

India  
seeds



**Buy**

Advanta India  
Kaveri Seeds

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# Seed industry

## Sow now to reap long-term benefits

The demand for agricultural commodities will increase due to population growth and higher input demand from the biodiesel and ethanol industries. We expect a declining area of land under cultivation and improving farm income to drive greater adoption of quality agricultural inputs like high-yield/hybrid seeds. We see sustained demand benefiting the seed industry and initiate coverage on Advanta India and Kaveri Seeds with Buy ratings.

- **Increasing minimum support prices to boost demand for hybrid seeds**  
The CAGR for minimum support prices (MSP) of agricultural crops from 1985-86 to 2006-07 was 6–7%, and with demand for commodities increasing, these prices should continue to head north at a higher rate. The government hiked the MSP for the *kharif* season of 2008–09 by 29–94%, which is unprecedented. MSP increases should make farming more lucrative and increase the use of quality agricultural inputs like high-yield/hybrid seeds.
- **Farm productivity needs will drive usage of high-yield/hybrid seeds**  
India's population should see a 1.3% CAGR during 2005–20 to reach 1,331 million, further increasing food grain demand. However, the area under food grain cultivation has been stagnant over the past four decades. With pressure on land increasing due to urbanisation and industrialisation, the area will either decline or be constant. We believe increasing productivity via better farming practices such as use of high-yield/hybrid seeds (which can give higher yield of 15-30%) is the way to raise production.
- **High growth potential due to low penetration of hybrid seeds**  
The size of the Indian seed market is US\$1,500 million and growing at 12–13%. Only 25% of farmers use high-yield/hybrid seeds and we see high growth potential. Increased income in the hands of farmers due to higher agricultural output prices along with better awareness of the benefits of hybrid seeds should result in increased and sustained seed demand.

**Figure 1: Initiating coverage**

Company	Rating	CMP (Rs)	Target price (Rs)
Advanta India	Buy	490	625
Kaveri Seeds	Buy	134	210

Source: Bloomberg, Reliance Equities research.

Note: Prices as at close of business 2 December 2008.

## Agriculture

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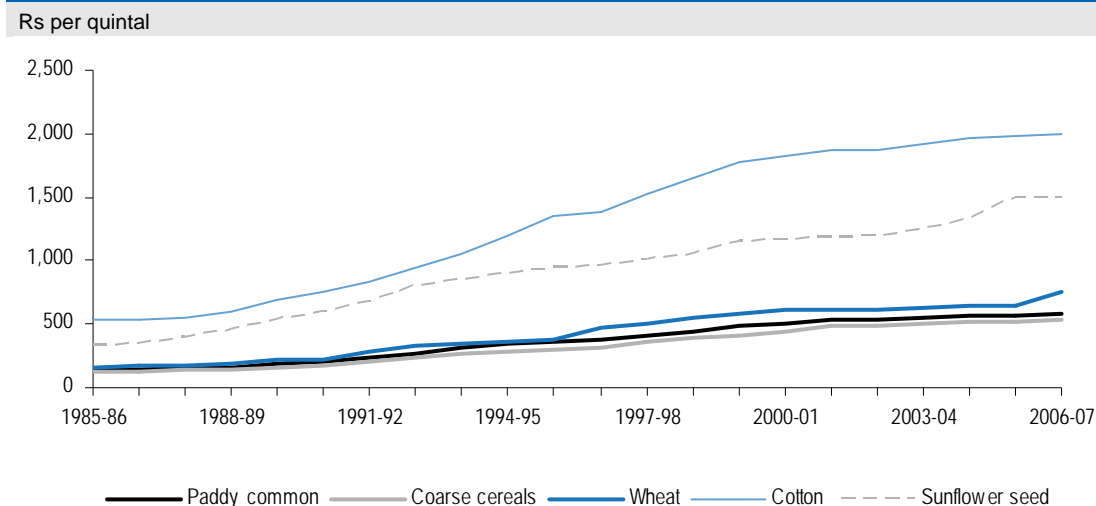
## Key demand drivers

Globally, food grain requirement will rise 50% by 2030 as per the United Nations, and with area under cultivation stagnant/declining, raising productivity will be a major focus area. Productivity increases will be driven by adoption of better farm practices along with increased usage of high performance inputs. Seeds are a major input and should be a significant beneficiary of rising agricultural commodity demand.

### Increasing minimum support prices (MSPs)

The government has been increasing the MSP (this is the minimum price at which it buys the produce from farmers) of various agricultural commodities due to high demand. MSPs have increased at a CAGR of 6-7% from 1985-86 to 2006-07 and have never been reduced. MSPs are very important as they act as reference prices for farmers and usually form a floor price for the wholesale market.

**Figure 2: MSPs from 1985-86 to 2006-07**



Source: Ministry of Agriculture, Reliance Equities research.

The demand for agricultural commodities will continue to rise and as the area under cultivation in the country will remain more or less the same, the government will likely have to go on raising MSPs to provide incentives to farmers to produce more and more so that demand is met. For example, during the 2008 *kharif* season, the government declared unprecedented MSP increases of 29-94% across agricultural commodities to increase supply and, thus, meet demand.

Higher MSPs make farming more lucrative for farmers. Higher incomes, with increased awareness, should encourage farmers to spend more on quality inputs, such as seeds, fertilisers, etc.

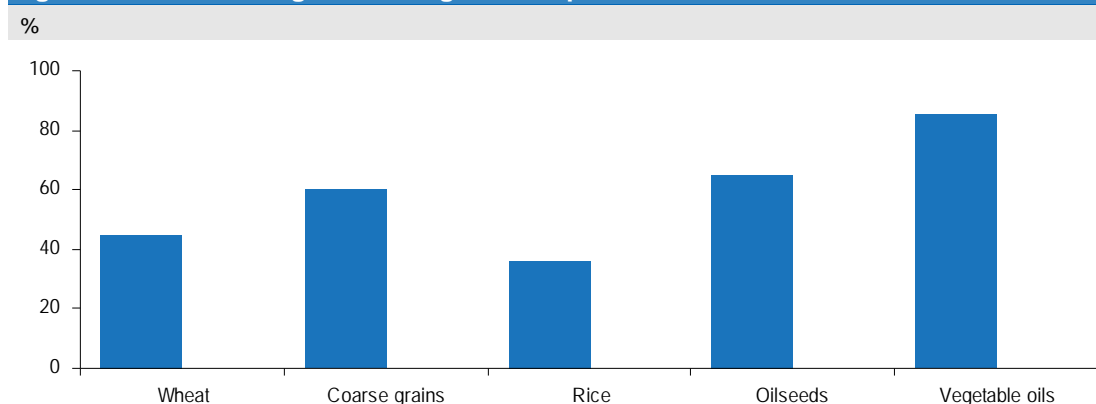


## Higher prices of agricultural commodities

The prices of agricultural commodities were near record levels in 2008 due to high demand and low inventories. They have come down currently but are still higher than their historical averages.

Average prices of agricultural commodities are likely to stay high during 2008–17, according to a recent OECD–FAO report on the world agriculture outlook for these years. The report forecasts that compared to nominal average prices in 1998–2007, prices in 2008–17 will be higher by 40–60% in the case of wheat and maize, more than 60% for oilseeds, and over 80% for vegetable oil seeds.

**Figure 3: Global average nominal growth in prices for 2008–17**



Source: OECD-FAO, Reliance Equities research.

Higher prices of agriculture commodities are good for the agriculture inputs industry, as more income in the hands of farmers results in increased use of better quality inputs.

### Why will demand for commodities continue to rise?

- **Population growth:** India's population grew at 1.9% p.a. during 1990–2007 while food grain production grew at only 1.2%. In spite of this, the country saw no food shortage because food grain production during 1950–51 and 2006–07 grew at 2.5% compared with population growth of 2.1%. However, if the trends in the last two decades continue, then India will likely have to import to meet some of its food grain requirements.

The Indian population will see a CAGR of 1.3% during 2005–20 to reach 1,331 million, according to the Indian Council for Research on International Economic Relations (ICRIER). The total demand for food grains will be 215.7 million tonnes of cereals and 27.2 million tonnes of pulses by 2020, assuming the GDP grows at a rate of 7%.

**Figure 4: India—Projected food grain requirements**

Units as shown										
Group	GDP (%)	Domestic demand (million metric tonnes)					Annual growth rate (%)			
		Base yr	2000	2005	2010	2015	2020	2000-10	2010-20	2000-20
Cereals	6		142.2	155.5	172.4	190.0	208.6	2.0	1.9	2.0
	7		142.7	157.1	175.5	195.0	215.7	2.1	2.1	2.1
	8		143.7	159.6	179.8	202.1	225.9	2.3	2.3	2.3
Pulses	6		13.5	15.4	18.0	21.1	24.8	2.9	3.3	3.1
	7		13.6	15.8	18.8	22.6	27.2	3.3	3.7	3.6
	8		13.8	16.2	19.8	24.3	29.9	3.7	4.2	4.0
Veg. and fruits	6		76.5	89.6	109.0	133.1	163.1	3.6	4.1	3.9
	7		76.9	92.2	115.4	145.0	182.9	4.2	4.7	4.5
	8		77.3	94.5	121.4	156.4	202.2	4.6	5.2	5.0
Milk	6		66.0	82.1	107.9	142.9	191.3	5.0	5.9	5.5
	7		66.7	86.0	118.3	164.1	229.9	5.9	3.4	6.4
	8		67.2	89.6	128.3	185.2	270.2	6.7	7.7	7.3
Edible oil	6		9.1	10.4	12.3	14.5	17.2	3.1	3.4	3.3
	7		9.1	10.6	12.8	15.5	18.8	3.5	3.9	3.7
	8		9.2	10.8	13.3	16.4	20.3	3.8	4.3	4.1

Source: Indian Council for Research on International Economic Relations, Reliance Equities research.

In order to meet the demand for food grains and other crops, productivity has to be improved by using quality inputs, as the area under cultivation is more or less fixed. One of the major beneficiaries of increased use of quality agricultural inputs should be the high-yield/hybrid seed industry.

- **Increasing per capita income resulting in a shift in consumption patterns:** India's GDP is expected to grow rapidly, resulting in increased per capita income. Generally, as per capita income increases, the population's consumption pattern shifts towards high-protein products, such as milk, fish, vegetables, edible oil, etc.

The expenditure elasticity for major food crops is low, as per a study done by the ICRIER. However, elasticity is high in the case of products such as meat, fish and eggs, milk, edible oil, vegetables and fruits.

**Figure 5: Expenditure elasticity of demand for major food crops in India, 1999**

Group	Rural	Urban	All-India
Cereals	0.2	0.1	0.2
Pulses	0.6	0.6	0.6
Vegetables and fruits	0.8	0.7	0.7
Milk	1.3	1.2	1.2
Edible oil	0.6	0.5	0.6
Meat, fish and egg	1.4	1.3	1.3

Source: ICRIER, Reliance Equities research.

The per capita consumption of cereals, pulses, vegetables and fruits in India is much lower than global standards, due to lack of availability and higher prices. In fact, consumption has been flat over the past few decades as growth in output has been lower than growth in consumption.

**Figure 6: Per capita consumption**

Units as shown			
Period	Cereals (grams)	Pulses (grams)	Food grains (grams)
1971-75	393	44	437
1981-85	417	39	456
1991-95	445	37	482
2001-05	414	32	446

Source: Standing Committee Report on Agriculture, Reliance Equities research.

With rising incomes, demand for commodities with high protein should increase, resulting in increased use of hybrid seeds for cereals, vegetables, etc. Also, the low per capita consumption of cereals, pulses, etc., provides ample opportunity for growth in these commodities.

- **Export markets to grow:** The Indian seed industry has a vast collection of germplasm and, given its developing research and development capabilities, it can become an export hub for seeds across various geographies and gain from the strong demand for agricultural products.

India's neighbours have little access to high-yield/hybrid seeds but have a significant population engaged in agriculture, thus offering export opportunities. Also, Indian high yield/hybrids seeds have a large potential market in Africa, where extensive areas of land are under cultivation of farm-saved seeds.

- **Biofuel production:** The production of fuel ethanol tripled during 2000-07, with the USA and Brazil accounting for the majority of this growth. Biodiesel output witnessed a higher growth over the same period, from less than one billion litres to almost 11 billion litres. An OECD-FAO report projects global ethanol production to increase to 125 billion litres in 2017, i.e., twice the quantity produced in 2007. Global biodiesel production will grow to 24 billion litres by 2017 despite the fact that world biodiesel prices are expected to remain higher than the production cost of fossil diesel.

Due to higher demand for biofuel, agricultural commodities that are used to make them (such as corn, wheat, sorghum and sugarcane), will continue to grow at a much higher rate than we have seen historically. The high demand will ensure that the prices of these crops do not fall significantly.

We believe the use of hybrid/high-yield seeds will increase to meet the higher demand for agricultural commodities and it will be a big demand driver for the seed industry.

## Enablers of seed demand

### Area under irrigation to increase, thus benefiting the agricultural inputs industry

In India, about 102.8 million hectares of total irrigation potential was created by 2006–07. The government has decided to increase its focus on irrigation and plans to spend about Rs 2,080 billion, creating an additional 15–16 million hectares of irrigation potential during the Eleventh Five Year Plan (2007–12).

**Figure 7: Irrigation potential created in India**

Million hectares	1992-97	1997-2002	2002-07
Cumulative potential created			
Major and medium	33	37.1	42.4
Minor	53.3	56.9	60.4
Total	86.3	94	102.8

Source: Economic Survey of India, Reliance Equities research.

Irrigation is key to agriculture and, with the area of land under irrigation increasing, the farmer will have an assurance against crop failure due to a bad monsoon. With availability of irrigation facilities, farmers will use high-quality inputs in order to maximise output from their land, thus benefiting players in the agriculture input sector.

### Increased government spending on agriculture sector

The total planned outlay for agriculture and allied activities by the government for the Eleventh Five-Year Plan is Rs 1,300 billion, which is 2.25 times more than the Tenth Plan. The high spend on this sector will benefit players in this industry and a key beneficiary will be the seed industry.

