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Agri Tech Startups

Agri Tech Startups

Agri technology start-ups are a meaningful solution across the agricultural value chain and can be in the form of a product, a service or an application. These startups comprises technological innovations and has the capabilities to change how food and other agricultural products are grown, harvested, packaged, stored, transported, processed and sold – with an objective of making the farm to table process more efficient, sustainable and safe. With 450 agri tech startups, India is at 5th position in the list of total number of Agri Tech Startups[1].

The Need for Agri Tech Startups in India

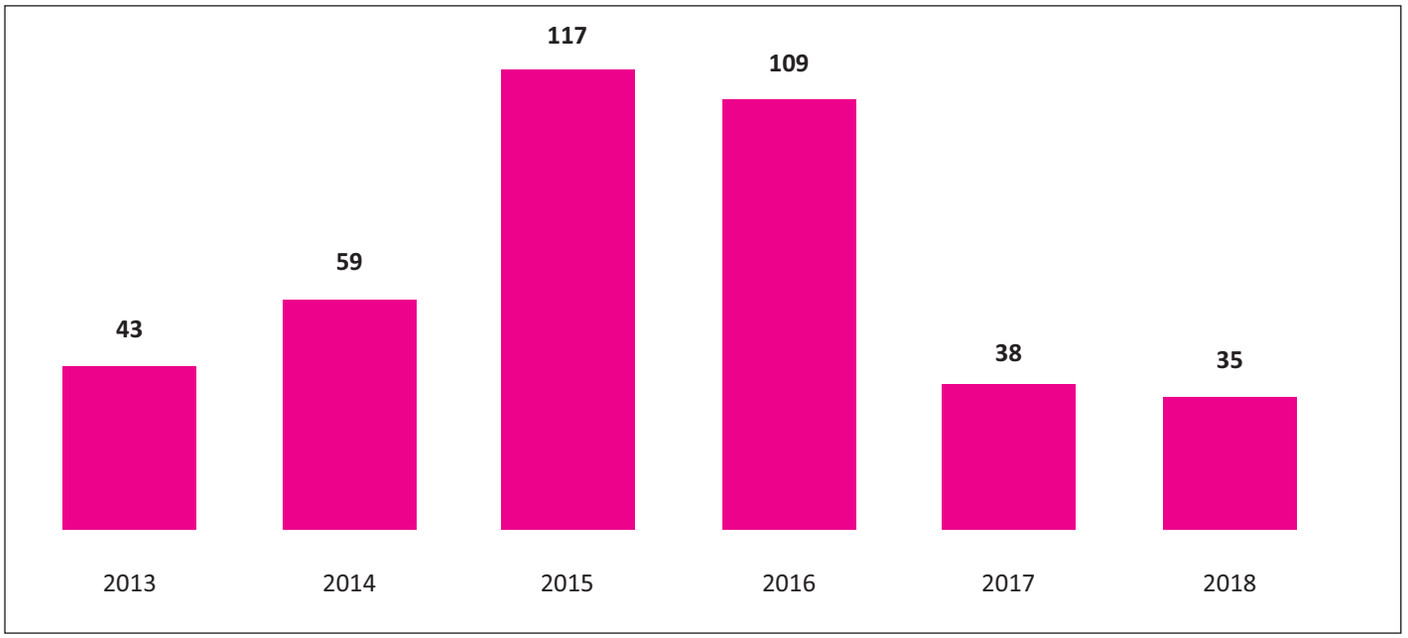
India has the second largest agricultural land in the world and around 70% of the rural households still depend on agriculture for their livelihood. Indian farmers incur around ₹92,651 crore per year in post-harvest losses, due to lack of storage and transportation facilities[2] and mismanagement of resources. The poor agri-logistics results in lowering of farmer's ability to realize the value for their products. Here, the agri tech startups are striving to create supply chain efficiency, storage facilities and providing markets for the farmers, which is helping in reducing post-harvest loss. These startups are also helping in making available quality inputs to the farmers for better output, providing affordable services for small and marginal farmers and are addressing the financing needs of the small farmers.

Recent Developments

Agri tech is foresighted to be the next big space for startups after e-commerce and digital space. Globally, agri tech startups are prevalent in farm management software, online-farm to consumer concepts, sensing, mechanization equipment, novel farming systems, food safety and agricultural biotechnology. In 2016, the global agri tech investments stood at US$ 3.23 billion. Currently, there are 3,103 agri tech startups globally, and of which 450 are in India (2019), growing 25% Y-O-Y[3]. India continues to be among the top six countries globally, with the highest number of deals in agricultural

[1]MANAGE Report
[2]ICAR-CIPHET
[3]NASSCOM

Number of New Agri Tech Startups Started in India (2013-18)



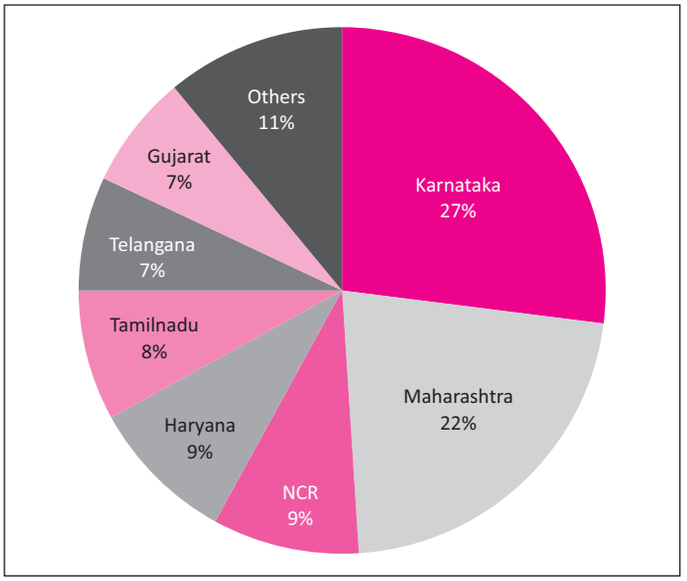
Source: Traxcn Data, NASSCOM

technology. In India, agri tech startups has received US$ 248 million in funding in first six months of 2019 while funding during entire 2018 was US$ 73 million.

