

Report on **SEED INDUSTRY SCENARIO**

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Hotel The Lalit Ashok | Bangalore



Global Seed Market

The global seeds market was valued at USD 59.71 billion in 2018, exhibiting a CAGR of 7% during 2011 - 2018. It is further expected to register USD 90.37 billion in 2024 witnessing a CAGR of 7.9% during the forecast period 2019-2024. The growing demand for grains, oils, and vegetables is a significant driver for the seeds market. Grains represent the biggest portion of daily calorie intake in developing countries of the Middle East & Africa, Asia/Oceania, and CIS, and therefore, the demand for grains will be one of the most critical stimulants for the seed market.

The shift in farming practices worldwide has necessitated adoption of commercially produced enhanced seed varieties by the farmers as opposed to using seeds from the last harvest. High yield, improved nutritional quality, reduced crop damage, disease resistance, etc. motivated farmers in investing in commercial seeds.

The massive increase in the demand for biofuel, buoyed by the large subsidies provided in many western countries, has increased production of global biofuels by almost 150% between 2004 and 2010 from 42 billion liters to 104 billion liters respectively. As per a FAO report, the biofuel

boom had a major impact on the evolution of world food demand for cereals and vegetable oils. Moreover, it states that without biofuel, the growth rate of world cereal consumption is equal to 1.3%, as compared to 1.8% of biofuel and thus is an important factor behind expansion of global seed market.

Besides these, acceptance of area under genetically modified crops, increasing demand for animal feed, rapid adoption of biotech crops and decreasing per capita farmland are contributing to the growth of seed market. On the other hand factors like rising concerns over GM seeds, years involved in development of new traits and long GM approval timelines and government regulation have been holding the sector back.

The North American seeds market was valued at USD 20.91 billion in 2018, serving the farmers mainly in grains, cereals, fruits, vegetables, and oil and forage crops. The market is expected to reach USD 30.9 billion by 2024 and is estimated to register a CAGR of 6.46%, during the forecast period. North America is the largest commercial seeds market, accounting for more than 35% of the market share.

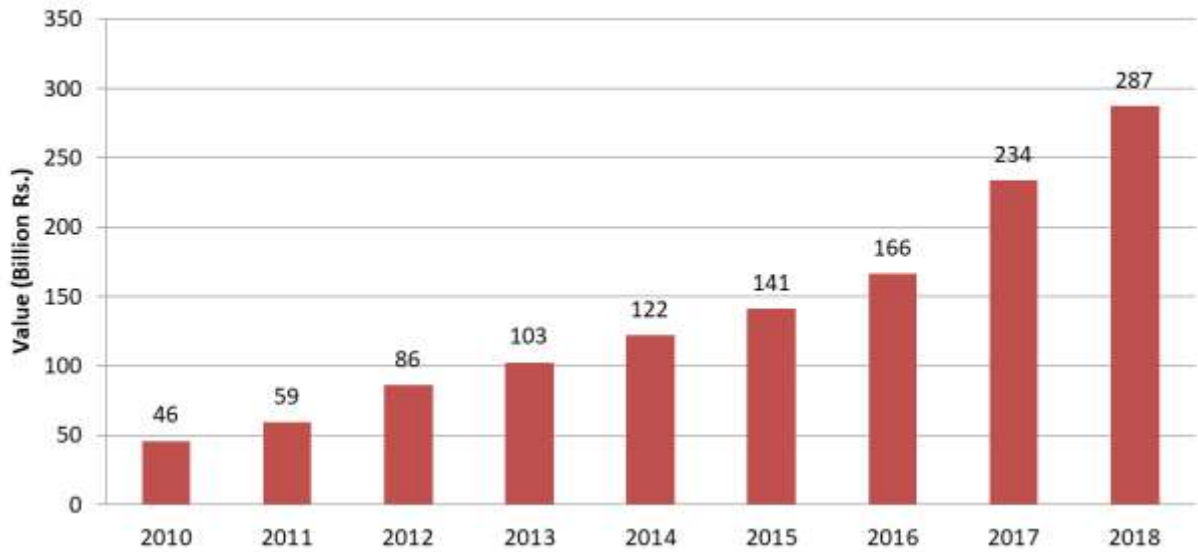
Indian Seed Industry

The profile of seeds in India has changed over the years. Earlier, it was the seeds saved from the previous crop that was used in Indian agriculture. Now it is the most advanced seeds developed by seed companies that dominate the farmers' fields. The phenomenon has roots in the changing dynamics of agriculture, not only in India but also worldwide. The spectra of changing climate, the danger of depleting resources and the threat of

burgeoning population has diminished the productivity of agriculture. Stagnant yields and yield loss have become quite persistent. Adding to the chaos, India has its own share of problems –lower penetration of technology, shrinking land holdings, marginal farmers, lack of mechanization, shortage of labour to name among a few.



