Germany.

India is the fruit and vegetable basket of the world. India produces 54% of world's mango, 23% banana, 24% cashew nuts, 36% green peas and 10% onion production. India is the largest producer of banana in the world. Maharashtra accounts for 25% of banana production in India, followed by Tamil Nadu (20%), Gujarat (15%), Karnataka (10%) and Andhra Pradesh (10%). Although one-third of the total fruit production in India constitute banana, its share in the world banana exports is negligible, largely due to wastage (around 40%), poor handling and lack of proper post harvest management. However, for banana, besides as a fresh fruit export, potential also lies in exports in processed forms, and as fibre. Some of the processed food products that are increasingly gaining importance in the domestic as well as international markets are banana wafers, banana figs, banana pulp, banana juice and banana flour/powder. Banana wafers and dehydrated ripe banana, popularly known as banana figs manufactured in the small and cottage scale sectors are quite prevalent and popular as snack food. Demand for banana powder and pulp is also increasing. Banana powder and pulp is largely used in the baking and confectionery, and baby food industries.

Given the recent shift in consumerism towards eco-friendly products, banana fibre as a raw material is increasingly gaining importance in the European, Japan and other developed country markets. Banana fibre is being increasingly used in manufacturing fabrics, handicrafts, and in articles such as bags, tablemats, ropes and twines. Good quality banana fibre has strength and lusture like silk, which is used in manufacturing garments, which has significant export potential.

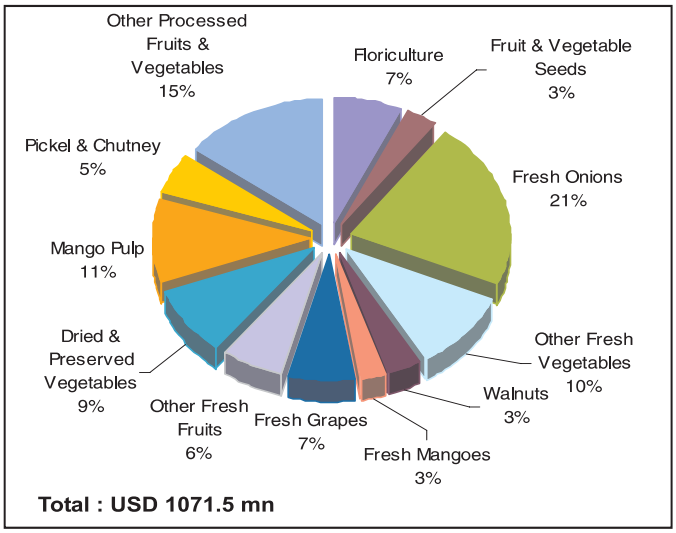
India is the largest producer of mango and home to about 1,000 varieties of mangoes. Mango is also the leading exported fruit from India. Mango pulp is one of the major forms in India's mango exports. The major mango-growing states in India are Andhra Pradesh, Uttar Pradesh, West Bengal, Maharashtra, Tamil Nadu, Gujarat and Karnataka. Andhra Pradesh ranks first in mango production with a share of 20% and highest productivity. Two main clusters of mango pulp are there in the country, which has around 65 processing units. These clusters are Chittoor in the state of Andhra Pradesh and Krishnagiri in the state of Tamil Nadu. Some of the processing units are also there in the states of Maharashtra and Gujarat. India's exports of fresh mangoes, and mango pulp, in 2007-08, stood at USD 31.7 million and USD 126.7 million, registering a growth of 1% and 13% over 2006-07, respectively.

Major vegetables exported from India are potato, onion, tomato, cauliflower, cabbage, bean, eggplants, cucumber and gherkin, frozen peas, garlic and okra. In 2007-08, India's exports of vegetables stood at USD 627 million.

Floriculture

The world production of floriculture is growing at a rate of 10% per year. The global production in terms of production value stood at USD 24.4 billion in 2007. The global exports of floriculture products stood at USD 17 billion in the year 2007. With an annual growth rate of 8 percent, world exports are expected to reach USD 25 billion by 2012. Europe, USA and Japan are the largest producers as well as consumers of floricultural products. China (286,068 ha) and India (126,000 ha) have the majority of the world acreage under cut flowers and plants production, and are also leading producers of floriculture products. India's export in floriculture products stood at USD 84.5 million in 2007-08, growing at a CAGR of 15.79% from 2004 to 2008. Fresh and dried cut flowers dominate floriculture exports from India. Roses, marigold, tuberose, orchids, chrysanthemums and gerberas are the main cut flowers exported from India. More than 50% of the floricultural units are based in Southern India, mainly in Karnataka, Andhra Pradesh and Tamil Nadu. Other producing regions are West Bengal, Maharshtra, and Rajasthan. There are six Ari Export Zones set up for floricultural products in the states of Sikkim, Tamil Nadu, Uttaranchal, Karnataka and Maharashtra. Main export destinations for Indian floricultural products during 2007-08 were USA, Netherlands UK, Germany, and Japan.

Percent Share by Value of Major Horticultural Products in India's Exports (2007-08)



Source: APEDA

India – Prospects and Strategies

Despite being one of the largest producers of fruits and vegetables in the world, India's exports in the sector has been minimal. Main challenges faced by this sector in exporting are : low productivity compared to global standards, prevalence of low level of pre-harvest and post-harvest technologies and management system, international quality standards and existence of distortion in the market channels. In order to increase its share in the world trade of agricultural products, India needs to augment its food processing industry at a mega scale. This requires further increase in production by diversification, efficiency gains through pre and post-harvest management and increasing per hectare productivity. Some of the strategies may be:

- Strengthening the cold chain system including insulated refrigerated transportation from place of production to the destination of exports by way of public-private partnership;
- Adoption of advanced technologies in production system and post-harvest management;
- Enhancing farmers' awareness and involvement in maintaining quality standards, and matching with international standards by way of overhauling the current system of developing, monitoring and controlling the quality and safety of fresh fruits and vegetables that are meant for export markets;
- Research institutions should develop appropriate storage protocols to suit Indian fruits and vegetables, and setting up of economically viable minimum storage facilities with private sector involvement;

