

Challenges in the Management of Seed Enterprise

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ABSTRACT: Continuous Improvement in potential productivity of different seeds is imperative to attain a desired growth in agricultural production. At the same time quality seed of suitable varieties should be available to user farmers at right time and at reasonable cost to realise that potential. This calls for an efficient management of sub-systems of the seed sector Research and Development, Multiplication and Distribution. The policy environment conducive to development of these sectors would be crucial. The paper would examine the nature and functioning of seed enterprises in the public, co-operative and private sectors to identify issues related to management of these enterprises and of seed Industry at large. It would also suggest alternative approaches to management of the industry vis-a-vis policy environment to attain the long term objective of economically viable and technologically self-reliant seed industry to meet the emerging challenges.

Key words: Challenges, Management, Seed enterprise

During the past three decades the seed industry in India has grown from virtual non-existent to a vibrant one with an estimated annual turnover of Rs 300 crores [1]. The area under seed production has increased to about three lakh acres and production to about 65 lakh quintals in 1988-89 [2]. In the same year 56 lakh quintals of quality seed have been distributed. Over 2000 varieties of various crops suitable for different regions have been developed [3].

The achievements are commendable; but when compared with the requirements, a big gap exists. The gap is likely to increase unless concerted efforts are made to accelerate the growth. The challenge for the seed industry is to nearly double the production by the end of the 20th century to meet the projected requirements of agricultural commodities [4] as shown below.

	1989-90	2000 AD
Foodgrains	170 million tonnes	240 million tonnes
Oil seeds	18 million tonnes	23.5 million tonnes
Sugarcane	217 million tonnes	300 million tonnes
Cotton	9.5 million bales	13 million bales
Jute & Mesta	9.5 million bales	12.5 million bales

Whereas doubling the production may be relatively easier. The efforts. needed to evolve new

varieties to meet the needs of users is going to be a greater challenge. For instance, making available adequate quantity of seed of suitable varieties for early and late sowing in rainfed and irrigated areas or developing an appropriate variety to fit into different crop rotations would be an extremely challenging job. As important as production of seed is the task of making farmers accept the new variety. The potential demand for quality seed that exists, would have to be activated. What is the type of seed enterprise that could meet such challenges? What policy support would they need for efficient functioning? An attempt is made to examine these questions in this paper.

STRUCTURE OF SEED INDUSTRY

Research, multiplication and distribution are the three core activities of seed organisations/agencies, be they in the public, co-operative or private sectors. While seed research has primarily been the responsibility of agricultural universities and Indian Council of Agricultural Research (ICAR), a central government organisation, a couple of private companies have also undertaken this activity and this number, of late, is increasing. The ICAR carries out research at 15 of its research institutes and 25 state agricultural universities (SAUS).

Multiplication and distribution of quality seed are carried out by 15 public sector organisations,

some co-operative federations, 29 limited companies and scores of partner/family firms. As mentioned earlier, very few private companies have integrated research with multiplication and distribution. However, real producers of seed are contract farmers who are spread over a large geographic area. Wholesalers and retailers are the distributors/dealers who work on certain margins.

Generally, any industry has three partners who account for their success. They are company, marketing channel and consumers. A company should identify the consumer's need and ensure that they are met at the right time with the right product. This role of matching company product with consumer need is performed by the channel. The channel as well as consumers are not under the direct control of the company but they have a mutual interest. This involves understanding the two external partners of the company. In case of seed industry there is a fourth partner, the seed growers. They are large in number spread over a large geographical area. They, like channel members, are independent small entrepreneurs. They have limited resource base and work under severe constraints. Motivating them to come up to the expectations of the company standard is not an easy task. In short, the success of a seed enterprise depends on how successfully the small area of interaction among the four partners is managed.

MANAGEMENT OF SEED RESEARCH

Seed research is the key activity of a seed enterprise. It is highly individual oriented. The enterprise has to attract the best talents by providing an attractive compensation package. The organisational climate should be conducive not only to attract the right people but should also develop a culture to stimulate them to work and retain them. To enable them to keep in touch with their peer groups and be in touch with the latest trends, they should be encouraged to participate in workshops/seminars/conferences which are of professional importance. A well-equipped library is also important.

Seed research is a land-based activity and requires good quality land with assured irrigation facilities and all at one place. Greenhouse facilities

to provide controlled environment are another important and associated item of investment.

Second major investment in research is salary for the researchers. It is a recurring cost. Investment in laboratory though small is very essential. Finance for investment and working capital has to be managed.

Since the outcome from research is uncertain, there is always the risk of failure which has to be managed. As returns from any new variety introduced has to compensate the investment cost in research, this needs to be protected so that others are not allowed to exploit the new material developed. This is important especially in the open pollinated crops. Even in case of hybrids, if the parentage is known the competitors might exploit them. It is because of this fear that private companies are reluctant to take up research or restrict it to hybridization only. For the same reason they are hesitant to import seed and deposit a sample of the same with National Bureau of Plant Genetic Resources.