In order to boost the industry, the government has given an income-tax benefit of 150% reduction while calculating taxable income for expenses incurred in research and development done by seed companies from FY09 (March year-end). This benefit should increase R&D spend, further improving the quality of seeds and making their use more and more profitable for farmers.

### Increased awareness of high-yield/hybrid seeds

The use of high-yield/hybrid seeds has grown over the past few years due to higher agricultural produce prices. Also, the benefits of high-yield varieties/hybrid seeds have been made known to farmers by private seed companies and by government institutions/NGOs which has resulted in their increasing use.

With the prices of agricultural commodities expected to continue moving northwards, we expect increased demand for high-yield/hybrid seeds.



**Figure 8: Production and distribution of seeds**

'000 quintals	2000-01	2004-05	2005-06	2006-07
Breeder seeds	43	66	69	74
Foundation seeds	591	690	740	790
Distribution of quality seeds	8,627	11,310	12,675	15,501

Source: Economic Survey of India, Reliance Equities research.

## Negatives that offer opportunities

### Flat yields of agricultural crops

Indian crop yields have shown modest growth over the past few decades due to numerous reasons; one of them is low use of quality inputs.

Agricultural production grew 78% and yield improved 58% during the Green Revolution. This growth in yield was primarily due to the use of better inputs like high-yield seeds and made the country move towards self-sufficiency in food grains from being an importer. However, after the Green Revolution, little has been done to improve crop productivity.

We believe India needs another Green Revolution led by improvement in productivity in order to ensure its food security. One of the key inputs for this is greater use of hybrid/high-yield seeds.

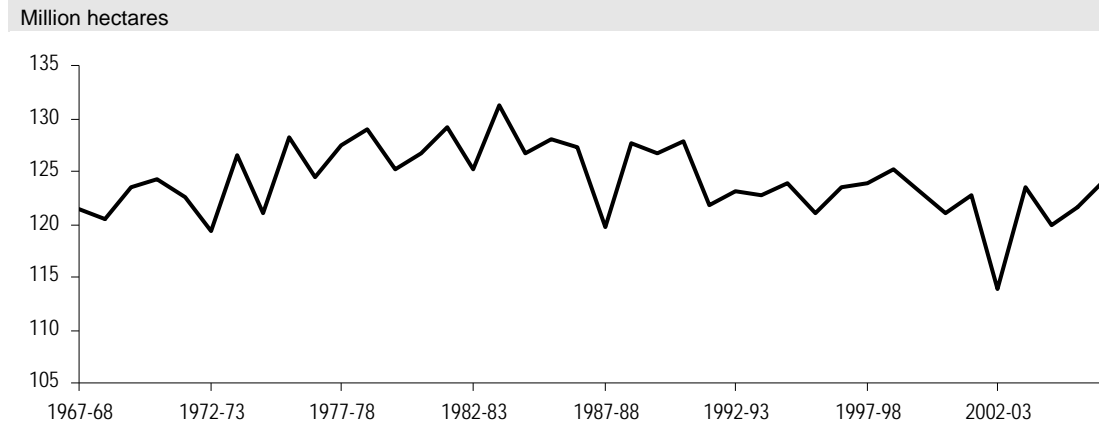
Hybrid seeds/high-yield varieties can give additional yields of 15–30%, compared with conventional varieties across crops. For example, as per the Seed Association of India, hybrid rice is cultivated in about 3% of the total rice-growing area, and if this is increased to 25%, then there will be additional rice output of 25 million tonnes (i.e., nearly 26% of the total expected production of 96.4 million tonnes in FY09). India needs an additional 2 million tonnes of rice every year to feed its growing population and to maintain its emergency stock. We believe this can be easily achieved with the use of hybrid rice.

Another reason for the low crop yields in India is small land holdings (60% of farmers have less than a one-hectare holding), which limits the use of mechanisation. The only way to enhance yields from these small land holdings is to use inputs such as hybrid/high-yield seeds and micronutrients.

### Decline/stagnation in area cropped

The area of land under cultivation for food grains in India has been nearly stagnant over the past several decades. The total area under food grain cultivation was 124.3 million hectares in 1970–71 and 123.7 million hectares in 2006–07. In the past four decades, the total area under food grain cultivation has been in the 114–131 million hectares range. The reason for this stagnation is a growing population and, therefore, increasing demand for housing. Also, urbanisation and industrialisation are bringing pressure on land and thus ensuring that the area under cultivation is stagnant.

**Figure 9: Area under food grain cultivation from 1967 to 2007**



Source: Ministry of Agriculture, Reliance Equities research.

The total area under food grain cultivation cannot be increased significantly, while the demand for food grains will keep increasing. So, the only way to meet this gap is to increase productivity through use of higher-yield seeds, better irrigation facilities, fertilisers and micronutrients.

The setting up of irrigation systems takes substantial time but high-yield/hybrid seeds, fertilisers and micronutrients are readily available. Therefore, these segments would be immediate beneficiaries of rising agricultural output demand.

## Global seed industry

The global commercial domestic seed market is estimated to be about US\$36.5 billion (source: International Seed Federation) and the major seeds markets are USA, China, France and Brazil.

**Figure 10: Major seed markets, 2007**

US\$ million			
Country	Domestic market	Country	Domestic market
USA	8,500	Argentina	950
China	4,000	Canada	550
France	2,150	Russian Federation	500
Brazil	2,000	Spain	450
India	1,500	Australia	400
Germany	1,500	Korea	400
Italy	1,000	UK	400

Source: International Seed Federation, Reliance Equities research.

According to Global Industry Analyst Inc (GIA) the world seed market will have a CAGR of 4.27% in 2001–2010 while the Asia-Pacific region should see a CAGR of 4.85%.

The seed market is primarily a domestic market and international trade in it is very limited (about 15%), as seeds have to be customised for every location of use. Also, the regulatory environment for the import of seeds is strict in most countries.

Historically, the global seed industry was fragmented and catered to by many local players. However, due to increased focus on research and development, which involves considerable expense, the industry has seen consolidation. The top 10 global companies account for over 50% of total sales.

The major global players have made acquisitions across geographies and also invested heavily in R&D to create an edge over their peers. The dominant global seed market players include Pioneer, Monsanto, Syngenta, Limagrain, KWS AG and Bayer CropScience.

Most companies in the seed industry were primarily into agrochemicals and diversified into seeds, which has now become an important part of their portfolios.

**Figure 11: Major global seed industry players**

Company	Seed sales (2007)	Major crops	Acquisition	Comments
Monsanto	US\$4,964m	Cotton, corn, oilseeds and vegetables	12 acquisitions in 2006 at US\$133m	Monsanto is the largest player in the global seed market and spends about 10% of sales on R&D. It is a pioneer in Bt gene for crops such as cotton and corn
DuPont/Pioneer Hi-Bred International	US\$3,352m	Corn, soyabean, sunflower, canola, rice, sorghum, alfalfa and wheat	Pioneer was acquired by DuPont in 1997 and was made a wholly-owned subsidiary in 1999	Major player in the US and present in over 70 countries; has developed GM seeds of corn and soybean
Syngenta	US\$2,018m	Corn, soyabean, vegetable, flower seeds, sunflower oilrape seeds	A number of acquisitions over the years, such as Dia-Engei, the Japanese leader in producing and marketing of seedlings of flowering plants and vegetables	It is headquartered in Switzerland and has a presence in over 90 countries
Limagrain	€795.5m	Corn, wheat, barley, sunflower, soyabean, vegetable seeds	The company acquired Advanta Europe and majority control of Kyowa in Japan in 2006. In 2007, it acquired Ceekay, a vegetable research company in India	Limagrain is an agricultural cooperative group headquartered in France and a major player in European markets
Vilmorin & Cie	US\$878m	Corn, wheat, rapeseed, sunflower and soyabean	NA	Largest vegetable and ornamental seed player in Europe with a limited presence in Asian markets
KWS SAAT AG	€537.9m	Sugarbeet, corn and cereals, including hybrid rye, wheat, barley and rapeseed	NA	It is headquartered in Germany and spent €27.2m on R&D. It has developed GM sugarbeet and corn seeds
Bayer CropScience	€382m	Vegetable seeds, cotton and hybrid rice	NA	Major global player in the vegetable seeds market; has also developed GM seeds for cotton

Source: Company data, Reliance Equities research.

## An overview of the Indian seed industry

India is the fifth-largest seed market in the world with an estimated size of about US\$1,500 million and growing at 12–13% annually. Governmental agencies only catered to the seed market until the easing of regulations and implementation of a new seed policy in 1988, after which the private-sector seed companies started to play a major role in seed development and marketing.

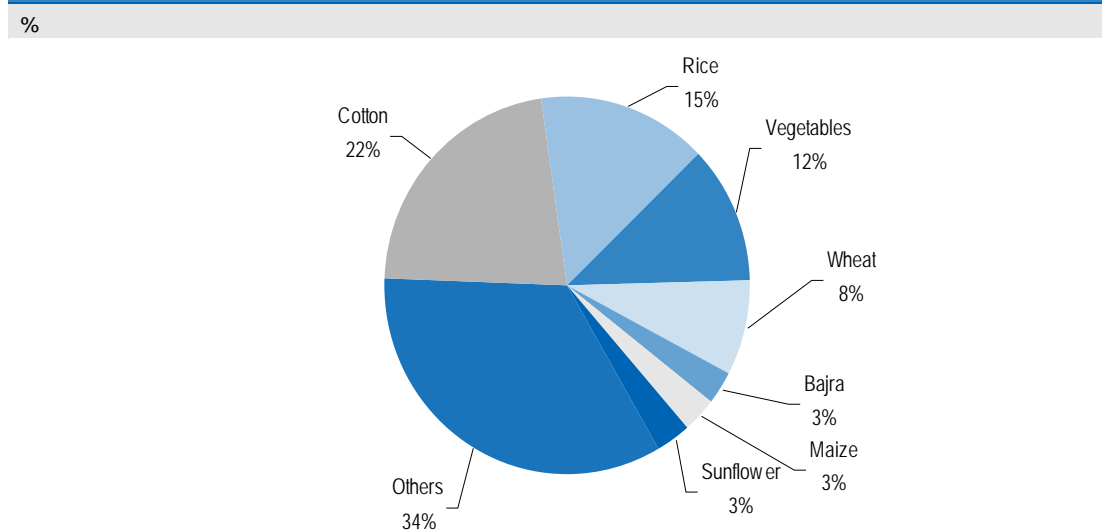
Today, there are 14 state seed corporations (SSCs), two national level corporations (National Seed Corporation and State Farm Corporation of India) and around 200–500 private-sector companies which cater to the domestic seed requirements.

The public-sector companies are mostly confined to certified seeds of high-volume, low-value products such as pulses, wheat and soyabean, while the private sector is focused on high-value hybrid seeds such as cotton, cereals and vegetables.

R&D in public-sector companies is dependent on public research institutions that are under the aegis of the Indian Council of Agricultural Research (ICAR) and state agricultural universities (SAUs).

About 75% of farmers use farm-saved seeds and the balance use commercial seeds. The private sector accounts for about 70% of the total commercial seeds turnover.

**Figure 12: Seed sales in value, 2005**



Source: Industry, Reliance Equities research.

Private seed companies in India are highly fragmented and are both organised and unorganised. There are no firm estimates of their numbers but unofficial estimates vary between 200 and 500. Private companies give high importance to R&D, investing 5–10% of their turnover in such activities. Unlike the public sector, where research is separate from seed production and marketing, these functions are integrated in private firms. The private sector has been focusing on development of hybrids/high-yield varieties, as these are of a higher value and offer better margins.



The regulatory environment in India allows mass selling of seeds (that are not genetically modified) at market determined prices. Genetically modified (GM) seeds—except for cotton—are disallowed for cultivation. However, research on genetically modified seeds is under way in many public-sector institutions. The crops being researched include rice, wheat, potato, banana, mustard, coffee, tomato, tobacco, chickpea, pigeon pea, eggplant, cabbage, rapeseed, cauliflower, melon, citrus fruit, *mung* bean (black gram) and peanuts (groundnuts).

## Vegetable seeds: Export and domestic growth potential

We believe the Indian seed market, particularly vegetable seeds, offers many opportunities in both domestic as well as export markets and, thus, we have covered this section in detail in our report.

India is the second-largest vegetable producer (11% production share in the world) after China. In 2005–06, total vegetable production in the country was 109 million tonnes and the total area under production was 7.16 million hectares.

The vegetables market has been growing consistently, as vegetables are an important source of nutrition. The government expects the total vegetable seed market will grow to 140 million tonnes by 2012 on the back of growing population and rising incomes. Industry players estimate the current vegetable seed market at Rs 6,000 million.

The growing vegetables market has resulted in higher demand for vegetable seeds. Total demand for vegetable seeds will be 62,695 million tonnes by 2011–12, according to a Planning Commission report.

**Figure 13: Tentative requirements of vegetable seeds for the Eleventh Five-Year Plan**

Million tonnes					
Crops	2007-08	2008-09	2009-10	2010-11	2011-12
Brinjal	297.3	309.2	321.5	334.4	347.8
Cabbage	2,018.0	2,098.7	2,182.7	2,270.0	2,360.8
Cauliflower	160.7	167.2	173.8	180.8	188.0
Okra	6,018.6	6,259.4	6,509.7	6,770.1	7,040.9
Peas	36,895.8	38,371.7	39,906.5	41,502.8	43,162.9
Onion	7,981.5	8,300.7	8,632.8	8,978.1	9,337.2
Tomato	220.4	229.2	238.4	247.9	257.8
<b>Total</b>	<b>53,592.3</b>	<b>55,736.1</b>	<b>57,965.4</b>	<b>60,284.1</b>	<b>62,695.4</b>

Source: Planning Commission of India, Reliance Equities research.

India has some advantages when it comes to vegetable seed production like varied agro-climatic conditions and availability of skilled labour. These have resulted in the exports of seeds showing a CAGR of 35% from 2004–05 to 2006–07 to reach Rs 1,214.6 million. We believe the Indian subcontinent and Southeast Asian countries offer significant export opportunities because of their high demand and limited supply.

