

Prospects of Seed Entrepreneurship in India

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(Received: 30 November 2023; Revised: 13 December 2023; Accepted: 03 January 2023; Published: 15 February 2024)

(Published by Research Trend)

ABSTRACT: Seed sector is very vibrant and dynamic in nature. Initiations for setting up a new seed business are important for young entrepreneur primarily for two reasons. Firstly, it enhances the capacity of the formal seed sector. Secondly, it contributes to livelihood augmentation of seed growers as well as stakeholders. Local growers, when incentivized and supported, can take up seed business to cater to the unmet seed needs of the locality. While India is the fifth largest seed industry globally, it has a miniscule share in global seed trade which accounts to approximately less than 1.0 percent of the total global exports. Despite this, India has an exceptional chance to expand export market to both sub-tropical and tropical regions of the world due to its vast geographical and agro-climatic diversity. Furthermore, India possesses trained workforce to meet the needs of Research and Development allowing to become a worldwide seed hub for breeding varieties for a variety of global markets and custom seed production. Presently, India is also undertaking custom production in vegetable seeds and have potential to become a global leader in it. Moreover, with increasing number of health-conscious consumers, the quality specific demand for food has been the major growth driver for demand of bio fortified varieties. Thus, the inherent factor such as diverse agro-climatic conditions, huge domestic market, export potential, vast germplasm base, availability young, skilled and cheap workforce etc. are the driving force for attracting new seed entrepreneur despite having highly dynamic, diverse, innovative and highly competitive seed market.

Keywords: Entrepreneurship, Quality Seed, Hybrid, Seed Industry.

INTRODUCTION

Seed entrepreneurship is an activity for setting up a new seed business taking on financial risk in hope of business profit. In other word we can defines it as act of creating business while building and scaling up seed production, processing, marketing and distribution capacities to generate a profit. There were many enterprises in agriculture which have commercial applications. Among them, seed production is an emerging enterprise due to high demand of quality seed (Tomar *et al.*, 2011). Availability of healthy and quality seed is very crucial to increase the agricultural production. It is essential to maintain and make available the good quality seed higher output that become the basis for improved agriculture and successful entrepreneurship (Kumar *et al.*, 2013). Here, this new or improved technology defined as any innovation in seed or planting material which help the farmer to finds good value for money. This innovation will be utilized for creating business. Seed Business is very vibrant and dynamic in nature. It is different from other entrepreneurship in many aspects which is as mentioned below;

- Seed is a biological product/unit
- It is produced under open or variable environmental conditions
- Maintenances of seed quality is cumbersome process

- Seed is produced over a period of time.
- The final delivery of seed is in quietly remote/rural area
- Majority of clients/producer/farmers are poor and illiterate
- Client having low risk taking ability
- Seed handling during storage and transportation is sensitive operation

Due to these factors as mentioned above, maintaining the product quality during production, transportation and distribution is a very tough and risky. Despite this there are several features exist in Indian seed sector which attract a new entrepreneur to this sector. These features are actually the driving force behind growth of Indian seed industry such as availability of vast arable land, low seed replacement rate, diverse agro-climatic region, export potential, supportive government policy etc. This provides a favorable environment for a new seed entrepreneur. This review article analyses the Indian seed industry's market situation, market growth potential, and its tapping opportunities for the young seed entrepreneur.

OBJECTIVES OF SEED ENTREPRENEURSHIP

- To improve the access of good quality seeds to farmers.

- b. To create business opportunity and also in increasing income level of stakeholders.
- c. To increase the adoption of best fitting varieties through development of improved varieties.

STATUS OF SEED BUSINESS IN INDIA

The public sector institutions (ICAR institutes, NSC etc.) during 1960-70s had created a solid foundation on which the Indian seed industry was able to grow. Currently, it is going through a wide-ranging, severe development that includes the expansion of private seed companies, MNC entry, joint ventures between Indian businesses and international seed businesses, and consolidations. As opposed to the 6-7 percent global growth rate, our seed industry has been expanding at a CAGR of 12 percent (NASI, 2018). The use of Bt cotton hybrids, single cross corn hybrids, hybrid vegetables, and hybrid paddy have all contributed significantly to value increases. The volume growth has mainly come through increased Seed Replacement Rate in crops like Paddy and Wheat. The Indian Seed Programme plays an instrumental role in the agriculture of India and is well positioned for future expansion (NITI Aayog, 2018).