Product identification itself is a complicated process. This would have to start with consultation/understanding of the ultimate consumers needs. With the rapid expansion of agro-processing, the demand for newer varieties suitable for processing is assuming importance. With greater sophistication in consumer choices, the demand for producing new varieties would increase. In other words, as needs keep changing, new seed varieties incorporating the new features are released. This created a tremendous pressure on research activity.

For any seed enterprise to be successful in the long run, it has to have control on research output. There are three ways to acquire control on research as follows:

- i) internalising research as part of business.
- ii) promoting subsidiary for undertaking research for the company, and
- iii) sponsoring research at universities.

In the long run dependence on external sources for generating research output may not be desirable.

MANAGEMENT OF SEED MULTIPLICATION

Seed multiplication requires large areas of good quality land with assured Irrigation. It is capital and labour intensive. More important. Its management calls for a very high level of skill and commitment. For these reasons it is not possible for any seed enterprise to undertake seed production activity. It is better to decentralise the seed production programme among selected farmers with whom the seed enterprise can enter into agreement for supply. The activity being highly decentralised, it warrants a lot of attention.

The selection of right type of farmers for this activity is of crucial importance. To select the most capable persons, the selection procedure. should take into consideration several factors such as land area and its quality, assured irrigation facility, farmer's knowledge and his other resources. They have to be trained and nurtured as permanent clients. Decentralised production and supervision has cost implications for the enterprise. Effective supervision would reduce rejection rate and thereby ensure good returns to the farmers and adequate quantity of quality seed to the enterprise. At farmers level, the task starts with transfer of technology from laboratory to farm. The foundation seed is distributed among the growers and they have to be educated to follow the prescribed inputs and practices at right time and quantity.

Multiplication requires advance planning to supply quality seed at a particular time. A minimum of three years advanced planning is required for multiplication of quality seed. The breeder seed multiplication takes one year and two years are needed for foundation seed production. At each stage there could be a gap between production plan and actual yield because of uncertainties due to weather. As the objective of the company is to supply adequate quantity of quality seed, to ensure it. there may be need to contract and get committed over two times the area necessary under normal conditions for breeder seed, one and half times for foundation seed, and one and quarter times for certified/quality seed. This has cost implications. In times of surplus production the company may have to carry over stocks. In case of crops with limited shelf-life the

entire excessive production may have to be disposed of at considerable loss to the company.

Building loyalty of farmers to the enterprise is a delicate and arduous task. For instance, excess or deficit in production in a year at any stage of seed multiplication may bring the problem of providing seed to the seed-producing farmers in the chain. In such times there would be need for considering equity aspects while distributing seed among the client farmers or else they may lose interest in the company. These farmers also need to be protected against the risk of failure of crop or rejection of seed. Such risks have to be underwritten by the company because it is not always due to farmer's fault that seed gets rejected. One way to cope with this problem is to guarantee a minimum return per acre of seed plot. This problem can be to certain extent managed. Insurance cover may be provided so that the risk of failure of crop due to natural calamities is partly transferred to an external agency.

Because of high cost of cultivation of seed crop. crop loan on enhanced scales is necessary. Their recovery period also needs to be extended because the farmers get paid for their produce only after the seed is sold. Alternatively the company should provide advance to the seed growers against the seed delivered at the processing plants. The companies in turn may be provided credit against such stocks under their control.

In brief the company should treat the grower farmers as partners in the business. The contractual binding should not be one-sided and designed mainly to protect the interest of the company. The management should take the responsibility to train and develop the farmers as sound entrepreneurs, supervise their operations in the farm, finance them and also underwrite their risks resulting from externalities. This would ensure greater commitment of farmers and thereby lead to stability in the seed production sub-system. In other words, the seed enterprise has to take a long-term perspective while managing the seed multiplication sub system.

MANAGEMENT OF SEED DISTRIBUTION

The demand for seeds fluctuates from year to year and even within a season depending on the onset of

monsoon and spread of rainfall during the sowing period. Plenty or scarcity in the availability of seed is a typical feature of this industry. In case of other inputs, production can be stabilized though the market for them is subject to seasonal factors. Both supply and demand of seed are affected by natural factors and hence the management has to contend with either excessive stocks or excessive demand. Excessive stocks have to be revalidated in the subsequent seasons and this may involve high rate of rejection due to deterioration in quality. Such losses cannot be borne by the channel. In some seeds shelf-life itself is very short-just one season, with the result that any excess quantity would have to be taken back by the company. This risk of overstocking would have to be owned by the company so that it can build the confidence of the channel. On the other hand in times of scarcity the channel would have the temptation to exploit the situation by fleecing the consumers by hiking the prices. Effective monitoring and control is necessary to avoid tarnishing the image of the company.

Seed marketing at micro-level is basically a task where the farmers needs are to be identified and seed supply matched. Seed being one time demand, timely supply is very crucial. Therefore the management has to ensure adequate supply much ahead of the season. In other words storage at distribution points or at points close to the distributors/dealers has to be ensured.

This involves development of a good management information system (MIS). The information needs are availability of seed for any season, projections of area to be covered under varieties, expected output prices, behaviour of rainfall, adequacy of supportive systems including financing, stocking at different levels and off-take information week by week in the sowing season.