**Figure 14: Major crops in India from a commercial seeds perspective**

Million hectares			
Product	Area under cultivation, 2006-07	Major cultivation areas	Comments
Cotton	9.1	Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Punjab and Tamil Nadu	India is the second-largest producer (18.4% of global production). Only crop where GM seeds are allowed. Nearly 70% of the area cultivated uses GM seeds
Corn	7.77	Andhra Pradesh, Karnataka, Bihar, Maharashtra and Uttar Pradesh	Total production in 2006-07 was 13.85m tonnes; has seen increased demand due to its growing usage in areas such as ethanol
Sunflower	2	Northern Karnataka, Marathwada and Rayalseema	Used for various purposes like vegetable oil, margarine and also for industrial purposes
Sorghum	8.7	Maharashtra, Madhya Pradesh, Tamil Nadu and Karnataka	Total production was 7.2m tonnes in 2006-07; it is now also being cultivated as a feedstock for ethanol
Pearl millet	10.8	Rajasthan, Uttar Pradesh, Gujarat, Haryana and Maharashtra	In 2006-07, the total production was 9.1m tonnes. The production of pearl millet is highly dependent on the monsoons as it is primarily rainfed
Rice	43.7	Andhra Pradesh, Tamil Nadu, Karnataka, West Bengal and Uttar Pradesh	Total production was 92.76m tonnes in 2006-07. Increasing efforts to introduce hybrid seeds here, as this market predominantly uses farm-saved seeds
Vegetables	7.16*	Cultivation is done across the country, but some of the important vegetable producing states are West Bengal, Tamil Nadu, Uttar Pradesh and Bihar	India is one of the biggest producers of vegetables in the world and the total production of vegetables in 2005-06 was 109m MT. It is seeing increased demand from domestic markets
Mustard and rapeseed	6.33	Uttar Pradesh, Rajasthan, Madhya Pradesh, West Bengal, Punjab and Haryana	Total production was 7.1m tonnes in 2006-07 and these seeds are grown for their high oil content

Source: Reliance Equities research.

Note: \*2005-06 data.

## Who are the major players?

Both domestic and multinationals operate in the Indian seed industry. Some of the MNCs have standalone operations while others have tied up with domestic players.

Monsanto, Bayer CropScience and Syngenta are among the prominent MNCs to have set up their operations in India. They have launched a variety of hybrids across many commercial crops and have built up a significant domestic presence.

The major domestic private-sector seed companies are Mahyco; Nuziveedu; Namdhari Seeds; Indo-American Seeds; Rasi Seeds; Ankur Seeds; Nath Seeds; Advanta India; JK Agri Genetics; and Kaveri Seeds. Most of these are privately-held, family-run companies.

The listed players with significant turnovers from seeds are Monsanto India (MCHM IN, market cap: US\$188 million); Advanta India (ADV IN, market cap: US\$165 million); Kaveri Seeds (KSCLIN, market cap: US\$37 million) and JK Agri Genetics (JKAGRI IN, market cap: US\$11.5 million).

Over the past two decades, the domestic private-sector seed companies have collected germplasm and also built up their R&D capabilities. Some of these have realised the importance of R&D and now spend about 5–10% of their sales on it. These players have developed many hybrids based on the needs of the farmers and have been able to gain significant market shares.

Some of the private-sector seed companies in India are at inflexion point. These companies have attained some scale (US\$10–15 million), invested substantially in R&D, built up a large collection of germplasm and set up a strong distribution network. They have built a comprehensive product portfolio with a presence across commercial crops and now seem well positioned to capitalise from the increasing domestic demand for high-yield/hybrid seeds.

The domestic seed companies have focussed on developing hybrids for commercial crops such as sorghum, maize, pearl millet, cotton and vegetables. This has been a focus segment, as these seeds have higher margins compared with coarse cereals such as wheat and rice.

Domestic private-sector seed companies have also launched hybrid GM cotton seeds by licensing the gene from the developers and then developing their own hybrids. The gene developed by Monsanto (sold by Monsanto-Mahyco) has captured the market. Other significant players who have licensed gene technology for cotton are JK Agri Genetics Ltd and Nath Seeds.

The private-sector companies are now focussing on the hybrid rice market as the yield in this crop is low and it offers a big potential market, given that it constitutes a major proportion of the total area under cultivation.

**Figure 15: Major players in the country and their crop portfolios**

	Cotton	Sorghum	Maize	Sunflower	Pearl millet	Vegetables	Paddy
Nuziveedu Seeds	✓	✓	✓	✓	✓	✓	✓
Syngenta			✓	✓	✓	✓	✓
Monsanto India			✓	✓			
Nath Seeds	✓	✓	✓	✓	✓	✓	✓
Ankur Seeds	✓	✓	✓	✓	✓	✓	✓
Rasi seeds	✓		✓	✓	✓	✓	✓
Pro Agro	✓					✓	✓
Mahyco	✓	✓	✓	✓	✓	✓	✓
Advanta India	✓	✓	✓	✓	✓	✓	✓
Kaveri Seeds	✓	✓	✓	✓	✓	✓	✓
Indo-American Hybrid	✓	✓	✓	✓		✓	✓
JK Agri Genetics	✓	✓	✓	✓	✓	✓	✓

Source: Company data.

We initiate coverage on Advanta India and Kaveri Seeds (*please see the respective company sections in this report*). We ignore Monsanto India for now, as the company has other businesses besides seeds that contribute significantly to its turnover.

## Key differentiators in the seed industry

**Germplasm:** The genetic resources of an organism are collectively called germplasm. This is the key ingredient required for developing a variety of seeds. Access to quality germplasm, and its collection and maintenance, require significant investment and companies/institutions which possess germplasm have an edge over their peers. Also, a large collection of quality germplasm helps the company have a continuous product pipeline.

**Technology:** It is required to keep developing products that suit the changing disease profiles, climatic conditions, etc. The consistent performance of a parental line over the product lifecycle can be ensured by using proper technology and thus ensuring brand loyalty which helps easy introduction of new seeds.

**Access to seed growers:** It is important for the seed breeder to have a trusted grower base that will grow the foundation seed for commercial cultivation in the requisite manner. This trust is built over many years. Also, having a trusted farmer base helps the seed owner keep his costs of production under control by training these farmers. Having access to the right set of growers ensures that the breeder has a sufficient quantity of seeds to meet market demand.

**Prudent working capital management:** The time period between growing commercial seed and selling it is that of a season. In order to meet the demand for the next season, inventory has to be maintained. A proper estimation of the demand in the coming season is essential as over-estimation may result in having high inventory as well as obsolescence of seed whereas a lower estimate may result in the company losing the market. Thus, proper estimation of demand can help in optimum working capital management

**Diverse product portfolio:** This helps the company to function across regions in different crops, reducing its dependence on a particular market. Also, a diverse product portfolio makes the company less prone to the vagaries of weather in a region. Farmers do rotate crops, and so a large product portfolio ensures the company has the seed in demand and, thus, retains the customer.

**Widespread distribution network:** The farming community is spread across the country and therefore, a widespread distribution network is a must. Furthermore, a strong distribution network can act as an information source on how the seed is performing and the improvements required to gain greater acceptability among farmers.



## Advanta India

### In an advantageous position

Buy

Rs 490

Target price: Rs 625

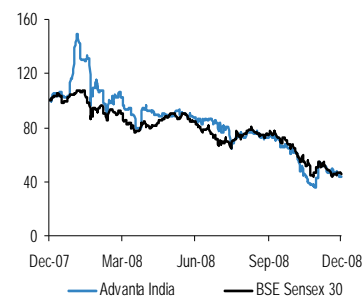
Bloomberg code	ADV IN
Reuters code	ADVI.BO
3m Avg. traded v alue (Rsm)	27.9
52-wk H/L (Rs)	1,740/311.9
Sensex	8739
Mcap (US\$m/Rsbn)	164.6/8.3

Shareholding (%)	09/08	06/08
Promoters	66.0	66.0
MFs, FIs, banks	8.3	4.5
FIIIs	18.1	21.8
Others	7.7	7.8

Stock performance (%)	1m	6m	1yr
Absolute	9.9	-45.4	-52.9
Rel. to Sensex	23.0	0.3	4.5

#### Share price performance

Base = 100



Source: Bloomberg, Capitaline.

Advanta India, one of India's major seed companies with a global presence, has a strong R&D team, comprehensive product portfolio and widespread distribution network. We believe these positives will work in its favour and help it capitalise on the growing hybrid/high-yield seed market. We initiate with a Buy rating on the stock and a DCF-based price target of Rs 625.

- Diversified portfolio and presence across geographies mitigate risk**  
 Advanta India has a diversified product portfolio of crops like sorghum, corn, vegetables and sunflower and a presence across many continents. Thus, it is not impacted by adverse developments in any particular crop or region and this provides revenue visibility .
- Top line and EBIDTA to have a CAGR of 28% and 30% during CY07–09E**  
 Advanta India has strengthened its crop portfolio in the past few years and now has a presence in all major commercial crops. New high-growth products such as sorghum and vegetables should result in a turnover CAGR of 28% to Rs 6,944 million during CY07–09E. Operating margin should also rise to 19.9 % by CY09 due to the addition of new high-margin crops in its portfolio, resulting in an operating profit CAGR of 30% during the same period
- Strong research and development**  
 Advanta India has a 100-member global R&D team with a large collection of quality germplasm that helps it develop superior seeds. The R&D team has also developed hybrid GM seeds in cotton, corn and canola, ensuring that Advanta India is ahead or on par with its peers, and thus gains market share.
- Valuation: Price target of Rs 625**  
 We initiate with a Buy and a 12-month price target of Rs 625 using DCF, assuming a 5% terminal growth rate and a WACC of 12.35%.

#### Figure 16: Key financials

Rs million, year-end Dec	CY06*	CY07	CY08E	CY09E
Net sales	2,915.9	4,237.3	5,986.3	6,944.5
Operating profit	560.0	818.8	1,155.4	1,381.9
Net profit	493.5	428.1	480.9	678.1
Adj net profit (excl extraordinary)	260.5	428.1	480.9	678.1
Adj EPS (Rs)	15.5	25.4	28.6	40.3
OPM (%)	19.2	19.3	19.3	19.9
Adj P/E (x)	31.7	19.3	17.2	12.2
EV/EBITDA (x)	13.1	13.3	9.5	7.7
P/sales (x)	2.8	1.9	1.4	1.2
ROCE (%)	9%	9%	10%	12%
ROE (%)	45%	15%	10%	13%

Source: Company data, Reliance Equities estimates. Note: \* Consolidated for nine months.

## Investment rationale

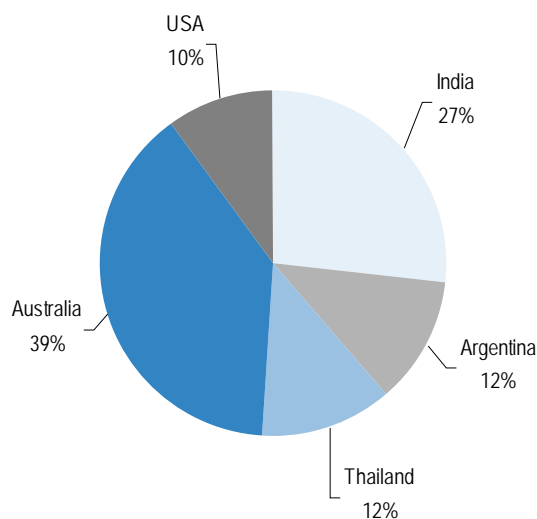
### Presence across geographies mitigates product risk

Advanta India has a presence across geographies with business operations in India, Australia, Thailand, Argentina and USA, and exports to a number of locations in Asia, the Middle East, Africa and Latin America. This diverse geographical spread has several advantages:

- Any adverse development in one or more of the locations from where it operates is unlikely to affect it significantly.
- The agriculture industry is seasonal in nature and revenues are thus skewed. However, with this spread and reach, Advanta India's revenue distribution is less lumpy.
- The company's presence across an array of crops and different geographies mitigates product risk and provides revenue visibility.

**Figure 17: Revenue break-up, CY08E**

%



Source: Reliance Equities estimates.

### Strong R&D resulting in newer and improved products

Advanta India has a highly qualified and experienced 100-member research and development (R&D) team in addition to tie-ups with a few organisations and institutions to carry out R&D activities. This strong R&D team has helped it to develop hybrids at a faster rate and of a higher quality than its peers by effectively using its proprietary germplasm.

The R&D team keeps developing hybrids across the product portfolio, helping the company meet the varied requirements of its customers across the globe. This has resulted in Advanta India steadily gaining market share in areas where it operates.

The R&D team has also developed genetically modified (GM) hybrid seeds. Advanta India has launched Bt cotton in India, Bt corn in Argentina and Round Up Ready (RR) Canola in Australia. The launch of GM seeds will result in Advanta India gaining market share in these countries, given that demand for such seeds is growing.

Advanta India spent over 6% of its revenues in 2007 on R&D and plans to spend another 10% of revenues on this in 2008 and in 2009. We believe that the company's strong R&D capabilities will help it to continuously develop new and improved seeds, and thus be a significant player in the seed industry.

### Well-diversified and defined product portfolio

Advanta India has a diversified product portfolio with a presence across major commercial crops like corn, sorghum, sunflower, vegetables and cotton. This broad-based portfolio ensures that it does not get adversely affected by negative developments in a particular crop. Also, it helps meet the various crop demands of a farmer across seasons.

The company's core crops are sorghum, sunflower, tropical corn and vegetables at a global level. However, at the regional level, Advanta India also focuses on rice, cotton, canola and mustard.

**Figure 18: Major crops and distribution network**

Country	Major crops	No. of distributors
India	Rice, cotton, corn, sunflower, sorghum and vegetables	300
Australia	Sorghum, corn, sunflower, canola, wheat	Major agricultural retailers and independent dealers
Argentina	Sunflower, sorghum, corn	Eight agents and over 250 distributors
Thailand	Sunflower, sorghum, corn	350 dealers and 550 sub-dealers
USA	Sorghum	Private labelling and more than 30 customers

Source: Company data, Reliance Equities research.