Government Initiatives

Congenial policy environment is an important factor in the success of the start-ups. The Government of India and the State governments, in the recent years, have not only shown fair interest on the start-ups in agri tech but also have put in place several policy measures supportive of the start-ups. For instance, launching of 'Agri–Tech' scheme by Government of Maharashtra for digitally tracking agriculture management in the state; Setting up of an Agri tech fund of US$ 2.5 million by the Govt. of Karnataka with an aim to facilitate at least 21 startups in the field. This has also resulted in concentration of agri tech startups in these two states. Maharashtra and Karnataka together account for around 50% of the total agri tech start-ups opened in the past 5 years.

State wise focus of Agri Tech Startups (2013-17)



Source: NASSCOM (2018)

Funding is always an important aspect for the startups. Though there has been increase in investments in the startups due to increasing investor confidence, however, there still is considerable gap. Other challenges faced include lack of digitization in rural areas, farmer participation, and with respect to regulations and

policies, concerning the legal incorporation and registration as a startup. Despite Government of India declaring efforts to hasten the setting up of a startup business, the process is generally described as lengthy and expensive requiring several approvals with high entry barriers. The criteria specified by the Government for start-ups for availing benefits under the schemes often acts as hindrance as many start-ups may not fulfill such criteria.

The Way Ahead

With more and more local farmers accepting the innovative startup solutions, there has been a considerable shift witnessed from B2C to B2B startups. Investor confidence in agri tech startups have been increasing and there has been a rise in investments in these startups. A 300% increase in funding during first half of 2019 is a positive implication showcasing the potential of these startups to bring about the anticipated changes in the agricultural system of the country while contributing to the economy. These startups are also looking at global markets to expand further. Startups dealing with technologies concerning farm data analytics, infrastructure and information platforms, and supply chain management are considered ideal by the investors. AI-based smart solutions, advanced farm analytics, and increased usage of new technologies, such as drones is envisaged to be crucial for the next growth phase of this sector.

References:

- NASSCOM
- ICAR-CIPHET

Export Potential of Potato

Overview

Potato is an integral part of the global food system. It is among the world's most consumed non-grain food commodity. Potato consumption is expanding strongly in developing countries, which account for more than half of the global harvest and the ease of cultivation and high energy content of potato have made it a valuable cash crop for millions of farmers, globally. It is a highly recommended food security crop that can help low-income farmers and vulnerable consumers ride out extreme events in world food supply and demand. It is also used heavily in the food processing units for meeting the demand of packed food and snacks.

Production

Global Scenario

The global production of potatoes in 2017 was estimated at 388.24 million tonnes. China is the largest producer with 25.56 % share in global potato production. China has been consistently the largest producer of potato, followed by India with 12.51% share during 2017. Other major producers of potato in 2017 were Russia (7.6%), Ukraine (5.7%), the US (5.1%), Germany (3%) and Bangladesh (2.6%)[4]. The global productivity of potato is estimated at 20.54 ton/hectare. While some countries like the US, Germany, the Netherlands and Belgium have

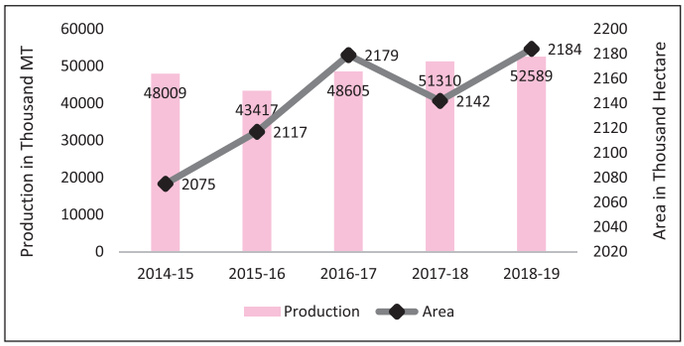
[4]Food and Agriculture Organization(FAO)

productivity over 45 ton/hectare, productivity in India is around 22.3 ton/hectare, little above the world average.

Indian Scenario

The production of potato in India was estimated at 52,589 thousand MT, as per first advanced estimate of 2018-19, which is an increase of 2.49% from the estimated value of 2017-18. The area under production was 2,184 thousand hectares for 2018-19, which registered an absolute increase of 42 thousand hectare as compared to 2017-18. The area under potato cultivation accounted for 21% of total area under production of vegetables[5]. Total potato production witnessed a CAGR of 6.6% from 2015-16 to 2018-19.

Production and Area under Cultivation of Potato

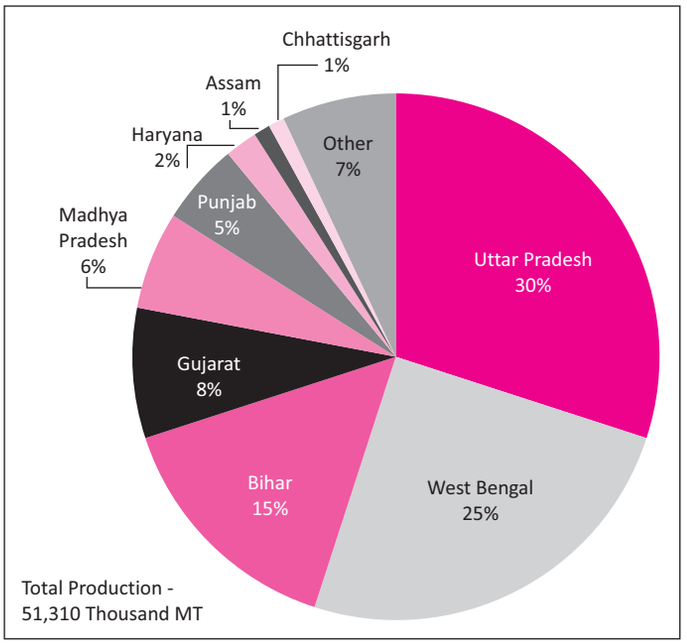


Source: National Horticulture Board

Uttar Pradesh is the largest producer of potato in India. Around 30% of total production of potato was estimated to be produced in Uttar Pradesh in 2017-18. Other major potato producing states include West Bengal (25%), Bihar (15%), Gujarat (8%), Madhya Pradesh (6%), Punjab (5%) and Haryana (2%)[6].