Selection of channel for seed is not an easy task. Since seed is a product with one-time demand, exclusive channel for this product is not feasible and it has to be sold with other farm inputs like fertilizer and pesticides. But while making seed available at several retail points there is risk of seeds becoming out of stock at some points and overstocking at some others. For want of information quick reallocation of

stocks may be difficult. Training of the channel is very crucial because each member needs to know about the product features. Proper communication between the company and the channel on the one hand and the channel and the farmer on the other is also a difficult problem.

Seed is the first input and it accounts for relatively smaller portion of the total cost. Farmers generally have sufficient liquidity to buy seed. Also seed being a part of kind credit liquidity may not be a serious constraint. Generally, in seed brand loyalty among the farmers tends to be very high. It needs extra effort to influence farmers to try out new brands.

As a large proportion of holdings are small and marginal, special care is required to select appropriate pack size. The company must think of smaller size packs especially in case of vegetable seeds though it may involve additional cost.

Pricing of seed is very complex. It has to cover all the costs including risks at all stages. The high cost of seed is mostly a result of covering the risk cost. This can be covered by Insurance. But such facility is not available and as a result, good seed of a company is generally priced two to three times more than others.

There is a definite export market for Indian seeds which can be exploited, Procedures and guidelines for export of seeds is not clear and specific. Information on export demand is also not readily available for the industries to exploit the opportunities.

ORGANIZATION

The three seed activities research, multiplication and distribution involve handling people and tasks which are widely different. To meet this the organization may have to develop different types of organizational culture. For instance, academic culture is essential for managing research activity. Production of seed requires building links with farmers living in remote rural areas. They come from different cultural background and have to be brought under an industrial discipline. This needs altogether a different management culture and process. Marketing seeds

needs aggressive business culture. Thus seed industry has to integrate and bring together people drawn from different backgrounds and should be handled differently. To put them all under one enterprise has the advantage of centralised planning, control and monitoring; but at the same time to handle the persons with different work culture within one organization may pose a lot of problems. One way to resolve this problem could be to float subsidiaries for research, production and marketing. The softer option would be to leave one activity to avoid conflicts within the organization. For instance, research may be carried out through sponsored arrangements or marketing may be entrusted to an independent organization. However, each alternative has its own merits and demerits because they have certain implications on organizational efficiency.

POLICY MANIPULATION FOR ENTERPRISE DEVELOPMENT

Keeping in view the challenges ahead and the nature of the problem faced by enterprise. It would be clear that growth and development can be stimulated if suitable policy changes are made. These policy prescriptions are classified under the three major activities of seed enterprise, viz. research, multiplication and distribution.

Research

To encourage enterprises to take up research it is necessary to make it a viable activity. The policy protections needed are:

- 1) Seed enterprise should have exclusive right on the product developed as a result of research. This would encourage the entrepreneurs to internalise research or have it sponsored at SAUS. This would help SAUS to better utilize their resources and would enable them to make investment in new fields of biotechnology.
- 2) The formalities of release of new varieties need to be simplified and testing period shortened.
- 3) The pricing of breeder seed of open-pollinated public bred varieties should be based on total costs including overheads to make them competitive. In other words subsidy element should be removed. Such a policy would encourage the private sector to take up research on these crops and also on crops such as pulses which hitherto did not attract due attention of the public sector.
- 4) Acquisition of land by private companies for seed research may be exempted from land-ceiling provisions with necessary checks against misuse.
- 5) As discussed earlier, seed research though important in seed industry, requires large investment and involves high risks. At the same time the gestation period is long and benefits are realised over a number of years. At the same time economic benefits from seed are very high. Therefore fiscal concession would be necessary to make it more attractive for the entrepreneurs. These concessions may include import of equipment and materials. It would be preferable to provide subsidy, if any, for research so that industry can gear this activity to face the challenges on a long term basis. Investment capital as well as working capital finance should be made available at concessional rates.

Multiplication

- 1) To ensure regular supplies of seed, seed production will have to be encouraged under controlled conditions. Such investments need to be encouraged through concessional finance under NSP
- 2) Machine processing of seed may be encouraged as it cuts the cost of processing and give better results. As large-sized plants are found unviable because of poor production and frequent shift in areas of production, small-sized plants at decentralised places may be financed under NSP.
- 3) To counter the problem of isolation and poaching, seed village concept needs special attention. Villages may be identified and given seed production programme for a crop.
- 4) The seed growers for purpose of crop loans should be treated differently.
- 5) To avoid the risk of rejection or failure, insurance in modified form may be extended to seed crops.
- 6) The companies may be provided marketing credit against seed stocks in their custody, so that they

could make advances to the farmers against seed delivered at the processing plants.

- 7) Certification may be decentralized to the district level for effective supervision and coordination with seed agencies.

Distribution

- 1) The dealer/distributors may be provided special limits from banks to encourage stocking before peak demand season.
- 2) Storage for seed at production and retail points may be financed. under NSP.
- 3) The warehousing corporations should change their practice of treating seed as grains.

- 4) Public transport should give priority for the movement of seed in proper containers especially during sowing seasons.

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