We believe the categorisation of core crops on both the global as well as regional level will help Advanta India to focus on these crops and grow its market share.

### Geographical spread helps it reach the mass market

A widespread distribution network is essential for reaching the entire potential market. Strong distribution is also key in making the farmer aware of the benefits of new hybrid seeds and to induce him to plant the seed on a limited scale to see the results.

If the hybrid seed gives the desired results, then in the next season it usually is in high demand on the back of word of mouth. Also, distributors push the seed more aggressively as its performance is proven.

The distribution network is very critical as it plays a dual role. Besides helping the company sell its hybrids, it also acts as a source of information about how its hybrids are faring against its competitors, the expected demand for a hybrid in the next season, etc.

Advanta India has built a strong distribution network in the geographies where it operates. It has over 300 distributors in India who cater to over 10,000 dealers across the country. In Argentina, it has over 250 distributors, and in Thailand over 350 dealers and 550 sub-

dealers. In Australia, it has tied up with major agricultural retailers and independent dealers for distribution of its products.

We believe the presence of a strong distribution network will enable Advanta India to reach the majority of the farming community and thus exploit the maximum potential of its hybrid seeds.

### Strategic acquisitions help expand the product portfolio

Advanta India's numerous strategic acquisitions over the past few years have helped it build a diversified product portfolio in a very limited time frame which would have otherwise taken many years to build.

#### Golden and Unicorn: Acquiring a base in the Indian vegetable seed market

Advanta India acquired the vegetable seed businesses of Golden Seeds and Unicorn Seeds in 2007 and 2008, respectively. These two acquisitions have given Advanta India a strong foothold in the growing vegetable seed market in India. Also, Advanta India's established global distribution network can be leveraged for its vegetable seed business, as the export market is a big opportunity. We believe that this business will become a big growth driver for the company.

#### Longreach: Bringing wheat into its fold

Advanta India acquired Longreach Plant Breeders (Longreach), a wheat seed breeding company based in Australia, in November 2007. The acquisition has given Advanta India access to breeding technology and evaluation systems, as well as proprietary traits and wheat germplasm. This will help it become a significant player in the wheat seed business. Wheat is a major agricultural commodity and Advanta India's presence in this segment could be a high revenue generator for it.

**Figure 19: Acquisitions to help Advanta India grow**

Company	Business	Geography
Golden Seeds	Vegetable seeds	India
Unicorn Seeds	Vegetable seeds	India
Longreach Plant Breeders	Wheat	Australia
Garrison & Townsend	Sorghum	USA
Limagrain	Sunflower	USA

Source: Company data, Reliance Equities research.

#### Garrison & Townsend: Strengthening its position in the sorghum industry

In March 2008, Garrison & Townsend (GT), USA, was acquired by Advanta India for US\$10.5 million. GT is into hybrid grain and forage sorghum research, production, conditioning marketing and selling.

GT has a significant presence in Mexico and USA, and its products are exported to many countries including Italy, Israel, Pakistan, Japan, and to Central and South America. This acquisition has not only given Advanta India a significant presence in the USA and Mexican markets but also added considerably to its sorghum product portfolio.

In USA, grain sorghum is the third most important cereal crop. Besides human and animal consumption, sorghum is used to produce ethanol. About 12% of total sorghum production in the USA was used in ethanol production in 2005-06.

By acquiring GT, Advanta India has strengthened its position in the sorghum industry in the USA and is now in a position to take advantage of the growing demand for ethanol. The company is also looking to expand into other markets. Recently, it supplied 25 metric tonnes of sorghum seeds to the Tatas to produce bio-ethanol in India.

#### **Limagrain: The sunflower seed boost**

Advanta India acquired the sunflower seed business of Limagrain in USA in 2008. This acquisition brings in the sunflower breeding programme as well as the marketing arm of Limagrain, USA, strengthening Advanta India's position in the global sunflower seed market. This also marks Advanta India's entry into the USA, a major market for sunflower seeds.

We believe the acquisitions made by Advanta India are strategic, enhancing the product portfolio and also expanding its geographical presence, contributing to making it an important player in the global seed industry.

### **SUNSAT: A key launch**

Advanta India has been developing sunflower hybrid seeds with a highly beneficiary oil profile for over a decade, and is now ready to launch these commercially in 2009. The oil extracted from these seeds will be rich in desirable saturated (S) and unsaturated (US) fatty acids, stearic acids and oleic acids. Furthermore, the triglyceride profile of these oils is enriched with the saturated-unsaturated-saturated (S-US-S) type which provides even greater value.

SUNSAT has been developed by combining plant breeding and molecular marker know-how, sunflower germplasm and third-party patents to which Advanta India has exclusive rights.

#### **Benefits of SUNSAT**

- SUNSAT has fatty acids that have the propensity to lower bad cholesterol and to be neutral to or increase good cholesterol.
- SUNSAT oil has increased viscosity/plasticity and can be directly used for margarines, non-dairy creams and spread without the need for them to be chemically modified before they are used.
- SUNSAT oil has materially increased stability compared to conventional sunflower oil or any other monounsaturated or polyunsaturated oil.

The success of SUNSAT will be a landmark for Advanta India and will likely give it access to the large markets for margarine, bakeries, chocolates, confectionery, fried foods, ice-creams, biscuits, etc. It will act as a replacement for trans and other unhealthy fats and be one of its kind globally.

Advanta India has already given this sunflower seed oil to some food players and received positive feedback on it post their tests. The company is also tying up with big regional players to develop the SUNSAT business. It has tied up with TEAM S.A. (one of the leading oil and fats companies in Colombia and Latin America) and CALSA (a subsidiary of the international food and retail major group, Associated British Foods, UK) for the development of NutriSun, healthy sunflower oil. The company expects to sell 3,000 tonnes of SUNSAT oil in 2009, generating revenues of US\$5–6 million. However, sales are likely to ramp up only in 2010 and 2011.



We believe that the success of SUNSAT will result in Advanta India becoming a major player in the global seed industry. Further, we believe that Advanta India's stock will see significant re-rating on the successful launch of this product. However, we have not factored in any revenues from SUNSAT into our estimates.

## Financials

Advanta India posted revenue growth of 45% to Rs 4,237.3 million and operating profit (EBITDA) growth of 46% to Rs 818.8 million in CY07. However, PAT declined by 12% to Rs 428.1 million due to higher interest, depreciation and taxes and also due to lower other income (in CY06, the company had one-time income of Rs 233.1 million from sale of land).

For CY08, we expect PAT growth of 12.3%, despite 41% growth in sales and operating profit on account of lower other income (Rs 92 million as against Rs 305.9 million in CY07). However, adjusted for other income, PAT growth should be 218%.

For 9M CY08, Advanta India's revenue grew by 60.4%, operating profit by 56% and PAT by 77%. The top-line growth was due to higher demand and also because of acquisitions made over the past year.

**Figure 20: Nine-month financial summary**

Rs million	9M CY07	9M CY08	Growth (%)
Net sales	2,672.4	4,285.8	60.4
Cost	2,163.9	3,491.0	61.3
EBITDA	508.5	794.8	56.3
EBITDA margin (%)	19.0	18.5	-
Other income	58.6	57.1	(2.6)
Interest	222.1	299.6	34.9
Depreciation	85.1	150.2	76.6
Profit before tax	259.9	402.0	54.7
Tax	66.6	78.2	17.4
Tax rate (%)	25.6	19.4	-
PAT	193.3	323.8	67.5
Less: Minority interest	0.0	(18.4)	-
Net profit	193.3	342.2	77.0

Source: Company data.

Advanta India's return ratios have been low, as it is in an expansion mode. However, we believe that it is now in a position to leverage on its acquisitions and should see its return ratios improve significantly going forward. In CY09, its ROIC should climb to 11.5% and its ROE to 12.7% from 10.14% and 10.1%, respectively, in CY08.

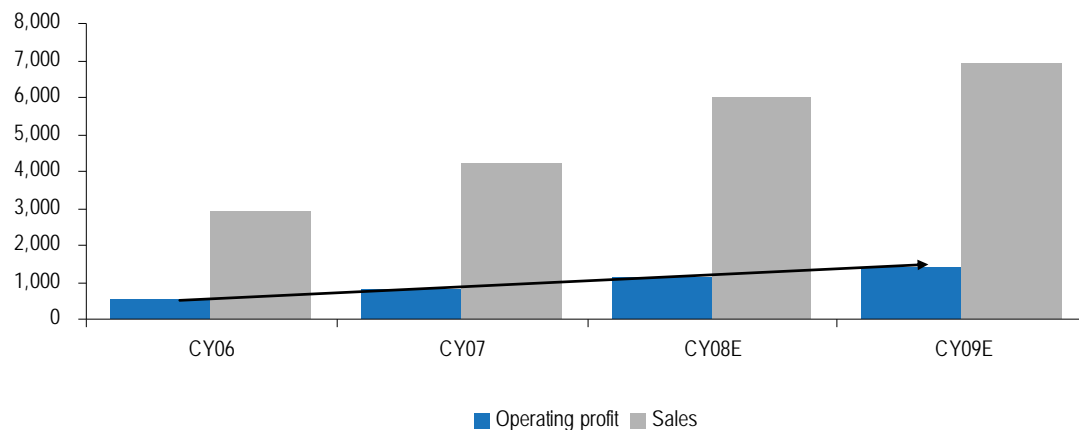
### **Top-line and operating profit CAGR of 28% and 30%, respectively, during CY07–09E**

We estimate a revenue CAGR of 28% during CY07–09 to Rs 6,944 million. The main reason for this is the strategic acquisitions the company has made during this period in the vegetables and sorghum businesses, which have given it a much wider and comprehensive portfolio. Also, the successful launch of hybrid rice and hybrid mustard (the first of its kind in India with 15% more yield and 20% more oil content than the traditional variety) should add to the top line in the years ahead.

The launch of Bt cotton in India, Bt corn in Argentina as well as the introduction of RR Canola in 2008 should also add to its top and bottom line.

**Figure 21: Revenues and operating profit**

Rs in million



Source: Company data, Reliance Equities estimates.

Operating profit during CY07–09 should grow at 30% to Rs 1,382 million. We expect operating margin to rise by 58 bps to 19.9% in CY09 due to the benefits accruing from products launched earlier (like hybrid rice and hybrid mustard which have found high acceptance) and also because of Advanta India’s entry into the higher-margin businesses of sorghum and vegetables.

## Valuation

Advanta India is trading at 9.5x CY08E and 7.7x CY09E EV/EBIDTA and at 1.4x CY08E and 1.2x CY09E Price/sales.

There are few listed players in the seed industry, both domestically and globally. Most of the global players are also into agrochemicals, with the latter accounting for a major part of their turnover. Agrochemicals is a commodity business and gets a lower multiple than standalone seed companies. Given that growth visibility is higher in seeds, stocks of the standalone companies should trade at premium valuations. We believe that stocks in this sector will continue to benefit from their select availability and earnings visibility.

**Figure 22: Valuation comparisons**

Units as shown									
Company/Year	Sales (US\$ m)		P/E (x)		EV/EBIDTA (x)		ROE (%)		
	2008	2009	2008	2009	2008	2009	2008	2009	
Monsanto, USA	11,388	13,490	19.8	15.4	11.3	9	23.7	26.6	
Syngenta AG-REG	11,432	11,825	10.3	9.3	7.4	6.9	23.8	23.8	
KWS SAAT AG	735	834	14	13.4	8.2	7.2	13.0	11	
Bayer AG	42,697	43,355	10.4	10	6.4	6.1	14.6	14.8	
Vilmorin & Cie	1,241	1,221	14.8	14.8	8	7.6	9.6	10.3	
Average				12.6		7.4			

Source: Bloomberg, Reliance Equities estimates.

Note: Priced at COB 1 December 2008.

The seed industry has seen consolidation over the past few years and there have been many acquisitions in the range of 2.7–5.0x sales.

**Figure 23: Global acquisition multiples**

Units as shown					
Date	Target company	Acquirer	EV	Sales	EV/sales
Mar-08	De Ruiters, Netherlands	Monsanto	Euro 546m	Euro 108m	5.0x
Jul-07	Zeraim Gedera, Israel	Syngenta	US\$95m	US\$33m	2.9x
Aug-06	Delta Pine, USA	Monsanto	US\$1,437m	US\$366m	3.9x
Jan-06	Seminis, USA	Monsanto	US\$1,426m	US\$526m	2.7x

Source: Bloomberg, Reliance Equities research.

We have valued Advanta India on a DCF basis, as there are not many comparables in this industry. Our DCF calculations factor in no revenues from SUNSAT and suggest a target price of Rs 625, implying a return of 28% over a 12-month period.

**Figure 24: DCF assumptions**

%	
<b>Cost of equity</b>	
Risk-free rate (India)	7.75%
India equity premium	6.00%
Beta	1.00
<b>Cost of equity</b>	<b>13.80%</b>
<b>Cost of debt</b>	
Average borrowing rate (before tax)	14.00%
Tax rate	26.00%
<b>Cost of debt (after tax)</b>	<b>10.40%</b>
Debt/equity	0.4x
<b>WACC</b>	<b>12.35%</b>
<b>Terminal growth</b>	
Sustainable ROIC	15.0%
Reinvestment rate	33.3%
Cost of capital	12.4%
Terminal growth rate	5.0%

Source: Reliance Equities estimates.