- Developing appropriate technology for transportation through ships to increase cost competitiveness;
- Development of inter-modal transportation system with neighbouring countries, with complementing roles between road transport and railways;
- Adoption of hi-tech packaging for exports of some delicate fruits, like litchi;
- Developing and creating infrastructure conducive to transportation of delicate fresh fruits. This calls for the need for use of refrigerated railway wagons, which would reduce not only the transit time, but also preserve the quality of the fruits in transit;
- Creating necessary infrastructure for pre-cooling at farm level, and domestic transfers;
- Research and Development, especially, with regard to development of new production varieties, identification of new applications / usage of fruits and vegetables to gain consumer acceptance in overseas markets, and innovation in supply chain management, for sustainable exports;
- Attracting FDI from Asian countries like Japan, Republic of Korea and Singapore, for creation of cold chain infrastructure and quality / testing facilities in the farmyard, for development of logistics, and especially for creation of bulk freezing infrastructure for fresh fruits and vegetables;
- Improvement in domestic market channels to increase efficiency in the process of market transactions and help maintain quality. Joint efforts by growers, wholesalers, exporters and processors would help improving efficiency in market channels and reduce the cost substantially;
- Coordinated approach at institutional level among various agencies involved in exports in the sector to avoid overlap and resolve marketing issues;
- Research institutions could adopt a region for development and undertake R&D, that is region specific;
- Involvement of growers in export promotion;
- Development of region specific export facilitation centers considering the concentration of production of various fruits and vegetables. The centers should have product specific Controlled Atmosphere / Modified Atmosphere chambers, quality management centers, testing and certification laboratories, electronic sorting and grading lines, Vapour Heat Treatment facilities, and information kiosks advising exporters regarding quality / certification guidelines and market information;
- Strengthening the role of Agri Export Zones (AEZ) in tandem with market requirements especially to give specific thrust on the quality and supply chain requirements of the target markets.

Some of the potential fruits identified for increasing the exports to Asian markets include apples to UAE, Saudi Arabia, Singapore, Kuwait, Bahrain, China, Indonesia, and Philippines; oranges to UAE, Saudi Arabia, Singapore, Kuwait, Bahrain, Qatar, Japan, Republic of Korea, Indonesia and Philippines; bananas to UAE, Saudi Arabia, Singapore, Japan, Republic of Korea and China; watermelons to UAE, Kuwait, Bahrain and Qatar; grapes to Saudi Arabia, Singapore, Kuwait, China, Indonesia and Philippines; mandarins to Saudi Arabia, Indonesia and Philippines; pineapples to Japan and Republic of Korea; and mangoes and guavas to Japan and Singapore.

Potential vegetables for exporting to Asian markets include garlic to Saudi Arabia, Singapore, Pakistan, Indonesia and Republic of Korea; cauliflower to Saudi Arabia, Singapore, Kuwait, Oman; tomatoes to Saudi Arabia, Singapore, Qatar, Kuwait, Oman and Lebanon; potatoes to Saudi Arabia, Singapore, Kuwait, Pakistan, Oman and Indonesia; cucumbers to Qatar, Oman, Kuwait, and Lebanon; peas to Pakistan; mushrooms to Japan and Hong Kong; onions to Japan, Hong Kong and Republic of Korea; and egg plants to Lebanon.

Reference:

- National Horticultural Board
- APEDA

Global Wheat Market Summary and Outlook

In the recent weeks, international prices for wheat increased considerably, influenced much by the fluctuating US Dollars, recovery in oil prices and gains in other agricultural commodity markets. In this context, the international wheat prices are projected to strengthen further, according to FAO's forecast.

World wheat market at a glance

	2007-08	2008-09 (estim.)	2009-10 (f'cast)	Change 2009-10 over 2008-9
	million tonnes			%
WORLD BALANCE				
Production	610.3	684.6	655.8	-4.2
Trade	112.6	123.8	114.0	-7.9
Total utilization	618.2	644.7	655.0	1.6
Food	447.0	451.8	456.4	1.0
Feed	102.1	120.3	126.5	5.1
Other uses	69.1	72.7	72.1	-0.8
Ending stocks	151.6	191.3	192.4	0.5
SUPPLY AND DEMAND INDICATORS				
Per caput food consumption				
World (kg/yr)	67.4	67.3	67.1	-0.2
LIFDC (kg/yr)	54.7	54.7	54.8	0.1
World stock-to-use ration (%)	23.5	29.2	29.8	
Major exporters' stock-to-disappearance ratio (%)	10.7	17.6	17.1	
	2007	2008	2009	Change: Jan-May 09 over Jan-May 08 %
Wheat price index (2002-2004 = 100)	179	236	161	-45

Source: FAO, 2009

Production

FAO's latest forecast of global wheat production in 2009 stands at 656 million tonnes, around 4% less than the previous year's record. The bulk of the decrease is expected among the world's top producing countries, in particular, the European Union, the Russia, and the USA. However, increase in production is projected in Iran, Argentina and Syria. While the production by these countries will be important at the national/regional level, they are unlikely to offset the decline at the global level. Output in China is forecast at 111 million tonnes, marginally below last year's level. In India, the wheat crop is expected to be similar to the 2008 level at about 78 million tonnes. Pakistan is one of the major wheat producing countries in this region, where output is forecast to register a significant increase this year, rising by around 9% to 24 million tonnes. Iran's wheat production is projected to rise by around 40%, in 2009.