In 2017-18, Haryana had 34.72 thousand hectares of land under cultivation of potato, whereas Assam had 102.87 and Jharkhand had 48.21 thousand hectares, however, production was higher in Haryana as compared to the other two states.

State-Wise Potato Production 2017-18



Source: Ministry of Agriculture, Cooperation and Farmers Welfare

The domestic demand for potato is high in India due to its consumption as vegetable and use as ingredient in the processed food sector. The price of potato is derived from the domestic demand and supply at a particular point of time. The average monthly price of potato during September 2019 was recorded at ₹1205.3 per quintal, witnessing a fall of around ₹350 per quintal year-on-year. The average monthly price varied from ₹975 to ₹1254 during 2019, whereas it ranged between ₹711.9 to ₹1560.8 per quintal in 2018.

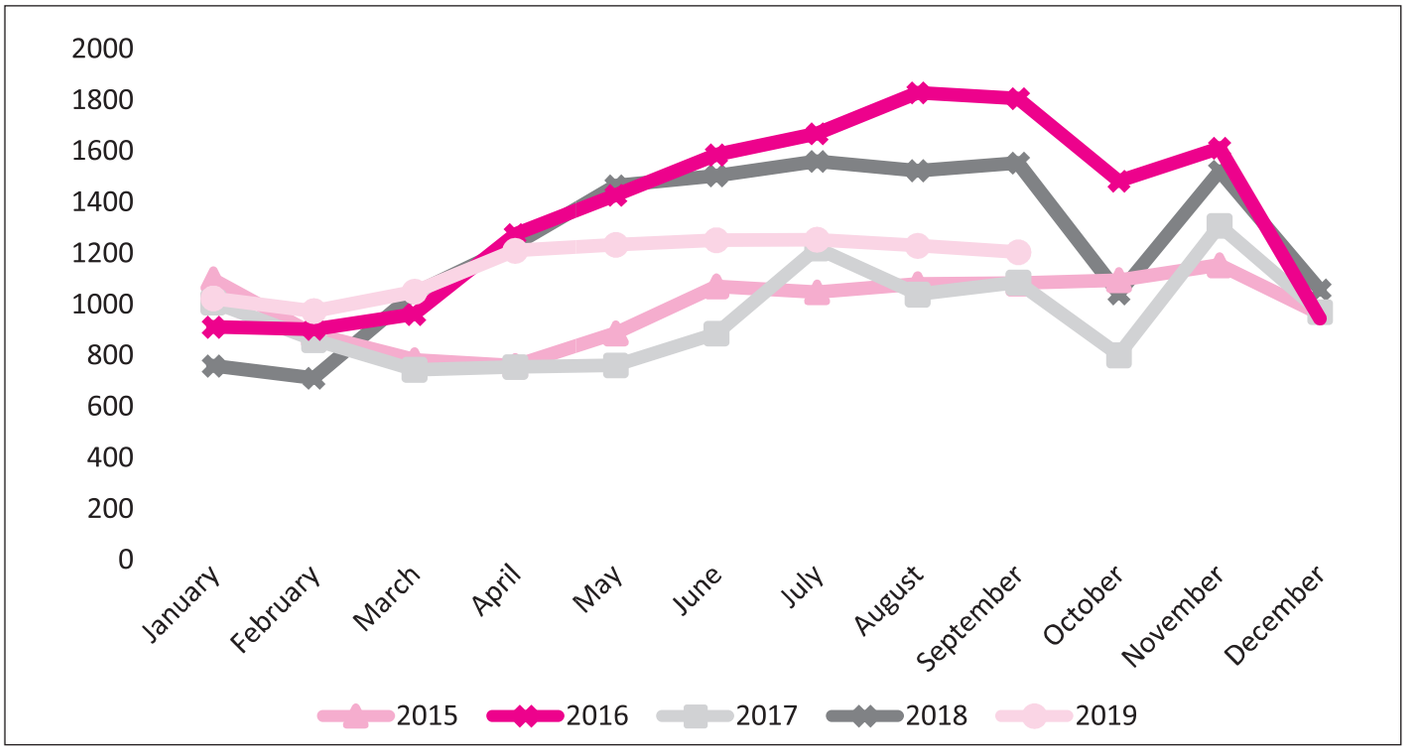
Trade

Global Scenario

The global export of potato was estimated at US$ 3.31 billion in 2018, witnessing a decrease of 2.35% from US$ 3.39 billion in 2017. France was the largest exporter of potato in 2018 with exports

[5]National Horticulture Board
[6]Horticulture Statistics at a Glance 2018

All India Average Monthly Wholesale Price of Potato



Source: Ministry of Agriculture, Cooperation and Farmers Welfare

worth US$ 539.6 million, equating to a 16.3% share in total global exports of potato. Other major exporters of potato include Germany (10.1%), China (7.8%), the Netherlands (7.5%), the US (6.8%) and Canada (6.7%).

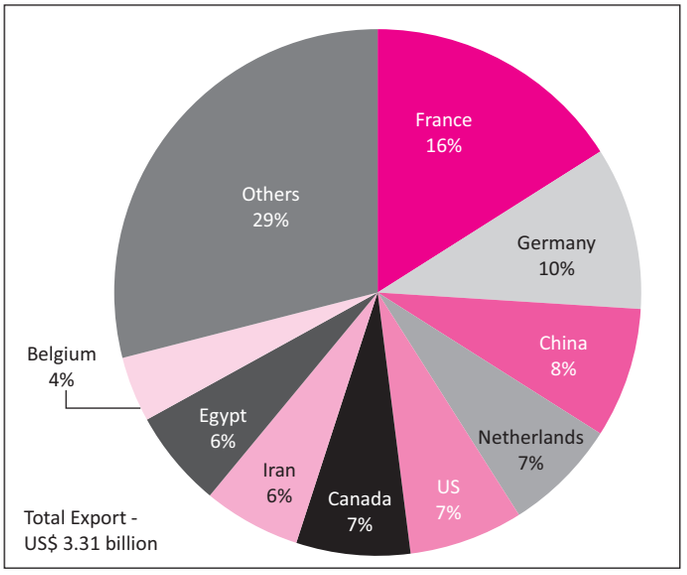
The total global import of potato was estimated at US$ 3.63 billion in 2018. Belgium was the leading importer of potatoes, with an estimated import value of US$ 470.2 million in 2018 and a share of 12.9% in total global imports. Other major importers were the Netherlands (9%), the US (5.9%), Spain (5.9%) and Russia (5.7%).