Indian Seed Market



*IACG Compilation

In 2018, the Indian seeds market reached a value of US\$ 4.1 Billion, registering a CAGR of 15.7% during 2011-2018. It is further expected to grow at a CAGR of 13.6% during 2019-2024, reaching a value of US\$ 9.1 Billion by 2024. Coupled with increasing domestic demand and demand for quality seeds in various foreign countries, mainly the South East Asian countries, seed industry in India is witnessing new paradigms of growth and development. The use of hybrid seeds has silently but consistently witnessed growth along with several other driving factors like increasing middle class and increasing

disposable income, growth in the food processing sector, increasing seed replacement ratio and other allied factors. Rising awareness among the farmers related to the benefits of using certified/ quality seeds has led to an increase in the demand for seeds over the past few years. This has resulted in an increasing willingness among the farmers to pay higher price for quality seeds. When compared to the global seed production India's share is very less. India is way behind countries like USA and China in terms of total seed market size.

Growth Drivers

Increasing disposable income

Increased Seed Replacement ratio(SRR)

Government policy support

Increasing adoption of hybrid seeds

Patent protection systems and intellectual rights over plant varieties,

Increased investment from public as well as private sector

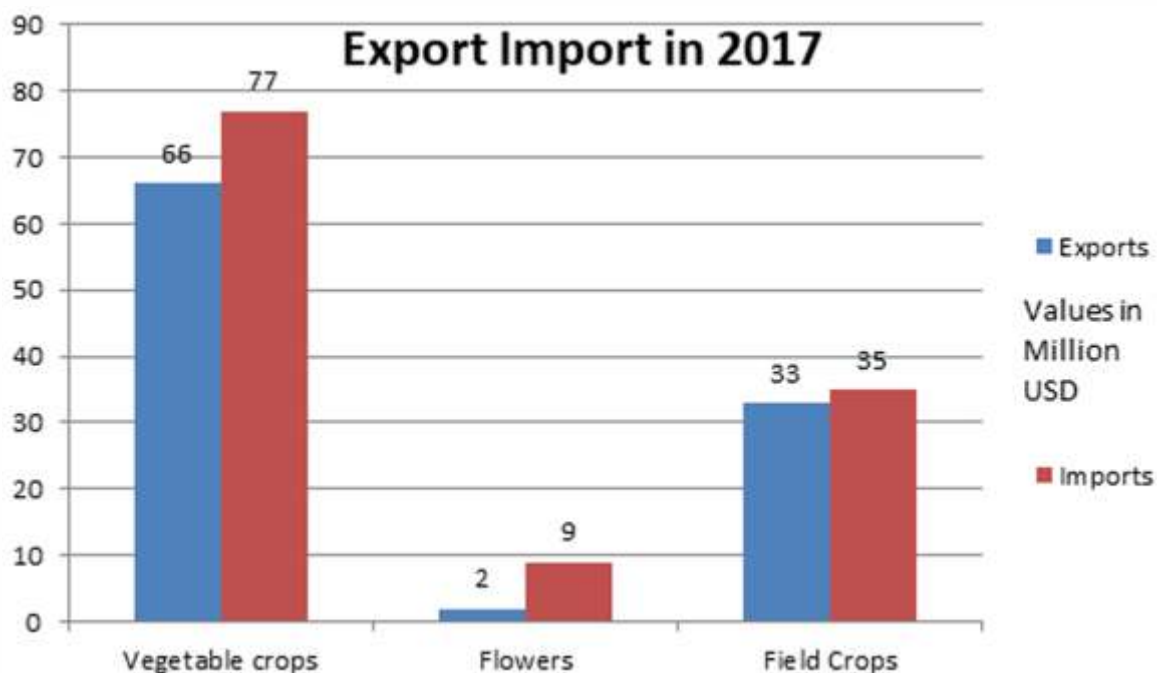
Of the global seeds market, India's market share was 4% in 2017 which was dominated by cotton seeds, maize seeds and fruits and vegetable seeds. India stands 16th globally in fruits and vegetables seed exports, and had nearly 2% share of the global trade in 2016. In terms of global trade, India is almost self-sufficient in flower, fruits and vegetables and field crops seeds. The Indian seed market is majorly dominated by non-vegetable seeds such as corn, cotton, paddy, wheat, sorghum, sunflower and millets. Grain seeds represent the largest seed type, accounting for more than half of the total seed production. Uttar Pradesh represents the largest producer, accounting for around 12% of the total market share of grain seed production.