**Figure 25: DCF model**

Rs million	CY08E	CY09E	CY10E	CY11E	CY12E	CY13E	CY14E	CY15E	CY16E	CY17E	CY18E
EBIT *(1-t)	695.5	844.6	957.6	1137.9	1341.1	1546.1	1760.8	2002.5	2257.4	2518.7	2746.2
Depreciation	215.5	240.5	270.5	305.5	355.5	415.5	495.5	585.5	705.5	855.5	1080.5
Capital expenditure	(884.8)	(250.0)	(300.0)	(350.0)	(500.0)	(600.0)	(800.0)	(900.0)	(1200.0)	(1500.0)	(2250.0)
(Increase)/decrease in working cap.	(723.5)	(288.8)	(235.5)	(374.7)	(422.9)	(468.7)	(325.0)	(525.8)	(603.7)	(649.7)	(712.3)
Free cash flow	(697.3)	546.4	692.5	718.7	773.8	892.9	1131.3	1162.1	1159.3	1224.6	864.4
Discounted value	(683.9)	477.0	538.1	497.0	476.2	489.1	551.6	504.3	447.7	420.9	264.5

Source: Reliance Equities estimates.

**Figure 26: Valuation table**

Rs million and as shown	
<b>Discounted value from CY08E to CY18E</b>	<b>3,982.5</b>
Terminal value	7,996.3
Total value	11,978.7
Debt	3,183.9
Cash and investments	567.6
Total shareholders' value	9,362.4
No. of shares (million)	16.8
Value per share (Rs)	556.1
One-year forward value per share (Rs)	624.9

Source: Company data, Reliance Equities estimates.

**Figure 27: Sensitivity analysis**

Rs, and as indicated						
		Terminal growth rate (%)				
		3%	4%	5%	6%	7%
WACC(%)	11%	669	702	745	804	891
	12%	585	603	<b>625</b>	652	689
	13%	553	566	582	601	625
	14%	511	519	527	537	548
	15%	476	480	484	487	491

Source: Reliance Equities estimates.

At our target price, Advanta India would trade at 15.5x earnings, 9.3x EV/EBIDTA and 1.5x Price/sales in CY09.

## Concerns

- **Risks regarding regulation:** Advanta India's business is dependent on various laws, regulations and policies announced from time to time in the countries where it operates. Any development in these areas that affects or curtails the company's freedom to operate may adversely affect the business and growth.
- **Risks relating to integration due to amalgamation:** Advanta India has made several acquisitions in order to expand its product portfolio. In case it is unable to integrate these businesses, then the intended benefit may not be as positive as we expect.
- **Risks regarding weather, pests, etc:** Adverse weather can affect the quality and quantity of production of seeds and it can also cause pest attacks, affecting the output of seeds. This could hamper the company's growth prospects.
- **Dilution due to further acquisitions:** Advanta India says it is looking to expand its presence in existing geographies as well as newer locations through acquisitions. In order to fund these acquisitions and grow these companies, Advanta India may have to dilute its equity.

## Company overview

Advanta India was originally incorporated as ITC Zeneca Limited in 1994 as a joint venture between ITC Limited and Zeneca Limited for research and development, production, marketing and sale of hybrid seeds. However, after the restructuring of the businesses of ITC and Zeneca, ITC transferred its shareholding to Agro Tech Foods Ltd and Zeneca transferred its stake to Advanta Lambda B.V. in 1997. After these changes, the name of ITC Zeneca Limited was changed to Advanta India Limited in 1998.

In 2004, Syngenta acquired control over the Advanta group worldwide and retained the group's North American corn, soyabean and Agripro wheat business and sold the rest to Fox Paine and Company, LLC, a USA-based private equity firm. The firm sold all the businesses to various players worldwide except certain businesses that were owned by Advanta Lambda B.V.

The holdings of Agro Tech Foods and of Advanta Lambda B.V. in Advanta India were bought by a subsidiary of United Phosphorus Limited in 2006.

Advanta India has many subsidiaries through which it conducts its business: Advanta Holdings B.V., Netherlands; Advanta Netherlands Holdings B.V., Netherlands; Advanta Finance B.V., Netherlands; Advanta International B.V., Netherlands; Pacific Seeds Holdings (Thailand) Limited, Thailand; Pacific Seeds Pty Limited, Australia; Pacific Seeds (Thai) Limited, Thailand; Advanta Semillas SAIC, Argentina; and Longreach Plant Breeders Management Pty Ltd, Australia.

However, Pacific Seeds Australia, Pacific Seeds Thailand, Advanta Semillas Argentina, Garrison & Townsend, USA, are the main operating subsidiaries, while the rest are investment companies.

Advanta India is the holding company for all the subsidiaries and also has business operations in India. It has 100% holdings in all the subsidiaries (including the holding companies) except in Longreach Plant Breeders, where it has a 70% stake.

### Pacific Seeds Pty Ltd

One of the major players in the hybrid seed market, Pacific Seeds is into research, production and sales of many seed varieties in Australia and also undertakes exports. Its key crops are grain sorghum, forage sorghum, corn, sunflower and canola. It has now also entered the wheat market with the acquisition of Longreach Plant Breeders. The company has also launched Roundup Ready (RR) Canola which is a GM crop.

**Figure 28: Pacific Seeds Pty Ltd—Crop planting and harvesting months**

Crop	Planting months	Harvest months
Sunflower	July to March	January to July
Canola	March to June	November to January
Corn	July to March	January to July
Grain sorghum	September to March	February to July
Forage sorghum	August to March	October to June

Source: Company data, Reliance Equities research.



Pacific Seeds Pty is a significant player in the sunflower, canola, corn and sorghum seeds market in Australia and has launched many hybrids in these crops. It has also set up an exports division, which focuses on markets not catered to by the group companies. It exports to countries such as Vietnam, Indonesia, Southern China, Bangladesh and to some South and Central American countries.

Pacific Seeds is the largest subsidiary of Advanta India and had a turnover of A\$57.9 million in CY07 and should have a CAGR of 13.4% during CY07–09E, with growth coming from higher exports, launch of GM canola and increased sales of existing products.

#### **Pacific Seeds Thailand**

Pacific Seeds Thailand has been in the seeds business since 1975. Its main crops are tropical field corn, baby corn, sweet corn, sorghum and sunflower. Sorghum and sunflower are mainly for the Australian and Argentinian subsidiaries. The company had a turnover of baht 479 million in CY07 and should have a CAGR of 15% during CY07–09.

**Figure 29: Pacific Seeds Thailand—Crop planting and harvest months**

Crop	Planting months	Harvest months
Tropical field corn	May and June	September and October
Baby corn	May and June	September and October
Sweet corn	November	March

Source: Company data, Reliance Equities research.

#### **Advanta Semillas SAIC, Argentina**

Advanta Argentina was formed in 1996 and is vertically integrated in the production of hybrid sunflower seeds. The company's main focus is on the domestic sunflower business but it is also present in grain sorghum, forage sorghum and corn.

**Figure 30: Advanta Semillas SAIC—Crop planting and harvesting months**

Crop	Planting months	Harvest months
Sunflower	July to November	December to April
Corn	August to October	March to May
Grain sorghum	November	April to May
Forage sorghum	November	April to May

Source: Company data, Reliance Equities research.

It also exports sunflower seeds, grain sorghum and forage sorghum to countries such as Bolivia, Brazil, Uruguay, Venezuela, Europe and China.

Advanta Argentina has a strong R&D team and it is here that the SUNSAT project is being undertaken. It also has developed a strong marketing network. Advanta Argentina had a turnover of US\$14.86 million in CY07 and should have a CAGR of 18% during CY07–09E, with the increase in turnover coming from exports and Bt corn, which was launched in these markets last year and has found a favourable response.

#### **Advanta India**

Advanta India is the holding company for all the subsidiaries and also has business operations in India. The main products in India are hybrid rice, mustard, sunflower, corn, grain and forage sorghum. Advanta India has also entered the lucrative vegetable seed

market through the acquisition of Golden Seeds and Unicorn Seeds. It has also launched hybrid Bt cotton in India, which has gained wide acceptance. We expect enhanced revenues from this segment going forward. Also, hybrid rice and hybrid mustard, which were launched recently, have found high acceptance among customers and should contribute significantly to the top line, looking ahead.

**Figure 31: Advanta India—Crop planting and harvesting months**

Crops	Planting months	Harvest months
Hybrid rice	June-July, November-December	November, April-May
Sunflower	July-August, September-November	September-December, March-May
Corn	May-July, September-October	February-April, September-November
Grain sorghum	September-November	February-March
Forage sorghum	September-October	January-February
Cotton	April-June	January-February

Source: Company data, Reliance Equities research.

Advanta India has a strong R&D division and has also established a vast distribution network in the country. In CY07, it had a turnover of Rs 969.4 million and we expect a CAGR of 34% during CY07–09. This growth in turnover will be organic as well due to the acquisition of Golden Seeds and Unicorn Seeds in CY07 and CY08, respectively.

**Figure 32: Summary financials**

Rs million, year-end December				
<b>Profit and loss</b>	<b>CY06*</b>	<b>CY07</b>	<b>CY08E</b>	<b>CY09E</b>
Net sales	2,915.9	4,237.3	5,986.3	6,944.5
% growth	-	45.3	41.3	16.0
Total expenditure	2,356.0	3,418.5	4,831.0	5,562.5
Operating profit	560.0	818.8	1,155.4	1,381.9
% growth	-	46.2	41.1	19.6
EBITDA margin (%)	19.2	19.3	19.3	19.9
Other income	364.8	305.9	92.0	100.0
Interest	260.8	407.9	382.0	325.0
Depreciation	55.0	123.0	215.5	240.5
Profit before tax	609.0	593.9	649.8	916.4
% growth	-	(2.5)	9.4	41.0
Tax	125.0	148.2	169.0	238.3
Effective tax rate (%)	20.5	25.0	26.0	26.0
Net profit	484.0	445.6	480.9	678.1
% growth	-	(7.9)	7.9	41.0
Minority interest	0.0	8.2	0.0	0.0
Extraordinaries	9.5	(9.3)	0.0	0.0
Reported net profit	493.5	428.1	480.9	678.1
% growth	-	(13.2)	12.3	41.0
Adjusted Net Profit (excluding one time gains)	260.4	428.1	480.9	678.1
% growth	-	64.4	12.3	41.0
<b>Balance sheet</b>				
<b>Balance sheet</b>	<b>CY06*</b>	<b>CY07</b>	<b>CY08E</b>	<b>CY09E</b>
Equity	84.0	168.3	168.3	168.3
Reserves	1,015.6	4,364.4	4,828.4	5,472.9
Net worth	1,099.6	4,532.7	4,996.8	5,641.2
Minority interest	0.0	14.4	14.4	14.4
Total debt outstanding	4,482.4	3,169.5	3,000.0	2,500.0
Liabilities	5,582.0	7,716.7	8,011.2	8,155.6
Gross block	4,606.7	5,950.5	6,875.5	7,125.5
Depreciation	669.5	768.7	984.2	1,224.8
Net block	3,937.2	5,181.8	5,891.3	5,900.7
Capital work-in-progress	13.4	40.2	0.0	0.0
Investments	0.1	5.1	5.1	5.1
Total current assets	2,741.0	4,486.5	4,411.0	4,913.5
Total current liabilities	1,109.7	1,996.9	2,296.1	2,663.6
Net current assets	1,631.3	2,489.6	2,114.9	2,249.9
Total assets	5,582.0	7,716.7	8,011.2	8,155.6

Source: Company data, Reliance Equities estimates.

Note: \* Consolidated for nine months.

**Figure 33: Cash flow statement**

Rs million	CY07	CY08E	CY09E
EBIT	699.5	939.8	1,141.4
(Increase)/decrease in working capital	(867.3)	(723.5)	(288.8)
Cash flow from operations	(167.8)	216.4	852.7
Depreciation and others	531.2	307.5	340.5
Interest paid (-)	(407.9)	(382.0)	(325.0)
Tax paid (-)	(151.1)	(169.0)	(238.3)
Dividends paid (-)	(16.8)	(16.8)	(33.7)
Net cash from operations	(212.4)	(43.9)	596.3
Capital expenditure (-)	(1,370.6)	(884.8)	(250.0)
Net cash after capex	(1,583.0)	(928.7)	346.3
Increase/(decrease) in borrowings	(1,312.8)	(169.5)	(500.0)
(Increase)/decrease in loans	(683.0)	846.4	0.0
(Increase)/decrease in investments	(5.0)	0.0	0.0
Equity issue/(buyback)	3,029.8	0.0	0.0
Cash from financial activities	1,029.0	676.9	(500.0)
Others	(141.3)	0.0	0.0
Opening cash	1,257.8	562.6	310.8
Closing cash	562.6	310.8	157.0
Change in cash	(695.2)	(251.8)	(153.8)

Source: Company data, Reliance Equities estimates.

## Kaveri Seeds

### Ready to leverage the demand potential

Buy

Rs 134

Target price: Rs 210

Bloomberg code	KSCL IN
Reuters code	KVRI.BO
3m avg. traded value (Rsm)	6.5
52-wk H/L (Rs)	390/111
Sensex	8739
Mcap (US\$m/Rsbn)	36.7/1.9

Shareholding (%)		
	09/08	06/08
Promoters	61.0	61.0
MFs, FIs, banks	14.1	14.2
FIs	4.0	4.0
Others	21.0	20.8

Stock performance (%)			
	1m	6m	1yr
Absolute	1.5	-52.5	-50.7
Rel. to Sensex	13.7	-12.7	9.2

KSCL has been in the business of production, processing and marketing of seeds for over two decades. It has a pan-India presence with a comprehensive product portfolio and a strong R&D team, and is well positioned to capitalise on the growth of the high-yield/hybrid seed market. We initiate with a Buy and a DCF-based price target of Rs 210.

#### ■ Diversified product portfolio and strong distribution network

Kaveri Seeds has built a comprehensive product portfolio of commercial crops in India. The company has developed many new hybrid seeds and a strong pan-India distribution network, making it a significant player.

#### ■ Top-line and bottom-line CAGR of 25% and 35% in FY08–10E

KSCL should see top-line growth come from the hybrids launched in recent years. We also expect increased sales in newer geographies where Kaveri Seeds entered in earlier years and now has a significant presence.