Wheat production: leading producers (2008 – 2009)

Countries	2008 (estim.)	2009 (f'cast)	Change 2009 over 2008 %
	million tonnes		
European Union	150.0	138.6	-8
China	112.5	111.0	-1
India	78.4	77.6	-1
USA	68.0	55.1	-19
Russia	63.8	55.0	-14
Canada	28.6	25.9	-9
Pakistan	21.8	23.8	9
Ukraine	25.9	19.1	-26
Australia	21.4	22.0	3
Turkey	17.8	20.0	12
Kazakhstan	12.5	14.0	12
Iran	9.8	13.5	38
Argentina	8.3	9.6	16
Egypt	8.0	7.8	-2
Syria	2.1	4.0	92
Others	55.8	58.8	5
World	684.6	655.8	-4

Source: FAO 2009

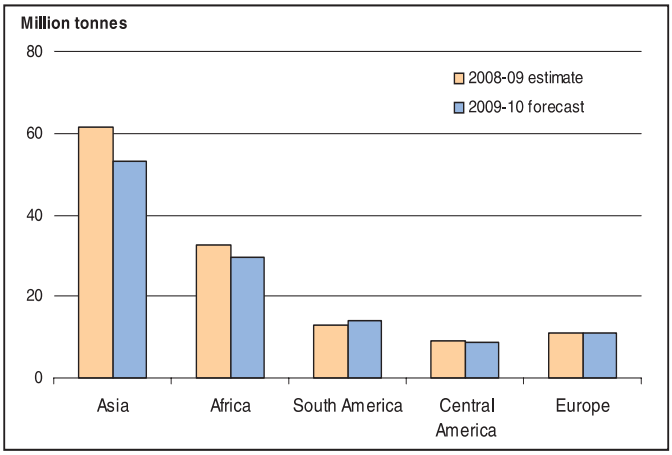
Trade

FAO's current forecast for wheat trade in 2009-10 stands at 114 million tonnes, about 8%, or 10 million tonnes, less than the estimated record volume of 2008-09. Most of the anticipated decline is projected in the developing countries, especially those located in Asia and North Africa. Wheat imports by the developing countries, in 2009-10 is projected at 90 million tonnes, which would be the second highest on record, although 9 million tonnes less than the 2008-09 levels. This anticipated increase in imports in the developing countries in 2009-10 do not have a bearing over the projected decline in production in 2009, mainly because most of the decrease in world wheat production in 2009 is expected in wheat-exporting countries, while many importing countries are forecast to have an increase in wheat production.

Total wheat imports in Asia are expected to decrease by nearly 8 million tonnes, (13%). The bulk of the decline is expected in Iran where, wheatproduction is forecast to increase sharply from last year's level. Higher production is also likely to cut imports significantly in Pakistan and Turkey. Moreover, China and India are likely to remain net wheat exporters given the prospect for near-record production in both countries in addition to large carry-over stocks from the current season. Total imports in Africa are projected to decline largely due to less import demand in

Algeria and Morocco. However, deliveries to Egypt, the world's largest wheat importer, are forecast to increase further, to 8 million tonnes, because of rising demand and a marginal decline in production. Wheat imports by the countries in Latin America and the Caribbean are forecast to either match or increase marginally above the 2008-09 levels.

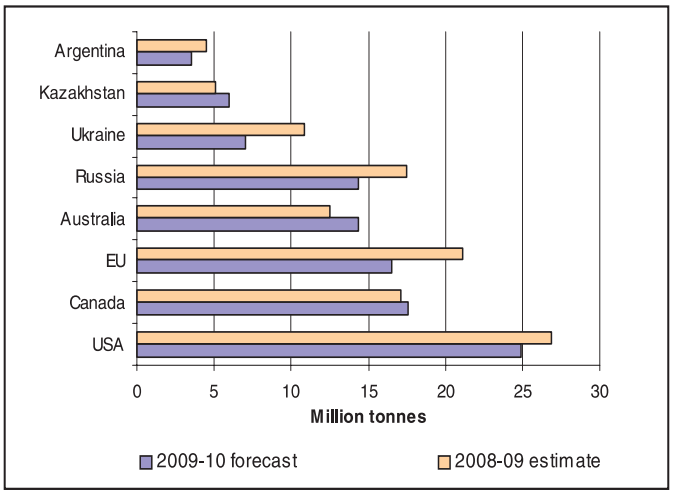
Wheat imports by region



Source: FAO 2009

Given the forecast for decrease in world wheat trade in 2009-10, competition among exporters for international market share is set to intensify. Among the major exporters, only Australia and Canada are forecast to export more wheat into world markets, while shipments from Argentina, the European Union and the USA are likely to decline. Among the CIS countries, shipments from Russia and Ukraine are forecast to decrease significantly after record sales in 2008-09.

Wheat exporters



Source: FAO 2009

Consumption

FAO's current forecast for global wheat consumption in 2009-10 is estimated at 655 million tonnes, an increase by 1.6% from the level of consumption in 2008-09 and over 2% above the long-term (ten-year) trend. While consumption of wheat as food is expected to largely keep pace with world population growth, the increase in total consumption since 2007-08 is driven by an increase in its utilization as animal feed and industrial use (ethanol production), especially in the European Union.

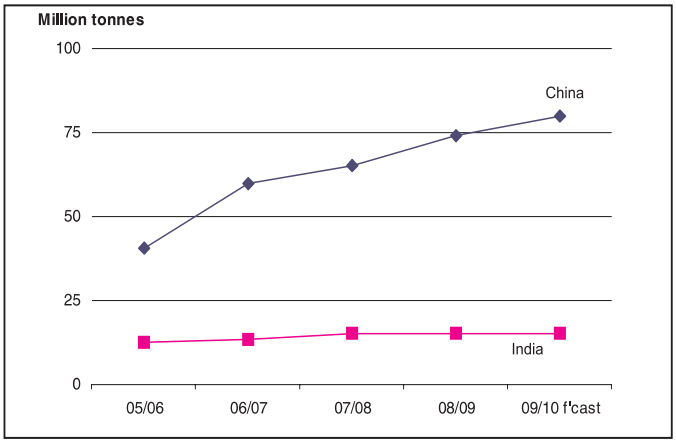
Consumption of wheat as food is forecast to increase marginally by 1% to 456 million tonnes in 2009-10 compared to 2008-09. In the developing countries, total wheat used for food is forecast to reach 323 million tonnes indicating a marginal decline, from 59.7 kg in 2008-09 to 59.4 kg in 2009-10, in average per caput intake.