Indian Scenario

The export of potato from India was estimated at US$ 63.41 million in 2018-19, registering a decline by US$ 5.87 million from 2017-18. Share of India in global potato export was 1.7% during 2018[7]. The exports from India fell despite an increase in the production during 2018-19, due to higher domestic demand and lower international demand.

Nepal was the major export destination for Indian potato, with exports amounting to US$ 36.16

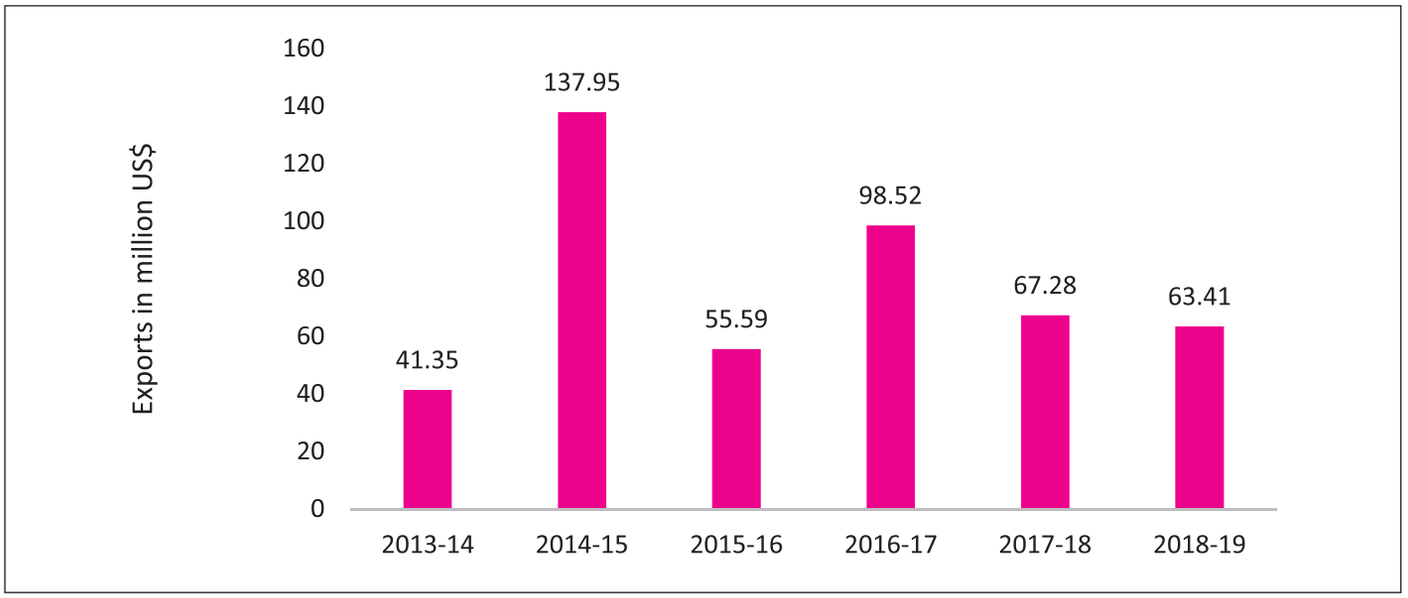
Major Potato Exporting Countries (2018)



Source: ITC Trade Map

[7]ITC Trade Map

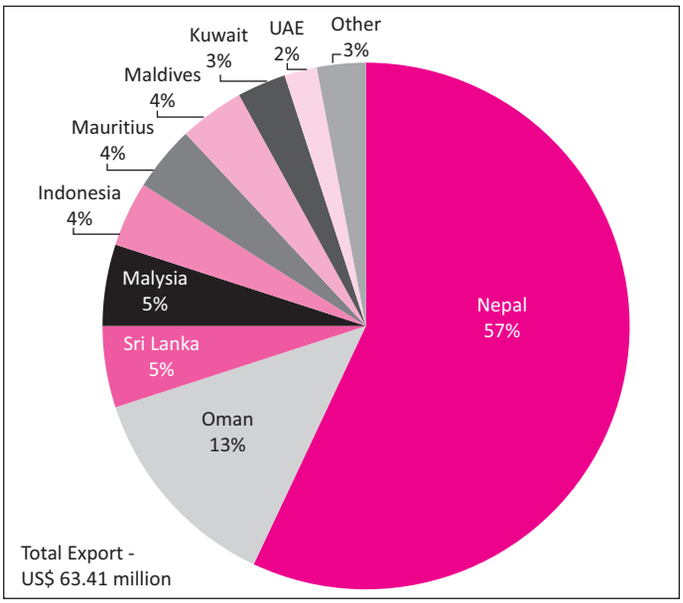
Export of Potato by India



Source: DGCIS

million in 2018-19, and a share of 57% of total potato exported from India during the year. Other major export destinations include Oman (12.7%), Sri Lanka (5.3%), Malaysia (4.9%), Indonesia (4.4%) and Mauritius (4.1%).

Top Export Destinations for Potato from India (2018-19)



Source: DGCIS

Outlook

Despite being the second largest producer of potato, the share of India in total global exports was mere 1.7% during 2018. There is a need to tap the opportunities in countries where demand for potatoes and import is higher. The productivity of Indian potatoes need to be significantly improved to be competitive in the global markets. The productivity differs within the states of India and this need to be addressed effectively to increase the total production sustainably. With growth in the processed food sector, the demand for potato is expected to increase further, which could be met sustainably by domestic production.