Cotton is one of the most cultivated crops in India, with great economic importance attached to it. The cotton seed market was valued at Rs.24.86 billion in India in 2016. India is also the second largest producer of Cotton worldwide. Since 2002, Bt Cotton has steadily prevailed over India's Cotton fields raising overall cotton production to record highs. Today, over 90% of Cotton grown in India is cultivated by using Bt Cotton seeds. There are very few countries in Asia and Africa which allows commercial cultivation of GM crops and hence Cotton seed export has not picked up in last decade. Now with more countries opening up for

GM cultivation, there exists huge potential to export Cotton seeds from India.

Maize is one of the largest consumed commercial seed, accounting for Rs.14.91 billion of revenue in 2016. The growth in maize is attributed to its increased use as livestock feed and in ethanol production. Presently, approximately 25% of maize is used as food grain, while remaining 75% is used to meet nonfood demand, viz. bio-fuels, poultry feed, animal feed, brewing alcohol, starch based wet milling industries and other industrial uses. However, the enhanced investment in maize by global seed companies would flow into India through technology transfer and Public-Private Partnerships in the next fifty years.

Government of India has not yet fixed any target for increasing acreage of **hybrid rice** in the country. However, efforts are being made to promote cultivation of hybrid rice through various crop development programmes such as National Food Security Mission (NFSM), Bringing Green Revolution to Eastern India (BGREI) and Rashtriya Krishi Vikas Yojana (RKVY). With private sector playing a major role in Hybridization of Rice, the hybrid rice seed market has touched more than 45 thousand metric tonnes volume sale in 2016. The growth in 2016 can be attributed to significant increase under Kharif acreage of rice due to abundant rainfall, after a consecutive two years of drought and growers shift from Inbred to Hybrid due to problems faced previously with OPV's.