World feed use of wheat is forecast to increase by 5% to 127 million tonnes in 2009-10, compared to 2008-09, primarily due to improvement in the wheat availabilities in the European Union. About 40% of its Member States' domestic production is likely to be used for feed in 2009-10, an increase by 7% from 2008-09, buoyed by large supplies and high prices of soy meal. However, in other developed countries marginal contractions in feed use of wheat is projected, particularly in USA.

Stocks

By the close of the crop seasons in 2010, the world wheat inventories are forecast to reach 192 million tonnes, a marginal increase from the opening level. The world wheat stocks-to-use ratio is forecast to reach 29.8%, slightly higher than both the 2008-09 season and the five-year average (2002-03 - 2007-08). The largest absolute increase in wheat stocks is forecast in China, where ending inventories may reach 79 million tonnes, 6 million tonnes more than the opening level, and the highest since 2002. Inventories in India, another major producer and stockholder, is forecast to remain unchanged at a five-year high of 17.8 million tonnes. According to FAO, India's inventories would remain large given the expectation of another bumper crop this year and limited export opportunities.

Wheat stocks in China and India



Source: FAO 2009

Reference:

➢ FAO

Pulses market in the EU

On a global level, the European Union (EU) is a small to medium-sized consumer of pulses. The product category (pulses) in the EU comprise of:

- Peas
- Chickpeas
- Urad and mung beans
- Adzuki (small red) beans
- Kidney beans
- Other Vigna and Phaseolus beans
- Lentils
- Broad and horse beans
- Other leguminous vegetables

Consumption

According to FAOSTAT data, in 2004[1] , leading pulse-consuming country in the EU is Italy and Spain. Together the two countries accounted for 60% of total pulse consumption in the EU during 2004. Other main consumers of pulses in the EU are France, Poland and Romania. France is the only country, which has been showing significant growth in pulse consumption. In most other countries consumption of pulses decreased considerably over the past few years. About 80% of human pulse consumption is accounted for by the five Mediterranean countries: Italy, Spain, France, Greece and Portugal.

Production

According to FAOSTAT, the total EU production of pulses amounted to 3.3 million tonnes in 2007, which is 5.3% of world production. Between 2003 and 2007, EU production decreased by 10% annually on average, although peas and chickpeas showed the strongest decreases (of 15% and 11% annually, respectively). The largest producer of pulses in the EU is France. The main part (47%) of EU's pulse production consists of dry peas, which are in turn mainly produced by France (42%). Other major pulses produced in the EU, according to their production quantities, are broad and horse beans (19%) and lupines (4.5%). The leading producer of broad and horse beans is France (accounting for 39% of total EU production) followed by the UK (26%). The largest producers of lentils in the EU are France and Spain. Less cultivated pulse species are chickpeas and lentils. Spain and France together accounted for 83% of lentils production in the EU in 2007. Chickpeas and vetches are produced almost solely in Spain and in a few Mediterranean countries. Lupins are mostly produced in Germany, Poland and France; together these countries accounted for 85% of the total EU production in 2007.

Market Segmentation

The market for pulses can be divided into three segments: human consumption (processed or unprocessed), animal feed, and sowing. Globally, the largest share of consumption is for human consumption and a much smaller share of consumption is for animal feed, and a negligible share for sowing. In the EU the trend is different, where the pulses are mainly used for animal feed. In some cases, such as for peas and lupins, around 90% and 100% of consumption is used as animal feed, respectively.

Pulses for human consumption are mainly used for consumer packing for the retail trade. Other uses of pulses are in the processed form, such as bread spreads and convenience foods. Beans are often sold in cans and used in the 'multicultural' cuisine products, and lentils in Indian curries. Peas are canned, split or sold as whole dry peas. They are also used to produce products such as protein, flour, starch, and fibre. These products are then used in baked goods, baking mixes, soup mixes, breakfast cereals, processed meats, health foods, pastas and purees.

Trade

In 2007, imports of pulses by EU amounted to EUR 805 million or 1.6 million tonnes. Between 2003 and 2007, imports increased by 4.1%, annually on an average, in terms of value, which was mainly due to strong increase in imports by the UK. However, the EU imports decreased by 4.4%, annually on an average, in terms of volume indicating price increase for pulses, which occurred between 2005 and 2007. The UK, Italy and Spain were the leading importers of pulses, accounting for more than half of total imports of pulses in the EU, in 2007. Between 2003 and 2007, imports by the UK strongly increased (by 16% annually in terms of value, and 6.4% in terms of volume), while imports by Italy and Spain decreased, especially in terms of volume.

Imports of pulses by EU member countries 2003-2007, EUR million / 1,000 tonnes

	2003		2005		2007		Average annual % change in volume
	Value	Volume	Value	Volume	Value	Volume	
Total EU, of which	685	1,984	828	3,001	805	1,658	4.1
Intra-EU	228	884	228	842	249	562	2.2
Extra-EU ex DC*	235	619	326	1,446	252	592	1.8
DC*	222	480	274	613	304	505	8.2

**DC – Developing country*

Source: CBI, the Netherlands

Much of the pulses demand for animal feed in the EU are met through domestic production. The balance is imported from countries, such as Canada, China and USA. Imports of pulses from developing countries in the EU are mainly used for human consumption. Pulses imports from developing countries increased by 8.2% annually on an average between 2003 and 2007. The most important product group imported from developing countries is kidney beans. Spain (22%) and Italy (21%) are the main importers of pulses from developing countries. They are also the main consumers of pulses. The UK is the third largest importer of pulses from developing countries, accounting for 12% of total EU imports from developing countries.