References:

- National Horticulture Board
- DGCIS
- FAO
- ITC Trade Map

Cold Storage in India

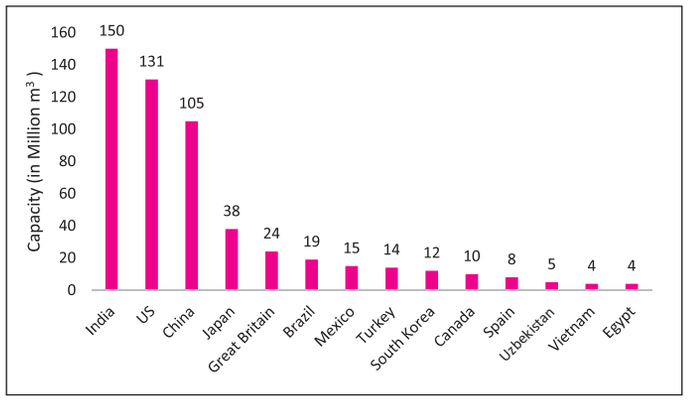
Introduction

Cold storage facility is an installation intended for the cooling, freezing, and cold storage of perishable food products and other perishables. A large cold-storage facility, which operates as an independent enterprise, comprises a cold-storage warehouse with truck and railroad platforms, compressor and condenser rooms for a refrigerating system, a cooling tower, reservoirs and a pumping station for a circulating water supply, administration and residential buildings, and other buildings and installations. India is among the largest producer of fruits and vegetables globally, yet the amount of post-harvest loss of fruits and vegetables is very high in India. The important thing to note is that India losses approximately ₹926 billion (US$ 14.33 billion) on account of post-harvest loss. Here, cold storage plays a major role in reducing the post-harvest loss. India has the highest capacity in refrigerated warehouses globally, with 150 million cubic meters, yet the utilization of this capacity is not optimum.

Global Cold Storage Capacity

Globally, cold storage capacity reached 616 million cubic meters in 2018, registering an increase of 2.7% since 2016[8]. The three largest country markets—India, the United States, and China—accounted for 60% of the total global refrigerated space. The United States, with 131 million cubic meters of refrigerated warehouse capacity, was ranked second behind India. Refrigerated facilities in the United States averaged approximately 113,000 cubic meters each. China ranked third in refrigerated space globally in 2018, with 105 million cubic meters capacity. After several years of rapid expansion, growth in the Chinese refrigerated warehouse industry has leveled off, according to industry sources.

Global Cold Storage Capacity (2018)



Source: GCCA Global Cold Storage Report

The other countries included in the list of countries with highest cold storage capacity have less than 50 million cubic meters of capacity. These include countries like Japan, Great Britain, Brazil, Mexico and Turkey.

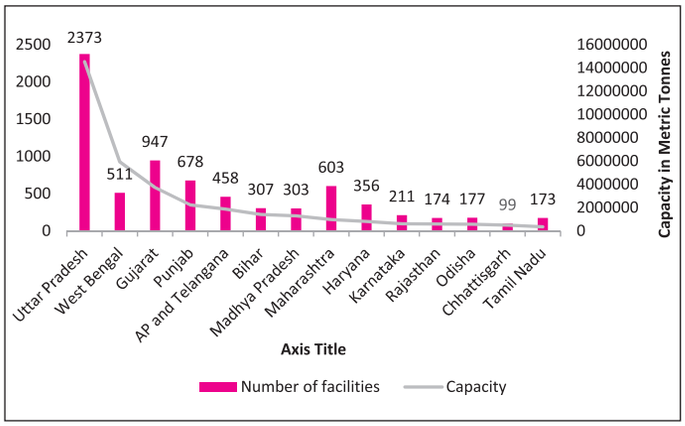
Cold Storage Scenario in India

The total number of cold storage facilities in India stood at 8009 as of July 2018[9], with a total capacity of 36.6 million metric tonnes. With 2373, Uttar Pradesh has the maximum cold storage facilities in India. Gujarat occupies the second place in number of facilities, but the cold storage capacity in Gujarat is lower than West Bengal, which has 436 fewer cold storages than Gujarat.

The state of Madhya Pradesh has higher capacity than Maharashtra, despite Maharashtra having almost double the number of cold storage facilities as compared to Madhya Pradesh. Madhya Pradesh has 303 cold storage facilities while Maharashtra has 603 cold storage facilities. The state of Chhattisgarh has more capacity than Tamil Nadu, while Tamil Nadu has higher number of facilities

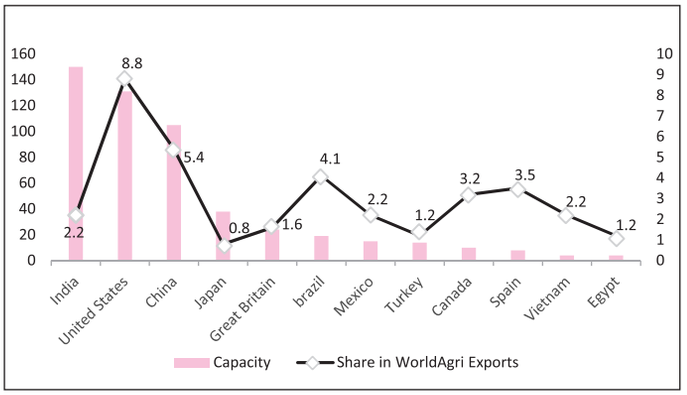
[8]GCCA Global Cold Storage Report
[9]Lok Sabha Query

State Wise Cold Storage Facilities and Capacity (2018)



Source: Indiastat

Global Capacity of Refrigerated Warehouses (in million m^3) and Share in World Exports



Source: GCCA Global Cold Storage Report, ITC Trade Map, Exim Bank Research

(173) than Chhattisgarh (99). More than 60% of the cold storage in India is used for storing potatoes, while the share of potato in the agricultural revenue is very low.

Challenges

India is among the largest producers of many fruits, vegetables and other crops. Despite the available cold storage facilities, the wastage levels in perishables in India are significantly high, viz., 15.9% in fruits, 5.2% in inland fish, 10.5% in marine fish, 2.7% in meat and 6.7% in poultry[10]. Estimated annual value of losses of agricultural produce currently stands at ₹92,651 crores.