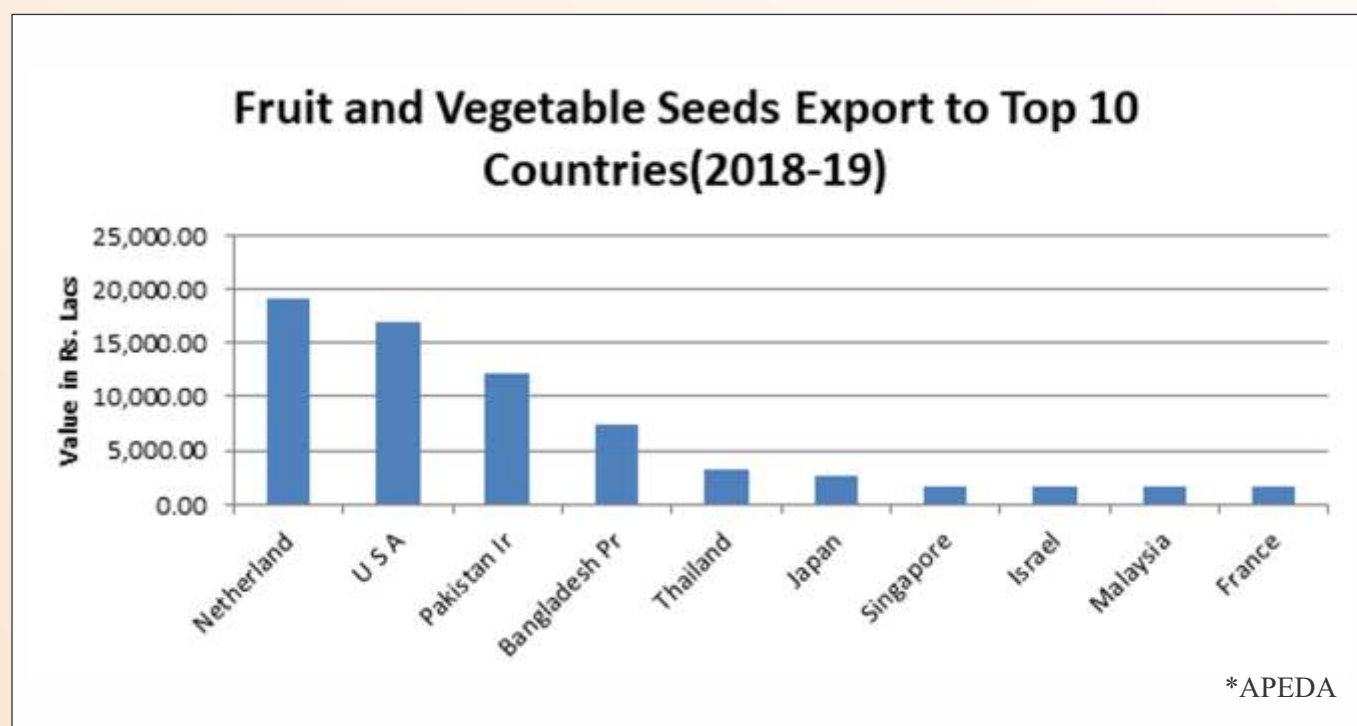


*International Seed Federation

Being agriculture based country; India is probably best placed to cater to not only domestic but also global seed requirements. Its importance is also reflected by its overall position in the global seed trade. In case of fruits and vegetables, India ranks number 16 in the global fruits and vegetable seed exports with only 1.68% share of the global trade in 2014-15. Although, there is a substantial increase in India's export of fruits and vegetable seeds in value, India has already started to lose a large share of such exports over the past few years. Lack of appropriate policy reform in Indian seed sector can be one missing element, which are discouraging exporters and producers to engage more in export of fruits and vegetable seeds. It also needs to be examined whether the bargaining positions of other countries have improved or they have taken any competitive advantage or market imperfections of India has increased in recent years.

However, India's imports of the fruits and vegetable seeds

have depicted a declining trend in 2016, when compared to 2015. This decline is reflected not only in quantity but also in value terms. The major countries exporting fruits and vegetable seeds to India in 2016 included Thailand, Egypt, Chile, United States and China, accounting 64% of the total imports of fruits and vegetable seeds, amounting to Rs.4.16 billion in India. The Indian seeds market is anticipated to grow at a considerable CAGR rate due to improvement of seed replacement rate, production and distribution of quality seeds appropriate to agro-climatic zone at affordable prices along with a determined effort to address region specific constraints. Moreover, several factors, including increased subsidies and renewed government thrust on the use of high yielding varieties, will lead to an increased productivity in the seed market. The total export of fruit and vegetable seeds in 2018-19 was valued at Rs. 84927 lakhs.



The Indian seed market has witnessed a major restructuring as a result of the implementation of some progressive policies by the government. Seed Development, 1988 and National Seed Policy, 2002 have helped in strengthening the Indian seed industry in the areas of R&D, product development, supply chain

management and quality assurance. Owing to this, India has emerged as the fifth largest seed market across the globe. Moreover, the active participation of both, public and private sectors has also played a vital role in laying a strong foundation of the industry.

Policy Initiatives in Seed Sector

Enactment of the Seeds Act (1966)

Seed Review Team-SRT (1968)

National Commission on Agriculture's Seed Group (1972)

World Bank aided National Seeds Programme (1975-85)

**Technology Mission on Oilseeds & Pulses (1986) renamed as
'The Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize'**

Seed Transport Subsidy Scheme (1987)

New Policy on Seed Development (1988)

Seed Bank Scheme (2000)

PPV&FR Act (2001)

National Seeds Policy (2002)

The Seeds Bill (2004)

Formulation of National Seed Plan (2005)

National Food Security Mission (2007)

Rashtriya Krishi Vikas Yojna (2007)

National Biotechnology Development Strategy (2007)

National Biotechnology Regulatory Authority of India Bill (2009)

Indian seed industry has seen stupendous growth in recent times. India's need to etch a remarkable agriculture story has fuelled this growth. Conducive policy reforms and government support have spurred the transformation of this industry in recent times. Many regional and multinational players have captured the scene and today private sector is a formidable presence in India. Private sector has played a major role in changing India's seed sector. Investment and technical expertise garnered from different parts of the world has made this fete possible

The seed industry of the country is going to align with the changing food consumption scenario of the country. There has been a decline in the proportion of expenditure on food items in last three decades. The change has occurred in both urban and rural areas. Between 1990 and 2010, consumption of cereals and pulses has decreased considerably while consumption of fruits and vegetables has almost doubled. The future seed market of the country is expected to witness more adoption of hybrid seeds. The country is going to witness an increase in the cultivation of vegetables and fruits, driven by the growth and

development of the food processing sector along with changing consumption habit of the people. The export sector is also set to witness growth.

One of the most important developments in the future will be the increased demand for quality vegetable and fruit products, because of the increased consumer awareness and increase in disposable income of the population. As a result of this, trend of protected cultivation will increase in India. The current seed industry might also need to develop new products in order to attune with the greater mechanization of agriculture sector in India in the near future, vastly due to labor challenges. One more expected change that the seed industry is going to witness is in the form of increased demand for fruits and vegetable varieties with higher nutritional values. Life style related health problems are increasing in the country with diseases like obesity, diabetes, malnutrition etc. on the rise and hence people are becoming more health conscious which will propel the use of fruits and vegetables with more nutritional values.





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