[1] Latest available data from FAOSTAT

Imports by origin and leading suppliers to the EU (2003 - 2007), share and average annual growth in % of value

	Origin	Leading suppliers in 2007 (share in %)	Share	Average annual % change
Pulses total	Intra-EU	Netherlands (9.0), France (6.7), Germany (2.3), Hungary (2.3), UK (2.0)	31%	2.2%
	Extra-EU ex. DC*	Canada (21), USA (7.7), Australia (0.9), Russia (0.5), New Zealand (0.5)	31%	1.8%
	DC*	China (11), Argentina (7.5), Mexico (5.2), Turkey (4.2), India (1.5), Ethiopia (1.1), Ukraine (1.0), Peru (0.9), Egypt (0.7), Kyrghistan (0.6)	38%	8.2%

**DC – Developing country*
Source: CBI, the Netherlands

In 2007, imports of pulses in the EU consisted mainly of kidney beans (38%), peas (20%), chickpeas (18%), and lentils (12%). Chickpeas showed largest increase in imports during the period 2003-2007, on an average annual growth rate of 19%.

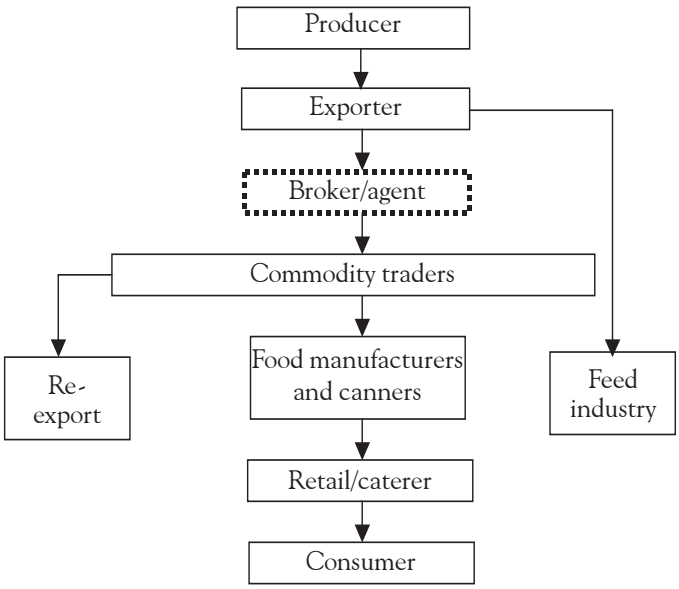
The leading suppliers of kidney beans to the EU in 2007 were Canada (23%), China (21%), and Argentina (18%). Between 2003 and 2007 supplies from these countries increased by 3.4%, 8.3%, and 6.5% annually, respectively.

Pulses exported by the EU, in terms of both volume and value, are peas (38%), broad and horse beans (22%) and kidney beans (20%). France is the leading exporter of peas (51%) and broad and horse beans (57%), and the Netherlands is the leading exporter of kidney beans (32%). France and the UK almost exclusively (87%) account for total broad and horse beans exports by the EU.

Trade Channels

The European pulses market is a concentrated and competitive market, in which a small number of canneries, food companies and packaging companies hold the major share of the market. Extra-EU suppliers of pulses for the animal feed industry mostly export directly to the animal feed industry, without interference from importer/wholesalers. Extra-EU suppliers of pulses for human consumption export their pulses to commodity traders in the EU who repack the pulses to be re-exported or distributed further to food manufacturers, canners and wholesalers, who eventually sell the processed pulses to the retailers.

The trade structure for pulses



Source: CBI, The Netherlands

Outlook

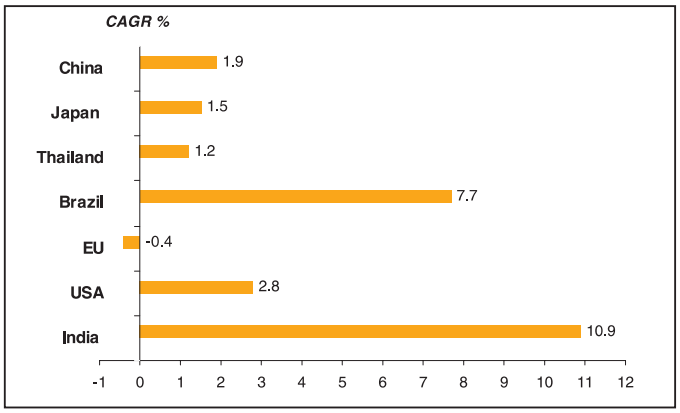
Demand for pulses in the human food market in the EU is expected to rise modestly, due to the increased acceptance of pulses as a healthy food. It may be mentioned that there has been a shift of consumer preference from animal protein to plant protein, largely due to concerns over the diseases in animal protein sources. Besides, the EU has a growing population of people who belong to the Middle East, northern Africa and the Indian sub-continent, where pulses are consumed as a staple food. In addition, these ethnic cuisines are increasingly being adopted by the general population in Europe, which show more interest in exotic dishes. Pulses are primarily appreciated by consumers for their low price, ease of storage and longer shelf life. Flour made from pulses is increasingly being used in baking to increase the protein, fibre, mineral and vitamin content. Opportunity also exists for suppliers of pulses to the EU in the organic market.

Source : CBI, The Netherlands.

Indian Poultry Industry – An Overview

In the recent years, Indian poultry industry is growing at an accelerated rate of 12 – 15% every year. India's current egg production is about 51 billion eggs and poultry meat production stands at 2.25 million metric tons. Poultry meat has been the fastest growing animal protein segment in India, growing at a CAGR of 11% during 2000 to 2006, a better growth in comparison to beef (growing at CAGR 5%), and seafood (CAGR 2.8%). The per capita consumption of poultry meat in India has been growing at a CAGR of 10% in the last 15 years, which is, however, lowest compared to other leading producing countries.

Comparative Growth of Poultry Meat in Leading Producer Countries (2000-06)



Source: USDA 2007

Industry Structure

The size of the poultry farms in India varies from 500-50,000 birds per farm. Investment excluding land is around USD 1.25 to 1.75 per square foot, and the area required is around 1 square foot per bird. Contract farming is prevalent in southern India, with farmers being provided with Day Old Chicks (DOCs), feed, medicines and a growing fee. Pure lines are largely imported. Independent operators in the unorganized sector purchase their DOCs from local hatcheries and integrators.