Despite having the maximum refrigerated warehouse capacity in the world, India's share in world agri export stands at mere 2.2%, whereas Brazil has a larger share in world agri exports (4.1%) despite having one-twelfth of refrigerated capacity to that of India.

Lack of business-model parameters in subsidy support has impacted future development of the cold storage infrastructure, resulting in underutilization of capacity of the facilities. Most of the cold storage facilities in India are low in technology or based on outdated technologies, which are energy-inefficient.

Outlook

The apparent benefits of cold storages are so high that besides supporting an expansion in trade in perishables from India, could also curtail inflation and reduce dependency on price sensitivity and volatility of the perishables. A strong interplay of private players, markets and farmers is required for sustaining and developing the sector. There is a need to create multi product and energy efficient cold storage to address the issue of post-harvest losses and enhance quality of the produce, as also to increase shelf life of the produce.

According to industry sources, the cold storage industry is estimated to grow at a CAGR of 13% to 15% during the period 2019 to 2023, mainly driven by rising demand for processed food, fresh fruits & vegetables, seafood and bio-pharmaceuticals in exports markets.

References:

➢ GCCA Global Cold Storage Report
➢ Indiastat

[10]World Food India 2017

Indian Cashew Industry

Global Scenario

Production

The global production of cashew during the year 2017 stood at around 3.9 million tonnes. Vietnam was the leading producer of cashew worldwide in 2017, and its share in the aggregate production was approximately 21.7%. This was followed by India with an estimated production of 745 thousand tonnes. With a share in the global production of nearly 17.9%, Côte d'Ivoire was the third largest producer of cashews during 2017.

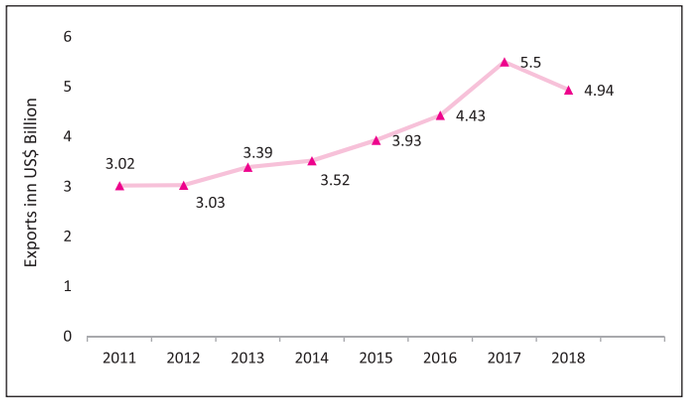
Trade

Cashew Kernel

Exports

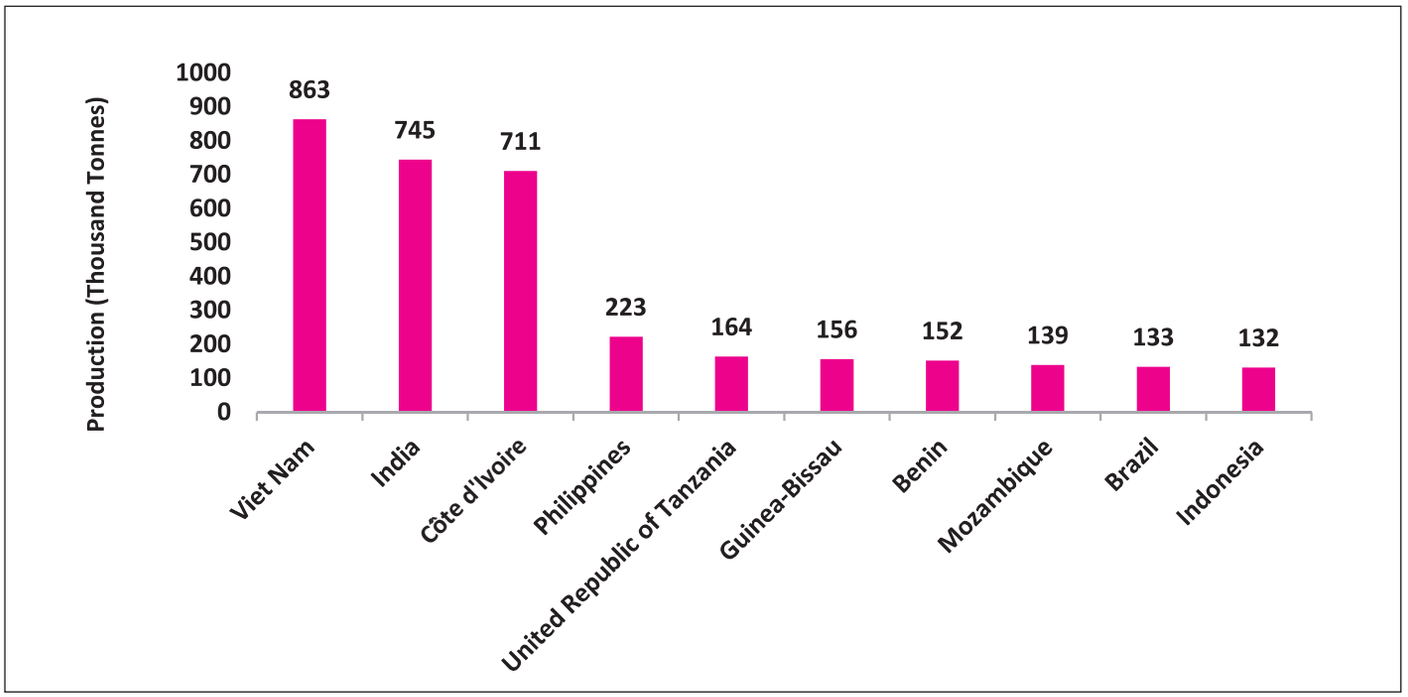
The global exports of cashew kernel (HS Code 080132) increased from US$ 3.5 billion in 2014 to US$ 4.9 billion in 2018. Vietnam was the leading exporter of cashew kernel globally, with its exports touching US$ 3.1 billion in 2018. India was the second largest cashew kernel exporting country with exports worth US$ 665.8 million during 2018. Other major exporters of cashew kernel were the Netherlands, Germany and Brazil, together accounting for a share of 12.1% of world exports.