According to an OECD report (2020), the size of the global seed industry market was predicted to be USD 45 billion in 2012 and USD 52 billion in 2019–20. Despite having the world's fifth-largest seed industry, India only accounts for a little portion of the worldwide seed trade. According to ISF data (2018), the market size for seeds of field crops, tree crops, potatoes, flower crops, and vegetable crops is valued at USD 13.8 billion. With roughly USD 2.88 billion in exports of

seeds, the Netherlands tops the world, followed by France (USD1.97 billion) and the USA (USD1.93 billion). India exports seeds valued around USD 137 million annually, making up less than 1 percent of all exports worldwide. We can understand seed sector in better by knowing seed market in term of share, size, type, business profile and its segment, and regulation involved particularly for export business. These were categorically described here one by one;

A. Share of Public and Private Sector

The percentage of the public sector producing seeds in the country decreased from 42.72 percent in 2017–18 to 35.54 percent in 2020–21, while the percentage of the private sector increased from 57.28 percent to 64.46 percent over the same time period, underscoring the growing influence of private businesses in India's seed industry. About 540 private seed firms, including those with Indian roots and global corporations, are active in the nation, according to the 25th report on Demands for Grants (2021–2022) from the Standing Committee on Agriculture, which was presented in the Lok Sabha. Over 80 of these have their own Research and Development initiatives. The remaining ones do not generate breeder seeds; instead, they develop and sell seed for public-sector types.

B. Size and Type of Seed Market

According to OECD estimates (2020), the Indian seed industry is the fifth largest in the world and is worth USD 3.1 billion. The market size does not account for farm conserved seed, which is stored, consumed, and traded between farmers. The global share in seed sector based on market size is tabulated below;

Table 1: Global position of countries in seed sector based on its market size during 2019-20.

Sr. No.	Country	Market Size (USD Bn)	Share (%)
1.	USA	13	25
2.	China	11	21
3.	France	3.5	7
4.	Brazil	3.2	6
5.	India	3.1	6
6.	Canada	2.8	5
7.	Japan	1.7	3
8.	Germany	1.4	3
9.	Argentina	1.1	2
10.	Italy	1	2
11.	Turkey	0.8	2
12.	Spain	0.85	2
13.	Netherlands	0.6	1
14.	Russia	0.6	1
15.	UK	0.5	1
16.	South Africa	0.5	1
17.	Australia	0.5	1
18.	South Korea	0.5	1
19.	Mexico	0.5	1
20.	C. Republic	0.4	1
21.	Others	4.8	9
	Total	52.25	100

(OECD, 2020)

The types of seed sold in Indian market are basically certified seed and truthfully labelled seed. Most of the private players are finding easiest way for marketing of

seed as truthfully labelled seed due to some specific features. The features of both types of seed are enlisted below

Table 2: Classification of commercial seed market in India.

Sr. No.	Class	Features
a	Certified Seed	<ul style="list-style-type: none"> ✓ Mainly OPV Seed ✓ Mainly Produced by SSC/NSC/SAU/ICAR institute ✓ Notified Varieties ✓ Follow generation system of seed multiplication ✓ Price low
b	Truthfully Labelled Seed (TLS/TFL)	<ul style="list-style-type: none"> ✓ Mainly Hybrid Seed ✓ Mainly Produced by Pvt Seed sector ✓ Un-Notified Varieties ✓ Not Follow GSSM ✓ Price High for hybrid TL seed

C. Share of OPV and Hybrid Seeds

The value of the Indian open pollinated varieties (OPV) seed sector, which includes nurseries and crops where vegetative planting material is used as seed or propagating material, was projected to be Rs. 12250.0 crores. Both organised and unorganized sectors involved in the commercial OPV seed market.

According to an estimate of NSAI (2018), the Indian hybrid seed market is worth USD 1.33 billion or Rs 10000.0 crores. The whole hybrid cotton seed market is made up of GM cotton, making almost 35 percent of the hybrid seed market and around 16 percent of the total seed market.

Table 3: Share of crop-wise OPV seed market in India.

Sr. No.	Crop	Share (%)	Value (Rs in Cr)
1.	Rice	24.5	3000
2.	Wheat	24.5	3000
3.	Millets (Maize, Jowar, Forage crops, etc)	4	500
4.	Pulses (Soybean and Grams)	24.5	3000
5.	Oilseeds	4	500
6.	Vegetables (Potato, Onion, OPV crops)	8	1000
7.	Planting material (Nurseries, Horti crops, etc)	6	750
8.	Others (Sugarcane, Tobacco, Jute, etc)	4	500
	Total	100	12250

(NSAI, 2018)

Table 4: Share of crop-wise hybrid seed market in India.