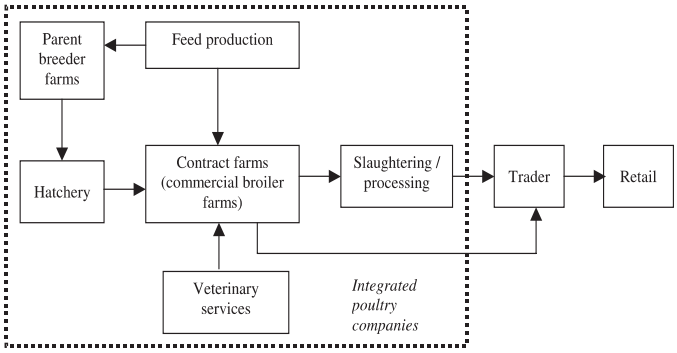
Feed constitutes approximately 70% of the cost of production for poultry. Corn and soybean constitute the major feed ingredients. Around 50% of the corn produced in the country is used as animal feed, and around 40% soybean produced is consumed by the poultry industry. Most of the poultry integrators have their own captive feed facilities that produce mashed and pallet feed. The Competitive Feed Conversion Ratios (FCRs) in the country are around 1.8-2.0, which is at par with FCRs of its counterparts.

Parent breeder farms are largely owned by companies. Both natural-mating and artificial insemination are used. These farms have a high cost of investment compared to commercial poultry farms, which is around USD 3.75 per squarefoot. The area needed for breeding farms is estimated at around 3 square feet per bird. The hatching rate is around 80-90%. The cost of DOCs in poultry production is around 20% of total cost of production.

There are number of small poultry dressing plants in the country producing dressed chickens. In addition, there are five modern integrated poultry processing plants producing dressed chicken, chicken cut parts and other chicken products. These plants also manufacture egg powder and frozen egg-yolk for export.

In the recent years, integrated form of organized production is gaining importance in the industry, mainly in the Southern and Western region of the country. The integrated companies control all aspects in the supply chains. The control can be direct, where the integrator controls all aspects, or indirect, by contracting to third parties for some aspects of production with an overall supervision and support.

Poultry Broiler Supply Chain in India



Source: Rabobank, 2007

Biosecurity measures are of most important concern with the industry. With the recent outbreaks of avian influenza (2004, 2006, 2007, and 2008), the importance of health in the industry has gained increasing significance. Accordingly, the integrators have been providing necessary veterinary support to the contract breeders. However, the industry is considerably faced by shortage of vaccines and is largely import dependant.

The retail segment is largely unorganized, with wet markets accounting for nearly 95% of the sales. Only about 2% is sold through supermarkets. Another 3% is sold to price-conscious institutional markets. Around 70% of the processed poultry meat market is constituted by chilled or fresh products and the rest is mainly frozen products. Value added products accounts for only 0.5% of the total market.

Tamil Nadu accounts for maximum egg production. In Andhra Pradesh, Hyderabad has the maximum number of poultry and hatcheries, besides, Vishakhapatnam and Chittoor. Karnataka, Tamil Nadu, Maharashtra, Gujarat, Madhya Pradesh, Orissa and North Eastern States are other major egg producers in the country.

Domestic market

The per capita consumption of poultry meat in India has been growing at a CAGR of 10% in the last 15 years, which is, however, lowest compared to other leading producing countries. Nonetheless, unlike beef and pork, poultry products are the largest

consumed animal protein in the country as it is not associated with any religious belief and is available throughout India.

Indian domestic market is dominated by fresh poultry meat. There is a significant price difference between processed and wet market. Processed poultry meat commands a 20-30% premium over wet market products. The processed poultry meat market (chilled/ frozen, cut meat) is limited, and largely confined to institutional sales. However, in the recent years, due to urbanization, consumption of processed poultry meat is increasing. Sales of processed poultry meat are currently around 30,000 tonnes with a market size of USD 50 million. Annual growth is estimated at 15-20%.

Exports

Only 11% of the total world production is traded globally. The Europe, USA, Malaysia and China are the leading exporters of poultry products. India's exports of poultry products amounted to USD 101.9 million in the year 2007. Birds and eggs in shell, fresh or cooked, constitute the largest segment, with a share of about 64%, followed by processed egg products, which is about 35% of India's total poultry exports. The major destinations for Indian poultry products in the year 2007-08 were Kuwait, Oman, Afghanistan, Japan, Germany, Denmark and Saudi Arabia.

Export of poultry products USD million

Countries	2004	2005	2006	2007
Europe	2227.0	2418.3	2685.4	3413.2
USA	266.0	320.5	345.3	427.9
Malaysia	124.6	160.8	160.3	209.2
China	100.6	112.5	107.4	126.1
India	58.0	71.1	69.2	101.9
Canada	79.5	75.0	77.7	83.1
Brazil	28.4	38.4	37.4	64.5
Thailand	6.1	9.6	13.1	28.9

Source: UN Comtrade 2009; India Source: DGCIS

Challenges

Some of the challenges faced by the Indian poultry industry are mostly along the supply chain. Shortage of feed is one of the most important challenges. Corn remains to be a small crop in India compared to other cereal crops, often causing shortage of poultry feed. Although India is reasonably a competitive producer of corn and soybeans, the relatively higher storage and distribution cost makes poultry feed expensive, at the hands of end users.

In the absence of effective surveillance and quarantine system, India has been subject to frequent outbreaks of avian flu in the recent years, which have been denting the image of the Indian poultry sector at a global level, and could hinder the potential growth of the industry in the long run.

India has a higher freight and handling charges. This coupled with frequent shortages in supply have put Indian poultry exporters at a competitive disadvantage compared to their counterparts in other countries.

Very few Indian poultry companies have modern processing plants, and those who have are under-utilised. The present capacity utilization rate is around 50-70%. Investments in the sector are constrained by market and policy uncertainty, poor power and transport infrastructure.