Global Exports of Cashew Kernel (HS Code 080132)



Source: ITC Trademap

Major Cashew Producing Countries (2017)



Source: FAO

Imports

The USA was the leading importer of cashew kernel with its imports during the year 2018 aggregating to nearly US$ 1.46 billion. With a share of 83.8% in its imports, Vietnam was the largest supplier of cashew to the USA, followed by India and Brazil. Germany was the second largest importer of cashew kernel accounting for 10.5% of world imports in 2018. Other major importers of cashew kernel in 2018 were the Netherlands, the UAE and the United Kingdom.

Unshelled Raw Cashew

The global exports of unshelled raw cashew (HS Code 080131) have increased over the years with exports valued at US$ 2.8 billion during the year 2018 as compared to US$ 1.8 billion in 2014. The African countries accounted for major share of global exports of unshelled raw cashew during 2018. Côte d'Ivoire was the largest exporter followed by Ghana, Cambodia, Burkina Faso, Nigeria and Benin.

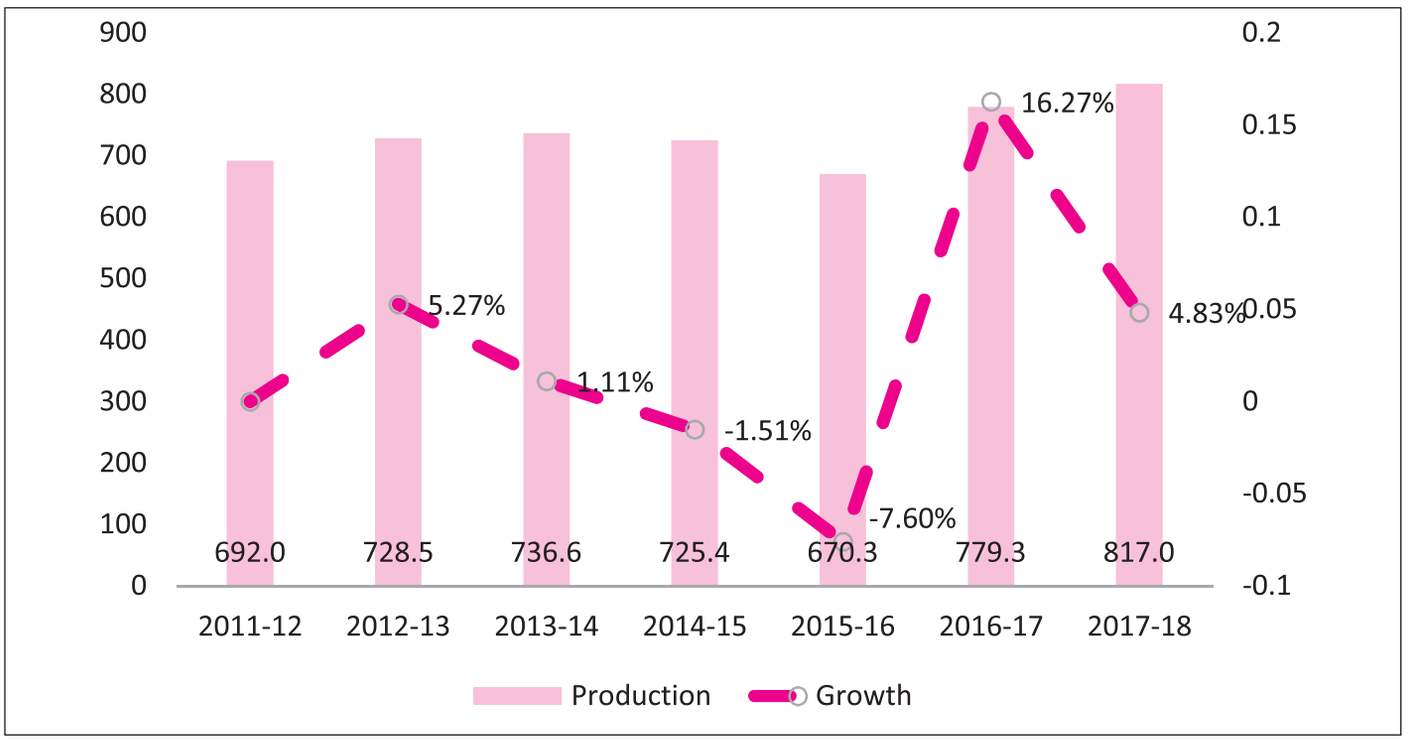
In terms of imports of raw cashew, Vietnam and India were the leading importers during the year 2018 accounting for approximately 92% of global raw cashew imports.

Indian Scenario

Production

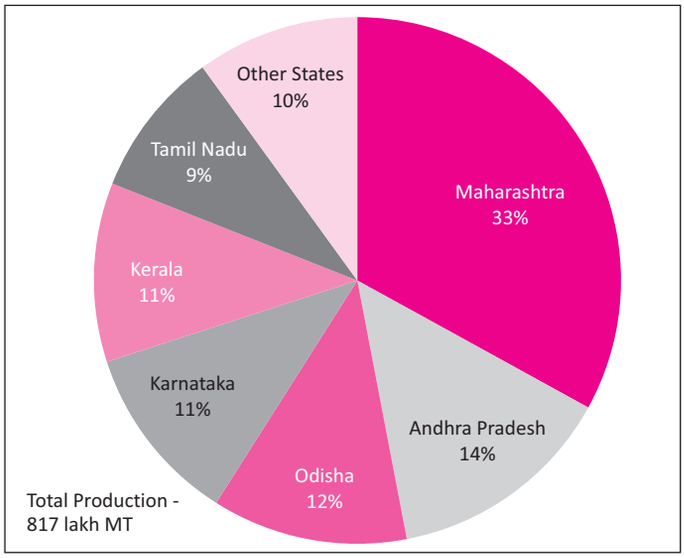
Production of cashew in India was estimated at 8.2 lakh Metric Tons (MT) in 2017-18, up from 7.8 lakh MT in 2016-17. The area under cashew nut production in India during 2017-18 stood at 1062.04 thousand hectare. The area under production has witnessed a consistent expansion over the period 2010-11 to 2017-18. With production of 2.6 lakh metric tons in 2017-18, Maharashtra was the leading producer of cashew in India, Other major cashew producing states in India includes Andhra Pradesh, Odisha, Karnataka, Kerala and Tamil Nadu.