Sr. No.	Crop	Share (%)	Value (Rs in Cr)
1.	Cotton	35	3650
2.	Vegetable	26	2600
3.	Maize	18	1800
4.	Rice	13	1200
5.	Millets	4	500
6.	Oil Seed	4	225
7.	Other	-	25
	Total	100	10000

(NSAI, 2018)

D. Business profile of Private Seed Enterprise

By examining the activities of all significant seed players in the Indian seed market, it was discovered that only 15 percent of firms had their own research and development, production, and marketing wings, 20 percent of firms had production and marketing wings, and the majority of firms (65 percent) were experts in seed marketing and distribution.

E. Business Segmentation in Seed Market

Seed market has been divided into various types of segments based on crop type, seed type, seed traits, availability, regions etc. Knowledge of all these segments is essential for a new seed entrepreneur.

Here seed market has been classified in various segments;

a. MS by Crop type: Cereals, Pulses, Oil Seed, Fiber crops, Vegetables etc.

b. MS by Seed Types: Conventional Seed, GMO Seed

c. MS by Traits: Herbicide tolerance, Insecticide resistant etc.

d. MS by Seed treatment: Treated, Non treated

e. MS by Seed availability: Commercial Seed, Saved Seed

f. MS by Regions: Asia pacific, North America Europe, Latin America, middle east & Africa

F. Regulatory bodies in Seed Export and Import

The primary regulatory organisations involved in seed import and export are Directorate General of Foreign Trade (DGFT), Agricultural and Processed Food Products Export Development Authority (APEDA), and Directorate of Plant Protection, Quarantine & Storage (DPPQ). India's exports are primarily promoted by the DGFT, which is charged with carrying out the Foreign Trade Policy. It is crucial to the growth of trading ties with many other countries and, as a result, contributes to both bettering economic growth and giving the trade

sector the necessary drive. DGFT grants the seed exporter an export licence based on the Department of Agriculture and Cooperation (DAC's) recommendation. Also, DGFT is in charge of approving a list of seeds and planting materials that may be exported or imported in accordance with the suggestions given by DAC.

OPPORTUNITIES IN SEED SECTOR

India has a remarkable opportunity to export seeds to both subtropical and tropical parts of the world because of its enormous geographic and agro-climatic diversity. Additionally, India has a workforce that is trained to meet research and development requirements in plant breeding, biotechnology, seed production, and seed technologies. This enables India to become a global seed hub for breeding varieties for a range of global markets and producing customized seed. Due to the comparable agro-climatic and edaphic conditions, Indian plant types grow well in South Asian, Southeast Asian, and African nations.

The area has significant inherent potential because of the vast farms and its economy's reliance on related sectors. Since India and China are two of the world's top agricultural producers, the seed industry in Asia-Pacific is expanding quickly. With a CAGR of 7.9 percent, Asia-Pacific is predicted to expand the quickest between 2015 and 2020, followed by South America. Also, it is the region of the seed market that is expanding the quickest. With important crops including rice, maize, and vegetables, the region is seeing rising seed replacement rates and a rise in the adoption of hybrids. The seed industry in the area has a lot of growth potential.

The seed industry is already well established in India. We can take a bigger chunk of the global market if there is more policy backing for us. India has a strong seed industry, a variety of agro-climatic conditions, knowledge of seed production, systems for managing seed quality, and the infrastructure required to take advantage of this opportunity. The driving forces attracting new seed entrepreneur are described below;

A. Diverse Agro-climatic Region

India boasts the world's second-largest arable land area, as well as fifteen main agro-climatic zones suitable for agricultural seed production. This diversity allows us to perform breeding and assessment studies for almost every corner of the world. This wide range of agro-climatic conditions also favors the seed development of various crops, including tropical, subtropical, and temperate varieties. We still have considerable areas in diverse agro-climatic regions that are not covered by quality seed, this diversity also brings potential in terms of seed demand.