#### ■ Operating margin to improve by 74 bps to 27% in FY10E

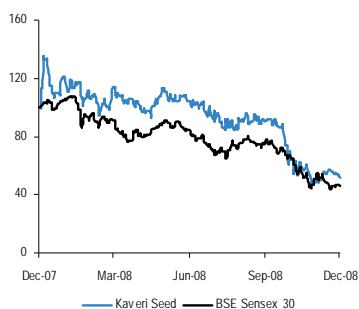
Kaveri Seeds has higher operating margin compared with peers due to its presence in crops where demand is higher and realisations are better. Looking ahead, the margin should improve further due to the contribution from hybrids that were launched recently and which have found high market acceptance.

#### ■ Valuations: Price target of Rs 210

We derive our 12-month price target of Rs 210 (upside of 57%) using DCF, based on a 5% terminal growth rate and a WACC of 13.55%.

#### Share price performance

Base = 100



Source: Bloomberg, Capitaline.

#### Figure 34: Key financials

Rs million, year-end March

	FY07	FY08	FY09E	FY10E
Net sales	657.7	965.7	1,220.7	1,501.2
Operating profit	171.2	253.6	323.5	405.3
Net profit	105.4	139.6	197.2	252.5
EPS (Rs)	7.7	10.2	14.4	18.4
Net profit growth (%)	274%	32%	41%	28%
EBITDA margin(%)	26.0	26.3	26.5	27.0
P/E (x)	17.4	13.2	9.3	7.3
EV/EBITDA (x)	7.6	5.8	5.2	3.9
P/Sales (x)	2.8	1.9	1.5	1.2
ROCE (%)	93%	39%	25%	24%
ROE (%)	62%	21%	17%	19%

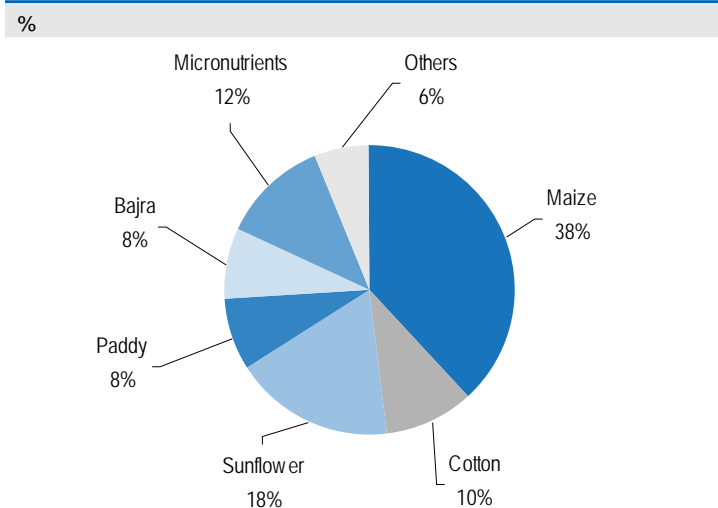
Source: Company data, Reliance Equities estimates.

## Investment rationale

### Diversified portfolio mitigates product risk and provides revenue visibility

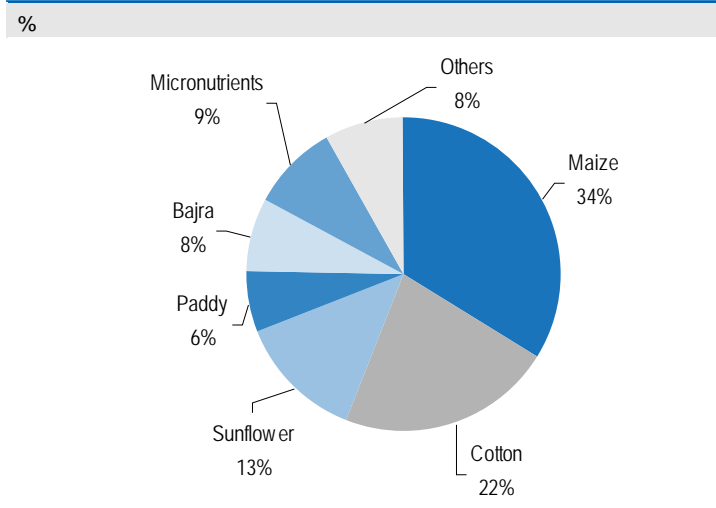
Over the past few years, Kaveri Seeds has diversified its product portfolio, which now includes maize, cotton, sunflower, paddy, *bajra*, *jowar*, grain sorghum and vegetables. However, the main products are maize, cotton, sunflower and *bajra*.

**Figure 35: Kaveri Seeds—Revenue breakdown, FY08**



Source: Company data.

**Figure 36: Kaveri Seeds—Revenue breakdown, FY10E**



Source: Reliance Equities estimates.

About 72% of the company's FY07 turnover came from two crops, namely corn and sunflower. With the addition of other crops to its product portfolio, the contribution of these two crops came down to 56% of sales in FY08. Looking ahead in FY10, the contribution should further come down to 47%.

The diversified product portfolio and presence across geographical areas has mitigated product or region-specific risk and, thus, provides increased revenue visibility.

### Well-established distribution network enabling it to cater to the mass market

The company has been in the seed business for over two decades, during which it has set up a strong distribution network. Kaveri Seeds has more than 750 distributors spread across the country. This vast network has helped it to be closer to the farmer and develop hybrids based on their requirements.

Historically, the company has been a player in southern and central India, but over the past few years, it has expanded its geographical presence in the northern, eastern and western markets too. Kaveri Seeds has been continuously developing newer hybrids in different crops based on regional demand, thus gaining significant market presence.

We believe Kaveri Seeds is well positioned to capitalise on the increased demand for high-yield/hybrid seeds because of its pan-India distribution network and vast product portfolio.

### **Strong R&D capabilities resulting in improved and newer products**

KSCL has a large collection of germplasm, which it has amassed over the past two decades. It has also built a qualified and experienced research team.

The company's R&D team has 55 employees and is headed by Mr. NP Sharma (formerly head of Biotechnology at the Directorate of Rice). The team has helped Kaveri Seeds to develop hybrids that are superior to its peers and, thus, gain market share. The corn, sunflower and *bajra* hybrid seeds developed by the R&D team have been highly successful in the domestic market.

The R&D team has also developed hybrid GM cotton seeds that have found high acceptance in the domestic market. Use of GM cotton seeds by Indian farmers is on the rise and the presence of Kaveri Seeds here should result in the company gaining a significant market share.

Kaveri Seeds is one of the few organised industry players with its own land for R&D. It also grows foundation seeds on these lands. As the company grows foundation seeds on its own land, it has more control over germplasm and the total process of developing hybrid seeds which thus minimises the possibility of misuse and piracy of the company's hybrids.

Kaveri Seeds spent about 4% of its sales on R&D in FY08 and plans to spend 4–5% of sales going forward. The R&D expense as a percentage of total sales is lower than the industry average (of 7–8%) as it saves on leased rentals for land. If one were to account for the company's rentals in the R&D expense, then it would account for 7–8% of sales.

We believe the company's strong R&D team and large collection of germplasm will help it to continuously develop new and improved seeds and, thus, remain a significant player in the domestic seed industry.



## Financials

Kaveri Seeds had a predominantly *kharif* season focused seeds business. Thus, the first quarter (April to June) accounted for a major part of its revenues. However, over the years, the company has added *rabi* crops to its portfolio and revenues are now less skewed.

During FY06–08, Kaveri Seeds saw a revenue CAGR of 42% and a profit CAGR of 142%, on the back of expansion of both its product portfolio and its distribution network.

Kaveri Seeds posted top-line growth of 18%, operating profit growth of 13% and PAT growth of 53% in 1H FY09. The higher net profit growth was due to lower tax provisions.

The management of KSCL believes that the company's income is non-taxable, as it is agricultural income. However, until the last year, Kaveri Seeds did pay income tax (at an effective tax rate of 30% in FY08). In our valuation of the company, we have assumed a 30% tax rate and any savings on this account would be an upside to our estimates.

**Figure 37: Key financials—1H FY08 versus 1H FY09**

Rs million, year-end March			
	1H FY08	1H FY09	% growth
Net sales	718.2	846.6	17.9
Cost	496.7	596.4	20.1
EBITDA	221.5	250.2	12.9
EBITDA margin (%)	30.8	29.6	-
Other income	6.6	8.8	33.0
Interest	9.2	13.0	41.4
Depreciation	8.0	14.1	76.4
Profit before tax	211.0	232.0	9.9
Tax	73.5	21.0	(71.5)
Tax rate (%)	34.8	9.0	-
Net profit before extraordinary items	137.5	211.0	53.5
Extraordinary items	0.0	6.3	-
Net profit	137.5	204.7	48.9

Source: Company data.

Kaveri Seeds has a net debt free balance sheet. However, it does take working capital loans as its business is seasonal. We believe it will continue to be net debt free as cash flows should remain strong.

### Top-line and bottom-line CAGR of 25% and 35%, respectively, during FY08–10E

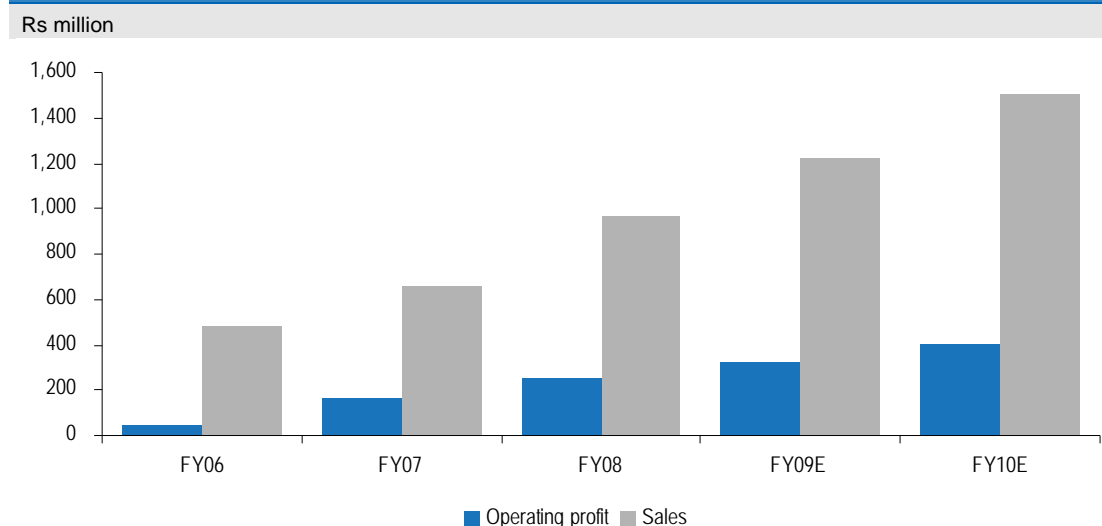
We forecast top-line growth to Rs 1,501.2 million by FY10 on the back of increased demand for the company's existing products as well as higher revenues from new hybrids launched recently.

Kaveri Seeds introduced Bt cotton seeds in FY07 and these have performed well. Revenue from cotton seeds should triple to Rs 330 million by FY10. We also expect the company's revenues from its sunflower seeds business—where it launched new hybrids in this segment in FY08—to grow by 15% to Rs 197.5 million in FY10.

Kaveri Seeds entered into the micronutrients segment in September 2006 by acquiring the business of Kaveri Agriteck. India's micronutrients market is expanding rapidly and the company stands to benefit as these can be marketed through its existing distributor network. We expect revenues from the business to grow 12.5% to Rs 139.2 million in FY10.

We forecast PAT to increase at a higher rate than revenues, as the operating margin should increase by 74 bps to 27% in FY10.

**Figure 38: Revenues and operating profit—On a steady uptrend**

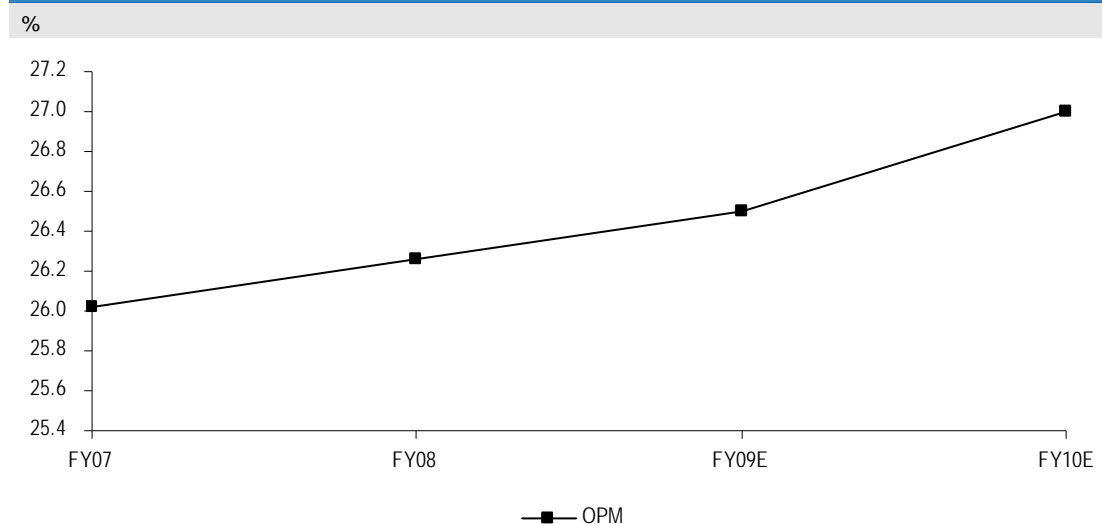


Source: Company data, Reliance Equities estimates.

**Operating margin to improve by 74 bps to 27% in FY10E**

Kaveri Seeds reported an operating margin of 26.26% in FY08, one of the highest in the industry. The company’s operating margins are higher because it undertakes R&D and also grows foundation seeds on its own lands. Also, Kaveri Seeds has a strong presence in seeds such as corn and sunflower where realisations are better due to increasing demand for these commodities. We expect the company’s margin to remain high due to increased demand for the crops in which it operates and also due to higher realisation from hybrids launched earlier and have found market acceptance. We expect the operating margin to improve by 24 bps in FY09 to 26.5% and by 50 bps in FY10 to 27%.