Outlook

India's egg production is forecast to grow at a CAGR of 12.38% to 75.6 billion eggs, and poultry meat production is set to grow at a CAGR of 23.36% to 5.21 million metric tons by 2012. India is an internationally competitive producer of poultry meat. Production costs in India, although higher than in Brazil, compares favourably with those in the USA and in the other Asian countries. The availability of feed at internationally competitive prices remains the key for India to become a competitive producer of poultry meat.

India's rapidly growing poultry industry offers investment opportunities for foreign players in number of activities such as breeding, medicines, feed, equipment and processing. With adequate policy interventions, and safety measures on health issues and disease preventions, India can emerge as one of the leaders in the poultry trade in the world in the years to come.

Reference:

- Rabobank
- FAO
- USDA

The MPS-Code in Flower Trade

The international flower business is governed by several *Codes of Conducts*. One of which is the *Milieu Programma Sierteelt* (MPS or Floriculture Environment Project). MPS was established by the Dutch floricultural sector with support from the flower auction houses and several flower trading organizations. MPS offers certification services for several schemes. MPS currently has 68 members, and its organization structure consists of the Board of Directors, Advisory Council and Council of Interested Parties.

The schemes/labels under MPS are broadly classified into two categories:

- Label for growers
- Label for traders

LABEL FOR GROWERS

The labels especially developed for growers include:

MPS- A, B and C - These are environmental registration certificates. The qualifications MPS-A, B and C are awarded to MPS participants who record their usage of crop protection agents, mainly fertilisers, energy, and waste generated and their treatment for over four-week periods. At the end of the period, participants send the recorded data to MPS, to be processed using calculation rules. A maximum number of achievable points have been set for each theme. Points may be allocated differently for non-EU countries due to the addition of the parameter water use. Participants are awarded a qualification four times a year, namely MPS-A, B or C based on the total number of points achieved. The qualification MPS-A stands for most environmental-friendly cultivation, while the qualification participant (D) is awarded when a participant has registered for three successive periods and scored less than 10 points on the four themes.

An increasing number of European buyers are making MPS registration a minimum requirement for their suppliers, particularly, the retail channels. It is also encouraged by the Dutch Flower Auctions Association, the VBN, which also shares the costs.

The participants pay a fixed fee for their participation in MPS, with the following broad understanding:

- The plant and flower auctions pay a fee to MPS for their European based member growers.
- The participants (exporters) pay a fee applicable to their country. This amount may vary from country to country and depends on the number of participants.

In addition, each individual grower pays a fee linked to the size of the farm.

MPS-Quality

MPS-Quality is a chain-wide quality assurance scheme for the whole floriculture sector. Participation in the MPS-Quality Scheme begins by producing descriptions of a number of business processes such as purchasing, harvesting, sorting and packaging, sales, dealing with complaints, customer satisfaction and shelf life tests. These processes are documented and tested against the MPS-Quality requirements. The descriptions are adhered to for at least three months, during which the descriptions are practiced and improvements are made wherever necessary. On satisfactory system approach an audit is conducted and certificate is issued.

MPS-QualiTree

MPS-QualiTree is a chain-wide quality assurance system intended for anyone working in the nursery stock industry. The certification is suitable for both production and sales organisations and also for co-operatives and other collaborating organisations in the nursery stock industry. The certification procedure is similar to that of MPS-Quality Scheme.

MPS-GAP

The MPS-GAP certification scheme is based on the criteria formulated by the European retail organisation EUREP for safe, sustainably cultivated, high-quality and traceable products. These criteria are expressed in Good Agricultural Practice (GAP). MPS-GAP is benchmarked with the EUREPGAP flowers and plants scheme. The certification scheme includes requirements, relating to land/plot use, substrate, parental material, waste, storage locations, maintenance of equipment and resources, application, use and stock of crop protection agents, qualifications of employees and advisers, safety/health and hygiene. For MPS-GAP it is important for the growers to keep a daily registration, for which MPS has a registration program in place called 'ACTRES'

MPS Socially Qualified

MPS Socially Qualified (SQ) is a certificate that allows growers to demonstrate that their products are cultivated under good working conditions, which includes requirements on health, safety and terms of employment, and is based on universal human rights, the codes of conduct of local representative organisations, and International Labour Organization (ILO) agreements.

To qualify for MPS-SQ, growers undergo an audit, which requires a number of documents such as:

- List of trained workplace safety officers and workplace first-aid staff and their certificates as proof;
- Report and action plan on risk identification and evaluation;
- Maintenance form for crop protection equipment;
- List of staff members who hold valid spraying licences and copies of those licences;
- MPS registration and an up-to-date stock list of crop protection agents and fertilisers;
- Job descriptions for all staff members.

MPS-Florimark

MPS-Florimark is a certificate that is awarded upon certification for the above modules viz., MPS-A (environmental certification), MPS-GAP, MPS-Quality or MPS-QualiTree, and MPS-SQ. The certification is the highest MPS certification and is awarded to the top companies with premium products.

ISO 9001:2000

ISO is an internationally recognised quality mark, which describes processes and procedures that take place within a company. Areas covered by ISO are:

- A good and workable policy plan with clear objectives;
- Quality checks;
- Qualified staff;
- Internal communications (how does communication take place within the company);
- Description of all processes within the company;
- Continuous checks.

The certification process consists of the following:

Desk audit – A written assessment on the basis of the documents provided by the company on compliance of standards.

Company audit- This is the on-site audit. The availability of the management and the employees and the provision of the information required to carry out the audit is arranged with the company in advance. After the audit a report is provided setting out the findings. Should corrective measures be required following an audit that necessitates a follow-up audit, the follow-up audit is charged separately.

Issuance of Certificate and Reassessment (annual)

Following successful completion of all audits a certificate is issued. The certificate is valid for three years from the date of issue. During this time an annual reassessment is carried out at the company in order to check that the company still complies with the stipulated requirements.

LABELS FOR TRADERS

Florimark TraceCert

A scheme that guarantees the traceability of floriculture products of traders. The certificate comprises basic requirements in the fields of freshness, initial checks, storage, stock management, distribution and traceability of purchased flowers and plants in the trading channel. Florimark TraceCert was developed for wholesalers in response to the requirements of clients regarding traceability. Florimark TraceCert is also ideal for satisfying the traceability requirements of Fair Flowers Fair Plants (FFP). The process of certification is similar to that of MPS-Quality scheme, except that the, production parameters are not considered.