B. Poor Seed Replacement Rate (SRR)

Seed replacement rate is a measure of cropped area covered with quality seed. Despite the fact that SRR has greatly increased over the previous ten years in several States, it is still low by global standards, where SRR is greater than 90 percent. As all of the cotton grown in India has been transformed into Bt Cotton hybrids, the SRR for cotton is almost 100 percent. According to NASI (2018), the hybridization rate varies from 70 to 95 percent in different states for hybrid seed crops like maize, bajra, castor, and vegetable crops. The SRR is less than 25-30 percent in many open pollinated (OP) crops of food grains and oilseeds, which results in low productivity. It is important to note that several states in India still cultivate ancient crop varieties that were released and commercialized in the last 3-5 decades by both the public and private sectors, and the productivity of the majority of these old varieties has plateaued or stagnated. Therefore, there is a strong need for varietal replacement with new varieties being developed through research and development.

Studies made by researchers clearly indicate that high-volume low-value seeds, such as wheat, groundnut, soybean and chickpea, 80 percent of the cropping area are still sown with farm-saved seeds of old and obsolete varieties (Gadwal, 2003; Hanchinal *et al.*, 2007).

Table 5: Seed replacement rate.

Crop	SRR (National)	Highest SRR		Lowest SRR	
		Percent	State	Percent	State
Paddy	33	82	AP	9	Uttarakhand
Wheat	25	42	Maharashtra	11	J&K
Maize	50	100	Karnataka	5	Orissa
Jowar	26	65	AP	11	Tamilnadu
Bajra	63	100	Gujarat	29	Karnataka
Sunflower	43	100	AP	8	MP

(Seed Net Portal, 2013)

C. Demand of Hybrid

The market is expanding as a result of the rising demand for hybrid seeds from the food, beverage, animal feed, and biofuels industries. Throughout the past century, the hybrid seed market in India has undergone remarkably significant changes. BT cotton seeds, hybrid pearl millet, hybrid maize, hybrid rice, hybrid sorghum, hybrid sunflower seeds, and hybrid fruit and vegetable seeds are among the most widely used hybrid seeds.

With the fast seed replacement rate and developing supply chain of hybrid seeds to the farmers as per the climate and soil type of a region has shown growing trend of the hybrid seeds market since 2010. Goldstein Research analyst forecast that the India hybrid seeds market is set to reach USD 6.9 billion by 2025, growing at a CAGR of 11.0 percent over the forecast period (2017-2025).

Here we have tabulated below the crop wise area suitable for seed production in India across the state.

Table 6: Major hybrid seed producing regions in India.

Sr. No.	Hybrid	Regions/Districts
a	Paddy	Kurnool (AP), Karimnagar (TS), Warangal (TS), Khammam (TS), Mahbubnagar (TS), Raichur (KA), Koppal (KA), Raipur (CH)
b	Maize	West Godavari (AP), Khammam (TS), Eastern Godavari (AP), Prakasam (AP), Kadapa (AP), Karimnagar (TS), Warangal (TS), Nizamabad (TS)
c	Bajra	Anantapur (AP), Kadapa (AP), Nizamabad (TS), Ballari (KA)
d	Mustard	Nizamabad (TS), Sabarkantha (GJ), Jalna (MH)
e	Cotton	Kurnool (AP), Mahbubnagar (TS), Koppal (KA), Sabarkantha (GJ), Attur (TN), Akola (MH)
f	Tomato	Koppal (KA), Haveri (KA), Davangeri (KA), Buldhana (MH), Aravalli (GJ)
g	Okra	Aravalli (GJ), Haveri (KA), Gadag (KA), Koppal (KA), Davanagere (KA), Buldhana (MH)
h	Chilli	Koppal (KA), Haveri (KA), Davangeri (KA), Buldhana (MH)
i	Watermelon	Koppal (KA), Tumukur (KA), Chikmangalore (KA), Davanagere (KA), Buldhana (MH), Aravalli (GJ)

The growth of the industry is anticipated to be driven by hybridization in the crops of corn, paddy, and vegetables. Furthermore, the great demand for hybrid seeds on the market and the good agro-climatic conditions for their seed production may entice new seed entrepreneurs to enter this industry.

Future agricultural output will be heavily reliant on the creation of hybrids in a variety of crops, supported by effective, affordable seed production technology. Without quality seed, investments in fertilizer, water, insecticides, and other inputs won't yield the intended returns (Lal, 2008).

D. Low Cropping Intensity

Although there is minimal possibility to enhance cultivable land, there are some options to do so by using a number of techniques. We must increase food production on a finite amount of land in order to meet the growing population's demand for food. Increasing cropping intensity will enable this. India has a cultivation intensity that is only 141 percent on average. More high-quality seed will be needed, especially of high-yielding, stress-tolerant, and shorter duration types, in order to boost cropping intensity even more.