**Figure 39: Operating margin forecasts**



Source: Company data, Reliance Equities estimates.

## Valuations

Kaveri Seeds trades at EV/EBITDA multiples of 5.2x FY09E and 3.9x FY10E; earnings multiples of 9.3x FY09E and 7.3x in FY10E; and Price/sales of 1.5x FY09E and 1.2x FY10E.

We have valued the company using DCF methodology as there are few comparables in this industry. Our 12-month DCF-based price target of Rs 210 implies 57% upside potential.

Figure 40: DCF assumptions	
Units as shown	
<b>Cost of equity</b>	
Risk-free rate (India)	7.75%
India equity premium	6.00%
Beta	1.00
<b>Cost of equity</b>	<b>13.80%</b>
<b>Cost of debt</b>	
Average borrowing rate (before tax)	14.00%
Tax rate	30.00%
<b>Cost of debt (after tax)</b>	<b>9.80%</b>
Debt/equity	0.05x
<b>WACC</b>	<b>13.55%</b>
<b>Terminal growth</b>	
Sustainable ROIC	15.0%
Reinvestment rate	33.3%
Cost of capital	13.6%
Terminal growth rate	5.0%

Source: Reliance Equities estimates.

Figure 41: DCF model										
Rs million, year-end March										
	FY09E	FY10E	FY11E	FY12E	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E
EBIT *(1-t)	195.7	247.6	299.7	355.9	416.2	470.2	518.2	553.3	593.4	627.7
Depreciation	43.9	51.7	60.7	71.2	84.7	102.1	123.1	146.5	171.7	199.9
Capital expenditure	(300.0)	(130.0)	(150.0)	(175.0)	(225.0)	(290.0)	(350.0)	(390.0)	(420.0)	(470.0)
(Increase)/decrease in working cap.	(153.6)	(25.3)	(53.1)	(72.0)	(111.8)	(117.5)	(135.6)	(127.9)	(123.3)	(122.1)
Free cash flow	(214.0)	143.9	157.3	180.0	164.1	164.7	155.6	181.9	221.8	235.4
Discounted value	(203.0)	120.2	115.7	116.6	93.6	82.8	68.8	70.9	76.1	71.2

Source: Reliance Equities estimates.

**Figure 42: DCF valuation**

Rs million, unless stated otherwise	
Discounted value from FY09E to FY18E	612.9
Terminal value	1,553.8
Total value	2,166.7
Debt	56.7
Cash and investments	429.0
Total shareholders' value	2,539.0
No. of shares (million)	13.7
Value per share (Rs)	185.3
One-year forward value per share (Rs)	210.0

Source: Company data, Reliance Equities estimates.

**Figure 43: Sensitivity analysis**

Rs		Terminal growth rate (%)				
WACC (%)		3%	4%	5%	6%	7%
		11%	290	302	317	337
12%	254	261	269	281	297	
13%	204	207	<b>210</b>	214	219	
14%	194	196	198	201	204	
15%	173	174	175	176	177	

Source: Reliance Equities estimates.

At our target price, Kaveri Seeds would trade at 11.4x P/E, 6.4x EV/EBIDTA and 1.9x P/sales in FY10E.

## Risks to our estimates, valuation and target price

**Regulatory risk:** The business of Kaveri Seeds is dependent on various laws, regulations and policies announced from time to time. Any development in these areas curbing the company's freedom to operate would have an adverse effect on its business and growth.

**Risk from weather, pests, etc:** Seed production is dependent on weather conditions and unfavourable weather can affect the quality and quantity of production. Also, due to adverse weather conditions, there may be pest attacks, affecting the output and hampering growth.

**Competition from newer products:** The seed business requires continuous development of improved seeds, and inability to develop these would result in loss of market share.

## Company overview

Kaveri Seeds is engaged in the business of production, processing and marketing of high-quality hybrid seeds. It has 12 hybrid varieties of corn, five of sunflower, six of cotton and 13 varieties of paddy besides other supplement products developed in-house.

**Figure 44: Kaveri Seeds—Product portfolio**

Crop	Planting months			Production area	
	Kharif	Rabi	Kharif	Rabi	
Sunflower	August	October	Ranebennur	Eluru, Markapuram & Erragondapalem	
Corn	May/June	October	Kurnool/Ranebennur	Eluru, Markapuram, Karimnagar, Jangareddy	
Cotton	May		Gadwal, Gajendragada, Bagepally		
Bajra	June	November	Ranebennur	Armoor, Porumamilla	
Paddy	June	November	Karimnagar, Warangal, Bhadrachalam	Karimnagar, Warangal, Bhadrachalam	
Grain sorghum		September		Bellary	

Source: Company data.

Kaveri Seeds has been in the seed business for over two decades. It has production, processing and R&D facilities in Andhra Pradesh and Karnataka. The company owns about 400 acres of land in Andhra Pradesh and Karnataka where it undertakes R&D activities and also grows foundation seeds, thus enabling it to keep better control over germplasm. The company has also set up a biotech lab at Hyderabad to carry on R&D activities for development of high-performance seeds.

Kaveri Seeds is also in the business of micronutrients. Micronutrients are a group of nutrients essential for plant growth but required by plants only in small quantities. Intensive cropping depletes nutrients, including micronutrients from the soil at a fast rate. The micronutrients required by plants in trace quantities are iron, zinc, manganese, copper, boron, molybdenum and chlorine.

The company is managed by its founder–promoter Mr. GVB Rao and his team. Mr. Rao is a graduate in agricultural science and has been in the seed business for several decades.

Kaveri Seeds raised Rs 687 million through an IPO in 2007. The money was raised to acquire farmland for R&D, open new marketing offices around the country, set up a seed processing and a corn cob drying plant, and for working capital margin.

**Figure 45: Summary financials**

Rs million, year-end March				
<b>Profit and loss</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09E</b>	<b>FY10E</b>
Net sales	657.7	965.7	1,220.7	1,501.2
% growth	36.5	46.8	26.4	23.0
Total expenditure	486.6	712.1	897.2	1,095.9
EBITDA	171.2	253.6	323.5	405.3
% growth	330.5	48.2	27.6	25.3
EBITDA margin (%)	26.0	26.3	26.5	27.0
Other income	14.7	22.1	22.1	22.1
Interest	12.3	15.1	20.0	15.0
Depreciation	12.4	20.6	43.9	51.7
Profit before tax	161.1	240.0	281.7	360.8
% growth	290.7	48.9	17.4	28.1
Tax	53.8	72.1	84.5	108.2
Effective tax rate (%)	33.4	30.0	30.0	30.0
Net profit	107.4	167.9	197.2	252.5
% growth	275.2	56.4	17.4	28.1
Extraordinaries	2.0	28.4	0.0	0.0
Reported net profit	105.4	139.6	197.2	252.5
% growth	273.7	32.4	41.3	28.1
EPS (Rs)	7.7	10.2	14.4	18.4
<b>Balance sheet</b>				
<b>Balance sheet</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09E</b>	<b>FY10E</b>
Equity	97.0	137.0	137.0	137.0
Reserves	166.2	915.5	1,112.7	1,324.1
Net worth	263.2	1,052.5	1,249.7	1,461.2
Total loans	118.9	56.7	200.0	150.0
Deferred tax liability	1.5	1.9	1.9	1.9
Total liabilities	383.6	1,111.1	1,451.6	1,613.0
Gross block	252.6	430.9	730.9	860.9
Depreciation	44.1	63.4	107.3	158.9
Net block	208.4	367.5	623.6	702.0
Investments	70.6	233.8	233.8	233.8
Total current assets	391.2	919.3	1,062.4	1,253.1
Total current liabilities	286.6	409.5	468.2	575.8
Net current assets	104.6	509.8	594.2	677.2
Total assets	383.6	1,111.1	1,451.6	1,613.0

Source: Company data, Reliance Equities estimates.

**Figure 46: Cash flow statement**

Rs million, year-end March				
	<b>FY07</b>	<b>FY08</b>	<b>FY09E</b>	<b>FY10E</b>
EBIT	158.8	233.0	279.6	353.7
(Inc./dec in working capital	(155.3)	(174.3)	(153.6)	(25.3)
Cash flow from operations	3.5	58.7	126.0	328.3
Depreciation & others	68.2	23.4	65.9	73.7
Interest paid (-)	(12.3)	(15.1)	(20.0)	(15.0)
Tax paid (-)	(53.8)	(72.1)	(84.5)	(108.2)
Dividends paid (-)	0.0	0.0	0.0	(41.1)
Net cash from operations	5.6	(5.1)	87.4	237.7
Capital expenditure (-)	(127.7)	(178.3)	(300.0)	(130.0)
Net cash after capex	(122.2)	(183.4)	(212.6)	107.7
Inc./(dec.) in borrowings	(25.3)	(62.3)	143.3	(50.0)
(Inc)/dec. in investments	62.6	(191.6)	0.0	0.0
(Inc)/dec. in loans and advances	13.4	(64.6)	0.0	0.0
Equity issue/(buyback)	75.0	630.3	0.0	0.0
Cash from financial activities	125.8	311.9	143.3	(50.0)
Others	6.7	18.5	0.0	0.0
Opening cash	37.8	48.1	195.2	126.0
Closing cash	48.1	195.2	126.0	183.7
Change in cash	10.3	147.1	(69.2)	57.7

Source: Company data, Reliance Equities estimates.



## Appendix 1: An overview of seed varieties

Seeds can be broadly classified into farm-saved seeds (e.g., open-pollinated and self-pollinated varieties), hybrid seeds and GM seeds.

### Open-pollinated/farm-saved seeds

Farm-saved seeds are produced by crossing selected parental lines that are genetically similar. These seeds are pollinated by natural means and produce progeny with no significant variation from their component lines. In many crops, these types of seeds maintain the traits indigenous to a specific parental line. These seeds have lower yield compared with hybrid seeds, but can be saved and re-used for several generations. Farm-saved seeds, when re-used, have some degeneration of uniformity, yield potential and quality from one generation to the next.

### Hybrid seeds

Hybrid seeds are grown to get seeds of desired traits. These seeds are produced by controlled pollination of genetically dissimilar parental lines. The selection of the two parental lines is done based on the traits desired in the hybrid seed. These traits may be high yield, pest resistant, disease resistant, maturation time, herbicide tolerant, germination time, hardness factor, drought resistant, etc.

### The process of hybrid seed development

The process begins with trait selection. In this process, plants that have desirable traits are selected. To get the desired traits, a large pool of germplasm should be available to choose from. Along with germplasm, R&D capabilities are required in order to develop a commercially viable hybrid seed.

A hybrid seed has the desired hereditary characteristics determined by the selected genetics of the parental line and normally has enhanced performance characteristics compared to the parental lines. The higher yield is due to hybrid vigour or heterosis, a naturally occurring characteristic across the biological world. The crop produced from these seeds exhibits a higher degree of uniformity along with higher yields. In a hybrid seed, all favourable genes from the female and male parents are combined to get maximum performance.

Hybrid seeds do not perform well when saved and re-used in the next generation, as they lose yield significantly. Thus, farmers have to buy new seeds every season so as to get the benefits of hybrid seeds.

Hybrid seed development takes 4–6 years before the seed can be commercially marketed. The process of development begins by making many different combinations from a pool of germplasm to get the desired traits. After this, the various combinations are planted during the season in a single location and observed to see which combination gives the desired result. The combination which performs as expected is then planted in multiple locations and the outcome is observed. On satisfactory performance of the hybrid seed in multiple locations, it is given for trial runs to farmers in the subsequent season and the results are studied. If the seed produces the required results, then its mass marketing is done in the upcoming season.

It takes about 2–3 years for the hybrid seed to be accepted by the farming community and used widely after the seeds are initially mass marketed. Thus, it takes about 7–8 years to realise the total benefit of the hybrid.

The prices of hybrid seeds are higher than open-pollinated seeds. Despite this, farmers buy them because of certain traits that are not available in open-pollinated seeds. Hybrids have found high acceptance globally due to the benefits they offer without any adverse effects.

### Genetically-modified (GM) seeds

Over the past decade, the demand for higher yield and the need for protection from certain diseases have led to the use of biotechnology in plants. GM seeds are a product of this use. A GM seed is one where a gene from an organism is transferred to another organism to change or improve its characteristic. All this is done under controlled conditions in a laboratory.

GM seeds have been around for a number of years, but have been controversial. Many NGOs/farming associations/private bodies have been protesting against their use, as they believe it will have an adverse impact on the environment.

Despite this, the use of GM seeds (or biotechnology seeds) has picked up across the world. Currently, 23 countries grow at least one biotechnology crop. The major crops grown using biotech seeds across the world are soyabean, maize, cotton and canola.

The total area of land under biotech crops was 114.3 million hectares (282.4 million acres) in 2007, of which the USA accounted for nearly 50%.

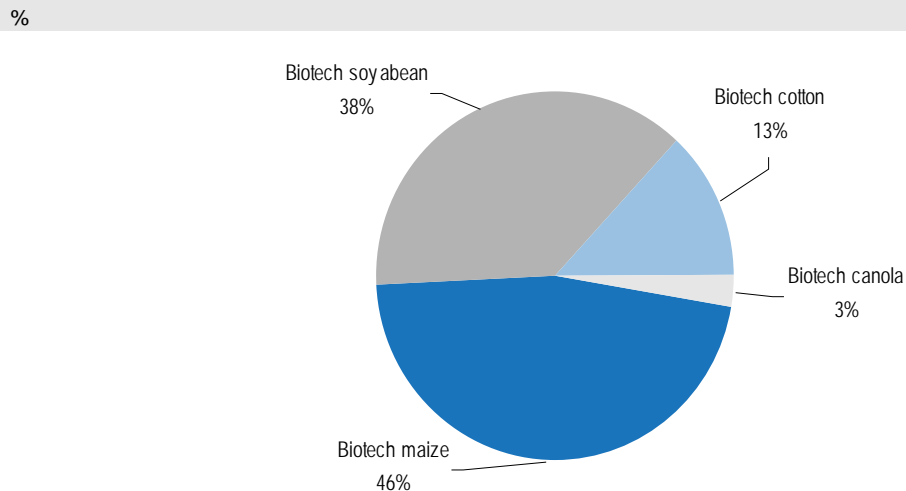
**Figure 47: Area under biotech cultivation (2007)**

Million hectares		
Country	Area	Biotech crops
USA	57.7	Soyabean, maize, cotton, squash, papaya, alfalfa
Argentina	19.1	Soyabean, maize, cotton
Brazil	15	Soyabean, cotton
Canada	7	Canola, maize, soyabean
India	6.2	Cotton
China	3.8	Cotton, tomato, poplar, petunia, papaya, sweet pepper
Paraguay	2.6	Soyabean
South Africa	1.8	Maize, soyabean, cotton
Uruguay	0.5	Soyabean, maize
Philippines	0.3	Maize, soyabean, cotton
Australia	0.1	Cotton

Source: International Service for the Acquisition of Agri-biotech Applications (ISAAA), Reliance Equities research.