Florimark GTP (Good Trade Practice)

Florimark GTP sets requirements in the areas of freshness, initial checks, storage, stock management, distribution and traceability of purchased flowers and plants in the trading channel, which are similar to the requirements set for Florimark TraceCert, but at a higher levels. Additional requirements also apply in the case of Florimark GTP relating to social aspects, the environment and collaboration in the chain. Parameters considered under the certification include:

- Traceability of the purchased products;
- Specification of quality;
- Distribution;
- Delivery;
- Transport;
- Dealing with complaints;
- Cooperation in the field of purchasing and information exchange;
- Quality and environmental policy;
- Staff policy (training, hygiene and safety).

MPS-Florimark Trade

MPS-Florimark Trade is a certificate that is awarded upon certification for the above modules viz., Florimark TraceCert, Florimark GTP, and ISO 9001:2000.

In addition, MPS also undertakes audits for Ethical Trading Initiative (ETI), a practice specifically set up for traders supplying the British market, which takes into account employment and employment structure, working hours and conditions, wages, no child labour, and no discrimination. ETI is specifically aimed at the trade chains.

Audit

Each year 30% of the MPS participants are audited. There are various types of audit:

- The desk audit – Assessment based on documents on compliance of standards as submitted by the company;
- The company audit – on site audit of companies, which includes the companies needed to be audited as a result of the desk audit;
- The trademark audit - Random audits to check that the participants are using the trademarks correctly;
- The initial audit - Before the first qualification can be awarded (after 13 consecutive periods of registration) all participants undergo an initial audit, which is comparable to the regular company audit.

MPS have an environmental scorecard and also different scoring program such as MPS –Mind (a pesticide indicator), MPS-OEX an Area Efficiency Index, relevant only for heated, and greenhouse cultivation.

Reference:

➢ www.my-mps.com

NEWS FOCUS

UNIDO to aid a new initiative on bamboo for Northeast India

The United Nations Industrial Development Organisation (UNIDO) has tied up a four-year project of USD 2 million, to promote the bamboo industry in the northeast India, including its use in handicraft, construction materials and exports. As part of the project, UNIDO has set up a USD 600,000 trust fund with the government-run North Eastern Council (NEC) with support from the Department of Industrial Policy and Promotion, Government of India.

The project also calls for analysing the prospects for rural livelihoods within the bamboo clusters, as also the pre-processing potential, marketing of produce, product design, packaging and quality control.

The agencies are also developing a five-acre plot along the Guwahati-Shillong highway to demonstrate modern technologies for bamboo processing and train the artisans, as also support small and medium enterprises in the region.

According to Food and Agribusiness Strategic Advisory and Research, a think tank of Rabo Bank, India has 30% of the world's bamboo resources, but contributes only 4% share of the global market. This is mainly because of the low productivity, which is 0.4 tonnes per hectare, compared to several times higher in countries like Japan, China and Malaysia, which contribute about 80% to the world's bamboo market.

Source: Agriculture Today, February 2009

China to have 5% share in world organic food market

China is forecast to become a nation with high organic food consumption while its volume of organic food production and export is projected to increase at a fast rate over the next decade.

At present, the international organic food market is growing annually between 20% and 30%, and China is expected to become the fourth largest consumer of organic food in the world, with organic food expected to occupy between 1 -1.5% of China's entire food market.

Demand for organic food produced by China is projected to reach or exceed 5% of the international organic food market.

It is predicted that both China's organic farmland and its produce will grow annually by between 20–30% over the next decade. Organic farmland will reach between 1,800 mu and 2,300 mu, accounting for between 1-1.5% of China's total agricultural land.

According to China Green Food Development Center, China currently produces and converts around 50 categories of 400-500 varieties of organic products including vegetables, pulses, grains, aquatic product and products gathered from the wild.

Source: www.english.people.com.cn, June 2009

Indian pomegranate goes global

In response to the global needs, Maharashtra's pomegranate growers have begun to adopt traceability norms. The state exports nearly 100 tonnes of pomegranates under the AnarNet traceability system developed by the Agricultural and Processed Food Products Export Development Authority (APEDA).

APEDA has started providing traceability solutions for the export of fresh fruits like grapes and pomegranates to ensure that there are no residues above the prescribed level. The traceability solution helps in product recall and single window clearances.

APEDA started registration of orchards under AnarNet in February 2009 and so far has registered 800 orchards of eight acres each. The registration for this year is likely to continue until July end. The state has a total of 85,000 hectares under pomegranate cultivation, accounting for 70% of the country's total acreage under pomegranate cultivation. The state, on an average, exports 12,800 tonnes of pomegranate annually, mainly to the European and Middle East markets, amounting to 800 container loads.

Source: *www.economictimes.indiatimes.com, June 2009*

The news items and information published herein have been collected from various sources, which are considered to be reliable. While every care has been taken for authenticity of the material published, Exim Bank accepts no responsibility for authenticity or accuracy of such items.

Export-Import Bank of India, Centre One Building, Floor 21, World Trade Centre Complex, Cuffe Parade, Mumbai 400 005. Tel.: 2217 2600 Fax: 2218 2572 E-Mail: cag@eximbankindia.in
Agri Business Group : agrigroup@eximbankindia.in / sumana@eximbankindia.in Website : www.eximbankindia.in

Contact Numbers: Ahmedabad: 26576852, Bangalore: 25585755, Chennai: 25224714, Guwahati: 24622951, Hyderabad: 23307816, Kolkata: 22833419, Mumbai: 22830761, New Delhi: 23326375, Pune: 26458599, Dakar: (00221) 8232849, Dubai: (009714) 3637462, Durban: (2731) 5846118/19, London: (0044) 20-73538830, Singapore: (0065) 653 26464, Washington D.C.: (001) 202-223-3238