E. Public Policy Support System

The seed policy in India has been a good indicator of the country's changing demands and market dynamics, from the Seed's Act of 1966 to the New Seed Bill. The process for exporting seeds has been streamlined to promote seed export in the interests of farmers. Except for seeds of wild varieties, germplasms, breeder seeds, and seeds that are on the prohibited list under the revised Export and Import Policy 2002-07, seeds of various crops have been placed under the Open General License (OGL).

With enactment of Protection of Plant Variety and Farmers Right Act (2001), the private sector's participation has increased in R & D for varieties particularly in Rice and wheat. It has also facilitated larger participation of production and supply of improved seed by the private sector. Since 2008 India become a member country of OECD Scheme which further helps in expanding our seed business in international market.

F. Export Oriented Production

India has a strong seed industry, a variety of agro-climatic conditions, knowledge of seed production, systems for managing seed quality, and the

infrastructure required to take advantage of this opportunity. The seed grown in India is capable of being exported to Asian nations like Bangladesh, Pakistan, Sri Lanka, Burma, Indonesia, and Malaysia as well as to African nations like Tanzania, Ghana, Ethiopia, Nigeria, Sudan, and Kenya. This will increase the demand for Indian-grown seeds on the global market. However, before travelling abroad, we should take the seed to areas of the country like the North Eastern States where the seed industry is essentially nonexistent.

Further diverse germplasm available in India due to more geographical diversity; also offer a huge opportunity to the young seed entrepreneur to rapidly develop the improved varieties companies purely for export.

Currently, our seed exports are less than ₹1,000 crores per annum. India definitely has a potential to capture a 10 per cent share which is \$1.4 billion or ₹10,000 crore by 2028. (The Hindu, 23 July 2020). Moreover, Necessary infrastructure facilities such as dry port is available near the major seed hub of India such as Bengaluru, Coimbatore, Hyderabad, Aurangabad, Ahmedabad, etc., is well equipped with warehouses suitable for seed storage, seed quality testing facilities recognized globally, seed export documentation and phytosanitary certification agencies, plant quarantine facilities and similar support mechanism.

G. Availability of Skilled Manpower

Technical expertise in seed production and quality assurance is required of those participating in the industry. Untapped skilled labour is accessible and ready to be motivated and involved in the seed business. A variety of entrepreneurship and skill development programmes are run by the Skill Council of India, ICAR, SAUs, KVK, and state government organisations to train unemployed young in the seed production industry.

Even many private seed companies train farmers directly before allowing them to produce seeds on their fields using planting supplies. This strategy has been successful in Telangana. Almost 2.5 lakh knowledgeable seed growers, spread across 1,500 communities in Telangana, produce 65 lakh quintals of seeds annually on three lakh acres. Because the state has similar geographic, climatic, and soil conditions to Kenya, Tanzania, Zambia, Nigeria, Egypt, and Sudan in Africa; Pakistan, Bangladesh, Myanmar, Nepal, Sri

Lanka, Philippines, and Thailand in Asia; and even some North American and European countries, the farmers can increase their income from seed production.

H. Custom Seed Production

Custom seed production provides a new avenue in expanding our seed business. A company located outside India gives production orders to an Indian seed company and supplies parent seed for production in India. The Indian company exports the production back to them. Currently, India is undertaking custom production in vegetable seeds. India can become a global leader in custom production of vegetables seeds for other countries, a position currently occupied by China.

I. Credit/Financial Support System

It was found that financial constraints were ranked first among all other challenges for majority of the seed dealers and business man (Kumar and Kumar, 2021). The government has launched a Central Sector Scheme namely, “Development and Strengthening of Infrastructure Facilities for Production and Distribution of Quality Seeds” from the year 2005-06. The main components are quality control arrangements on seeds, transport subsidy on movement of seeds to North-East and other hilly areas, establishment and maintenance of Seed Bank, Seed Village Scheme, assistance for creation of infrastructure facilities, assistance for boosting seed production in private sector, Human Resources Development, assistance for seed export, propagation of application of biotechnology in agriculture, promotion of use of hybrid seeds

The Government of India under various initiatives have provided the following credit support subsidies as a part over a period of time to strengthen the seed industry.