Cropnosis estimates the global market for biotech seeds at US\$6.9 billion, representing about 20% of the total global commercial seeds market, in 2007.

**Figure 48: Biotech seeds market in 2007**

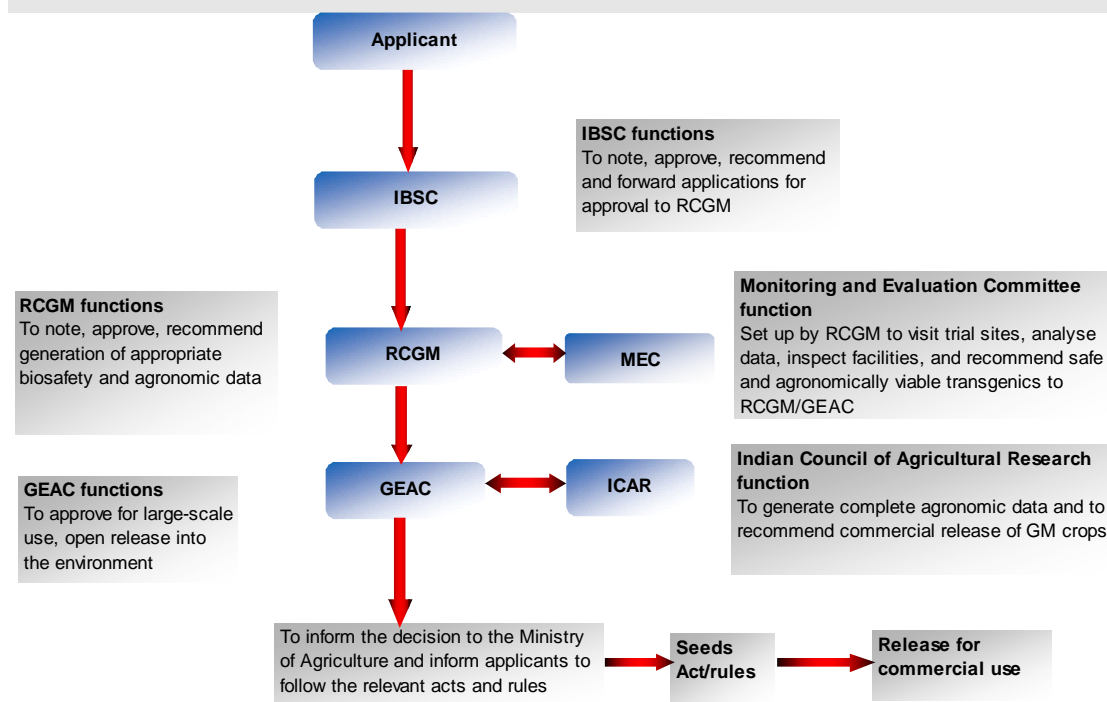


Source: ISAAA, Reliance Equities research.

Though some countries have accepted biotechnology crops, others are yet studying their possible impacts. Even in countries where biotechnology crops are grown, any new crop addition is studied in depth for a number of years before it is allowed to be commercially cultivated. For example, in India Bt cotton was approved in 2002 and till date no other GM crop has been allowed for commercial cultivation.

Biotechnology crops need a long period of time before they can be commercially cultivated, as they require in-depth research and then only get regulatory approvals.

**Figure 49: Procedure for GM crop launch in India**



Source: Department of Biotechnology, Government of India.

Note: IBSC = Institutional Biosafety Committee; GEAC = Genetically Engineering Approval Committee; RCGM = Review Committee on Genetic Manipulation.

## The process of seed production

Seed production starts with the nucleus seed and then follows a three-stage multiplication process, namely breeder, foundation and certified/truthfully labelled seeds.

**Nucleus seed:** The seed produced by the breeder to develop the particular variety.

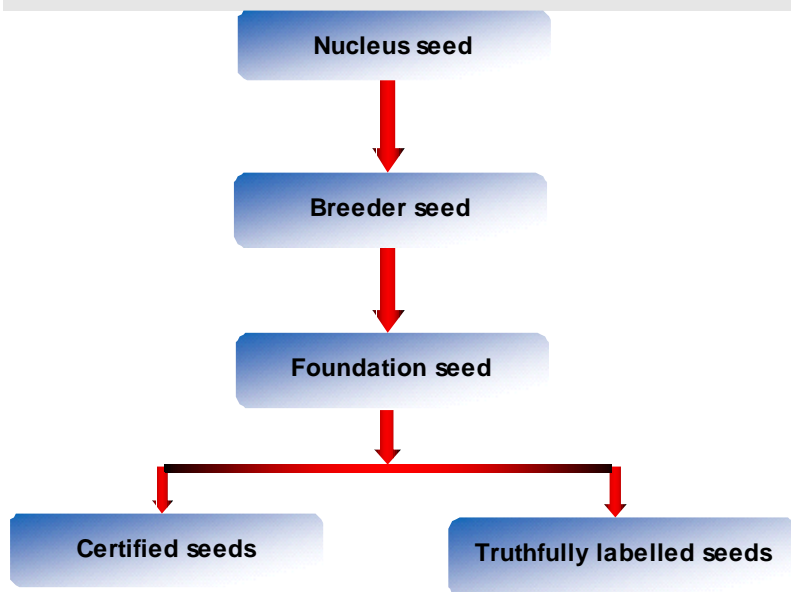
**Breeder seed:** The seed or vegetative propagating material produced by or under the control of the sponsoring plant breeder. These are used for growing foundation seeds.

**Foundation seed:** This is obtained from the breeder seed and is the source for the registered and/or certified seed. Production of foundation seeds is permitted if supervised and approved by the certifying agency and the production process is so handled as to maintain specific genetic purity and identity.

**Certified seed:** They are produced from foundation seeds and are certified by a seed certifying agency. These seeds are produced annually according to standard seed production practices and are then sold to farmers for commercial cultivation.

It is not necessary that all foundation seeds produced are certified by a certifying agency. In India, many private companies launch their seeds into the market without certification. However, companies doing so have to ensure that the minimum expected standards laid down by the government are maintained by them.

Figure 50: Process of seed production



Source: Reliance Equities research.

After the seeds are grown, they are conditioned so that they can be sold to farmers. The conditioning process includes drying, cleaning and sorting the seeds, treating the seeds with insecticides and fungicides and then packaging them for sale.

## Appendix 2: The state of Indian agriculture

Agriculture is one of the most important sectors of India's economy and contributes about 16.3% of the country's GDP. It employs about 60% of the population.

India has about 161.7 million hectares of cultivated land, the second-highest arable land under cultivation after the USA (source: FAO, 2003). India produced about 217.3 million tonnes of food grains in 2006–07 and is one of the largest producers of rice, wheat and pulses in the world.

**Figure 51: Crop production trends**

Million tonnes				
Crop	2003–04	2004–05	2005–06	2006–07
Rice	88.5	83.1	91.8	93.4
Kharif	78.6	72.2	78.3	80.2
Rabi	9.9	10.9	13.5	13.2
Wheat	72.2	68.6	69.4	75.8
Coarse cereal	37.6	33.5	34.1	33.9
Kharif	32.2	26.4	26.7	25.6
Rabi	5.4	7.1	7.3	8.3
Pulses	14.9	13.1	13.4	14.2
Kharif	6.2	4.7	4.9	4.8
Rabi	8.7	8.4	8.5	9.4
Total food grains	213.2	198.4	208.6	217.3
Kharif	117	103.3	109.9	110.6
Rabi	96.2	95.1	98.7	106.7
Total oilseeds	25.2	24.3	28	24.3
Kharif	16.7	14.1	16.8	14
Rabi	8.5	10.2	11.2	10.3
Sugarcane	233.9	237.1	281.2	355.5
Cotton*	13.7	16.4	18.5	22.6
Jute and mesta ^	11.2	10.3	10.8	11.3

Source: Economic Survey of India.

Note: \* Million bales of 170kg each. ^Million bales of 180 kg each.

**Figure 52: India's world ranking in some major crops**

Crop	Ranking
Rice, paddy	2
Wheat	2
Fresh vegetables	2
Cotton	2
Sorghum	3
Rapeseed	3
Sunflower seeds	4
Maize	6

Source: FAO (2005), Reliance Equities research.

## Important aspects of Indian agriculture

### Rainfall

This is crucial for the outcome of food grain production in India as a significant proportion of the total cultivated land has no access to irrigation. Though the government has been building irrigation facilities, the pace has slowed down from 3% additional irrigational potential created during 1950–1990 to 1.2%, 1.7% and 1.8% during the Eight, Ninth and Tenth Five-Year Plans, respectively.

### Minimum support prices

The government declares MSPs for 24 crops such as rice, cotton, and wheat. These prices are recommended by the Commission for Agricultural Costs & Prices (CACP).

The CACP decides prices considering the costs of production, which includes the cost of paid inputs, imputed value of family labour and rentals for own lands. MSPs are important as they act as a reference price for farmers and become the floor price for those crops.

### Cropping season

There are two main cropping seasons in India, namely *kharif* and *rabi*. The *kharif* season begins in May and lasts till August, while the *rabi* season starts from October and lasts till January–February.

### Small size of land holdings

In India, the average size of farm holdings is about 1.4 hectares. This is one of the lowest in the developing nations (for example, the average in Brazil is about 72.8 hectares, 7 hectares in Chile and 3.4 hectares in Thailand) and thus possibilities of mechanisation are limited.

In India, more than 80% of agricultural holdings are smaller than 2 hectares and more than 60% of the farmers operate in areas which are less than 1 hectare. The size of these farms is shrinking further as the sub-division of holdings is consequent to the increase in population.

### Low yield

Yield in the food grain sector from 1989–90 to 2006–07 had a CAGR of 1.5%. This low growth rate is despite the fact that India already has one of the lowest yields in the world compared with global peers across crops.

The yield is low due to a number of reasons, such as lack of irrigation facilities, smaller land holdings, and low use of fertilisers and high-yield seeds.



## Regulatory environment for agriculture

The seed industry saw its first regulation in the form of **The Seeds Act, 1966 and Seed Rules, 1968**. These regulations provide the basic regulatory structure to ensure seed control. The act provides for compulsory quality control of seeds of any notified kind and variety, voluntary certification of seeds of any notified kind or variety, and truthful labelling of seeds. This act also specifies the functions of various seed regulatory bodies, specifications of minimum limits of germination and purity, regulation of the sale of seed, certification, etc.

**The Seeds (Control) Order, 1983:** This was issued under the Essential Commodities Act, 1955, and enumerates the procedure for registration of every person carrying on the business of selling, exporting or importing seeds of a notified kind or variety.

**New Policy on Seed Development, 1988:** This policy relaxed norms for the import of technology and parental material, and opened the doors to MNC seed companies. However, the policy allowed imports only if the foreign supplier supplies the parental line seeds or breeder seeds to the Indian company within two years of the first consignment.

**The New Seed Policy, 2002:** This policy laid down the foundation for comprehensive reforms. It included implementation of an effective *sui generis* system for intellectual property protection to stimulate investment in R&D of new plant varieties. The policy also acknowledged the need to adopt technology and protect the farmer from exploitation.

**Seeds Bill, 2004:** The proposed Seeds Bill seeks to replace the existing Seeds Act and includes regulation and registration provisions for all seeds to be sold; provisions for self-certification and accreditation of private seed testing laboratories; and regulation of GM seeds. The bill also provides that no GM variety of seed would be registered unless the applicant has obtained clearance under the provisions of the Environment Protection Act. The bill protects the right of the farmer to save, use, exchange, share or sell his farm seeds and planting material. However, the farmer cannot sell seeds or planting material under a brand name. Also, he has to conform to the minimum standards regarding germination, physical purity and genetic purity applicable to registered seeds. The bill also provides that for all registered varieties, seed producers, distributors and vendors have to disclose the expected performance of the seed under certain conditions. If the seed fails to perform as per expected standards, then the farmer can claim compensation from the dealer, distributor or vendor under the Consumer Protection Act, 1986.

Intellectual property rights are governed by **The Protection of Plant Varieties and Farmers Right Act (PPVFR), 2001, and the Patent Act, 1970**. The PPVFR recognises the need to protect the plant breeder's right so as to stimulate R&D, both in the public and the private sector for the development of new plant varieties. This act lays down ways for registration of plant varieties and also ensures that any variety registered and sold to the farmer discloses the expected performance under the given conditions. The act also bestows the right to the farmer to claim compensation in case the seed does not perform as expected. The act extends the breeders' right to production, selling, marketing, distribution, export and import of seeds and/or propagating material of protected variety.

The Patents Act, 1970, was amended through the Patents (Amendment) Ordinance, 2004, and the Patents (Amendment) Act, 2005, to comply with the TRIPS agreement. These amendments introduced the concept of product patents with a protection of 20 years. The act now allows product patents and process patents, and is extended to agro-chemicals, food and biotechnology products, including GM organisms, besides drugs and pharmaceuticals.

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**Hold** = Expected return in a band of +/- 15%

**Sell** = Expected return -15% or less

All returns calculated over a 12-month period (including dividend).

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