Cashew Production in India (in lakh metric tons)



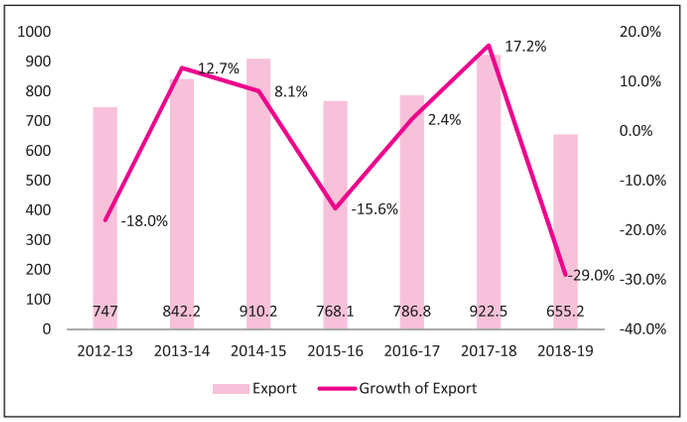
Source: Directorate of Cashew and Cocoa Development

Major Cashew Producing States in India (2017-18)



Source: Directorate of Cashew and Cocoa Development

Exports of Cashew Kernels (US$ Million)



Source: CMIE Economic Outlook

Trade

Exports of Cashew Kernel

India is a major exporter of cashew kernel (HS Code 080132). However, exports of cashew have been witnessing a decline in the recent years. India's exports stood at US$ 655.2 million during 2018-19, which was 28.9% lower than the estimated value of US$ 922.5 million during 2017-18[11].

The UAE was the leading export destination of cashew kernel from India during 2018-19, accounting for a share of 19.16% of the country's total cashew exports during the year 2018-19. Other major export destinations for Indian cashew kernels included Japan, the Netherlands, Saudi Arabia, the USA, Spain and Belgium.

Imports of Unshelled Raw Cashew

India is the largest importer of unshelled raw cashew (HS Code 080131) globally, with estimated imports of US$ 1.7 billion during 2018. Côte d'Ivoire was the largest supplier of raw cashew to India with a share of 19.3% in India's total imports of raw cashew during the year 2018. Other major suppliers of raw cashew to India were Benin (16.2%), Tanzania (13.1%), Ghana (11%), Guinea Bissau (7.2%), and Nigeria (6.9%).

[11]DGCIS

Outlook

The export of cashew from India in terms of value declined to a 25 year low during 2018-19. India is the largest cashew consuming country and the unmet demand by the domestic production leads to high imports. The expected higher international price is projected to increase the import cost and further impact exports negatively. The sale of cashew during the festive seasons in India witnessed only a 25% growth, whereas the sale was expected to double during the periods. Dumping of cashew kernels in India by African countries is also a major cause of concern for domestic production and trade. According to the instructions issued recently by the Ministry of Commerce and Industries, Govt. of India, the Cashew Export Promotion Council of India (CEPCI) is slated to file an application on anti-dumping with Director General of Trade Remedies (DGTR). Indian processing is heavily dependent on the import of raw cashew nuts from African countries. As African nations has been encouraging domestic processing of cashew nuts and envisages 50% of their raw cashew production to be processed domestically by 2025, India's domestic production will need to be augmented to 2 million MT by 2025 for sustainability.

Reference:

- The Cashew Export Promotion Council of India
- CMIE Economic Outlook
- ITC Trade Map

News Focus

Hike in the MSP for 2020-21

The government of India has hiked the Minimum Support Price (MSP) on Rabi crops from 50% to 109% for marketing season 2020-21. The MSP for wheat is raised by ₹85 to ₹1,925 a quintal and for pulses by up to ₹325 per quintal to ₹4,800. This decision was taken at the meeting of the Cabinet Committee on Economic Affairs (CCEA). Barley MSP has also been increased by ₹85 to ₹1,525 per quintal for the current year from ₹1,440 per quintal last year.

To encourage cultivation of pulses, the support price of masoor has been increased by ₹325 to ₹4,800 per quintal for this year from ₹4,475 per quintal last year. Similarly, the MSP of gram has been hiked by ₹255 to ₹4,875 per quintal for this year from ₹4,620 per quintal last year. Barley MSP has also been increased by ₹85 to ₹1,525 per quintal for the current year from ₹1,440 per quintal last year.

Source: Business Today

World food prices up in December

World food prices rose for the third consecutive month in December, as a strong rally in vegetable oil prices drove the FAO (Food and Agriculture Organization) Food Price Index to its highest level in five years. It averaged 181.7 points during the month, a 2.5% increase from November, and the highest level since December 2014. For 2019 as a whole, the index - which tracks monthly changes in the international prices of commonly-traded food commodities - averaged 171.5 points, some 1.8% higher than in 2018, but still 25 per cent below its peak in 2011.

The FAO Vegetable Oil Price Index rose 9.4% from November, increasing for the sixth consecutive month. The latest upturn was once again driven by palm oil prices, buoyed by both solid demand, especially from the biodiesel sector, and concerns about tightening supplies. The FAO Sugar Price Index rose 4.8%, FAO Dairy Price Index rose 3.3% and FAO Cereal Price Index rose 1.4% from November.

Source: FnBnews

FSSAI gives nod to rapid food testing kits

FSSAI has announced the introduction of new rapid food testing devices/kits for detection of food-borne pathogens and toxins. It has approved 30 rapid food testing kits/devices across six product categories, i.e., edible oils, milk, water and alcoholic beverages, meat and meat products, fish and fish products and raw and finished products, and an automated system for rapid detection of pathogens in food matrices. The country's apex food regulator, in a statement, said that these devices will ensure faster, better and cheaper real-time testing of food. These are expected to become an integral part of quality assurance/quality control programmes in the food industry, and also for regulatory and surveillance purposes in 2020.

Source: FnBnews

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