- a. Credit for schemes for certified seed distribution
- b. Subsidy for hybrid Rice seed production, full subsidy for minikilts, under NFSM
- c. Subsidies under seed village program
- d. Transport subsidies for seeds
- e. Credit linked back-ended capital subsidy at the rate of 25 percent of the project cost subject to a maximum limit of Rs.25.00 lakh per unit on seed infrastructure development

J. Attractive Investment Destination

Recently Seed Industry has become very attractive for the investors. Indian investors are eagerly looking for many IPOs from Seed Industry. As the Govt. allows FDI in selected agri- sectors including seed production. As per extant policy, FDI is permitted up to 100% under the automatic route in development and production of seeds and planting material subject to certain conditions as mentioned in “Circular No. 1 of 2011: Consolidated FDI Policy” issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Government of India. The permission for FDI up to 100 percent would encourage infusion of foreign investment into the seed sector and would also facilitate indigenous seed companies for strengthening of Research and Development activities for development of Seeds of better varieties. Further, an increasing demand for food, the shift towards high-yielding hybrids and a likely favourable policy environment are why investors are looking at the agriculture sector. They firmly believe that a shift in favour of hybrids would result in multi-fold increase in seed sales vis a vis investment in this sector.

K. Demand for Bio fortified food

Prevailing importance of micronutrients in human diet is a matter of utmost concern due to increase ratio of undernourished population (Balkrishna *et al.*, 2021). Bio-fortification can be defined as the process to enhance nutritional value of crop by conventional or genetic alternation. Primary target in development of biologically fortified crops is to increase the bioavailable concentration of micronutrients, such as iron, iodine, zinc, calcium, selenium, folic acid, copper, molybdenum, cobalt, nickel, manganese, vitamin content, essential amino acids, fatty acids and elevated anti-oxidant concentration in edible portion of the crops (Prasad and Shivay 2020). The demand for high-quality food will rise in response to rising consumer awareness of food's nutritional value and the number of health-conscious consumers. The key growth driver for progressively expanding seed demand has been increasing quality specific demand for food and feed. Here a list of crop kinds with unique nutritional characteristics is tabulated below

Table 7: Nutrient rich varieties developed in India.

Sr. No.	Crop	Quality traits	Varieties
a.	Maize	Provit-A, Protein (lysine and tryptophan)	Pusa Vivek, QPM9
		Protein (Lysine & Tryptophan)	Protima, Ratan, Shaktiman
b.	Wheat	Fe	HD3171
		Zn	Zinc Shakti
		Zn & Fe	WB02
		Protein	HD3226
c.	Rice	Fe	IR 72
		Zn	CR Dhan 45
		Protein	CR Dhan 310
d.	Mustard	Low rusic acid	Pusa Mustard 30
		Low erucic acid & low glucosinolate	Pusa Double Zero Mustard 31
e.	Cauliflower	Beta carotene	Pusa Beta Kesari 1
f.	Pearl millet	Zn & Fe	HHB 299

(Yadava *et al.*, 2017)

This bio fortified cultivars are extremely important for the country's nutritional security. As a result, developing bio fortified cultivars is a growing commercial niche for new seed entrepreneurs

CONCLUSIONS

Seed sector is emerging as a new destination for young entrepreneur in India mainly due many inherent factors such as diverse agro-climatic conditions, vast germplasm base, low seed replacement rate, huge demand of hybrid seed, availability young, skilled and cheap workforce favourable for initiating the seed business. The Indian seed industry is highly dynamic, innovative, internationally competitive, and diverse, that further allowing new seed entrepreneurs to flourish. Huge domestic market still remains untapped due to use of farmers saved seed and also vast potential of growth in export market. For new seed entrepreneurs, the hybrid seed business is currently the most lucrative market area.

FUTURE SCOPE

This paper will help the young seed entrepreneur and policy makers to understand the present seed business scenario and its future prospects at national and international level based on its dynamic and innovative nature.

Acknowledgement. Authors are highly thankful to all the kind of data sources such as NSAI, OECD, ISF, Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India and many others. They also acknowledge the help and support provided by the Bihar Agricultural University, Sabour (Bhagalpur) and Bidhan Chandra Agricultural University, Mohanpur (West Bengal).

Conflict of Interest: None.

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How to cite this article: Mukesh Kumar and Prabir Chakraborti (2024). Prospects of Seed Entrepreneurship in India. *Biological Forum – An International Journal*, 16(2): 25-31.