

## Entrepreneurship development in certified seed production activity – A case study with hybrid sorghum

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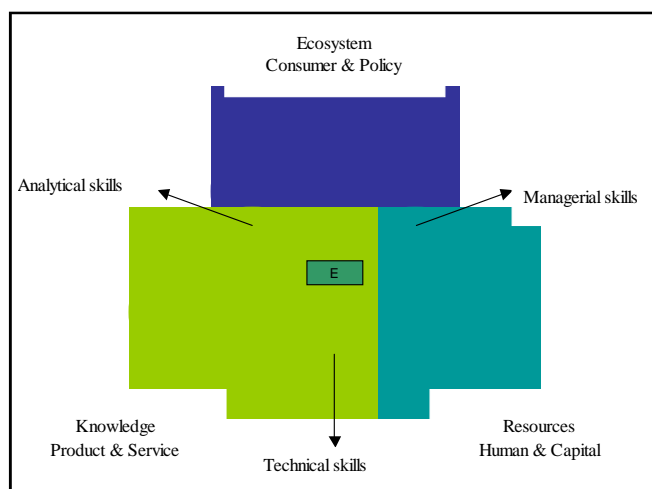
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**Key words :** Enterprenuership, Managerial skills, Technical skills, Production economics, Certified seed.

Education in Indian Universities mould an individual by inculcating the skills required to perform a given activity and hence the resultant output is motivated more or less by an activity rather than by an achievement. Technical skills gained from agricultural universities can be nurtured by supplementing them with analytical skills to understand an ecosystem driven fundamentally by current policies as well as consumer behavior. Inculcating managerial skills to best match human, financial as well as natural resources with backward and forward linkages can help establish a viable supply system to meet the current as well as future demand for any given product. By applying system thinking skills of system as a cause, operational and closed loop thinking one can understand the various facets of a given enterprise. Certified seed production of hybrids in sorghum as a case study has been structured to understand the analytical, managerial and technical skills that are basically needed to transform an individual into an entrepreneur.

An Entrepreneur can be an outcome of a three factor interaction. The first factor is the influence of an external environment, the second is the internal drive and the third is by acquired experiences over time. The external environment influences could be due to a role model that an entrepreneur gets in touch either from his childhood or during the influential times of his educational phase. The internal drive could be due to the nature of being decisive, having an adventurous attitude, risk taking ability or being self motivated. Experiential learning's over time (Fig 1) could be the other acquired character which drives a person to transform himself in to an entrepreneur.

Certified seed production activity in sorghum could be transformed in to an entrepreneurship model since public sector research and development (R and D) outputs after intensive testing are available for scaling up and product spread. The paper discusses various skills like analytical, managerial and technical that the entrepreneur needs to acquire to transform her or himself and add value to an enterprise.



**Fig 1. : Knowledge from education and experiential learning's over time about ecosystem and resources are drivers of entrepreneurship (E)**

### Analytical skills :

To start an enterprise one has to understand the existing policy which defines the rules of the game. Since agricultural growth has been the target of the present government it has been introducing certain schemes wherein the infrastructure development by private sector is being encouraged. Credit linked back ended capital subsidy @ 25 per cent of the project cost subject to a maximum of Rs.10 lakhs per unit is extended. The National Seeds Corporation Ltd is the nodal agency for implementation and monitoring of the scheme. The basic input for higher productivity is quality seed and making it available to the end user at the right time, convenient place and right price is of primary importance. In case of sorghum which is a rainfed crop, timing the product availability becomes extremely important. If the farmers sow the crop with the onset of the monsoon during *kharif* (rainy), making it available ahead of the season should be target of the enterprise.

Sorghum being a low value crop, the price of the product (quality seed) as well as the end user

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characteristics are equally important. Experiences from seed sale at Maharashtra Agricultural University (MAU), Parbhani during the 'Krishi Mela' on May 18 and 19, 2007, indicate the following:

– About 70 per cent of the farmers purchased 1 to 2 bags of 3kg packing of CSH 16 hybrid seed (Fig. 2). This indicates majority of the farmers were allocating 1 to 2 acres of their farm land for hybrid sorghum production

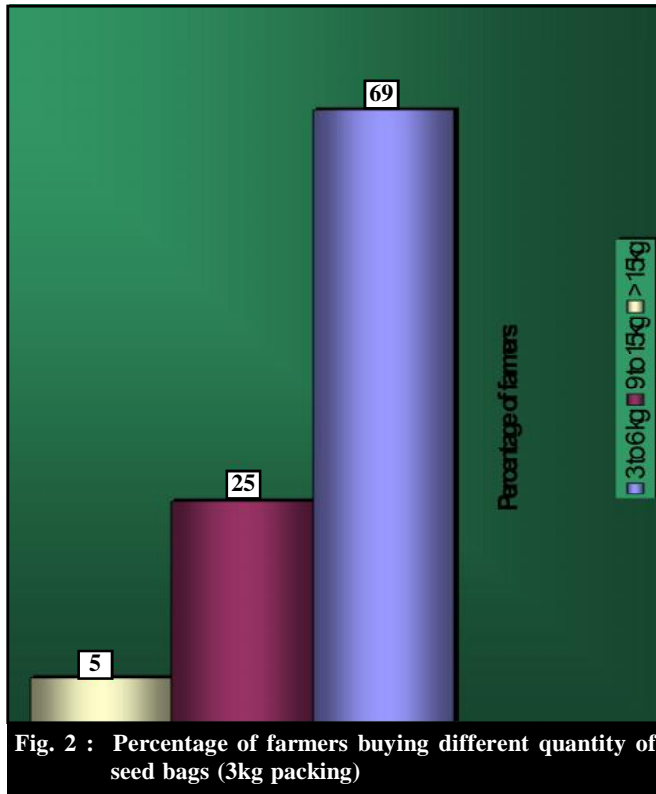


Fig. 2 : Percentage of farmers buying different quantity of seed bags (3kg packing)

each year.

– Out of 200 farmers who purchased the CSH 16 hybrid seed on the first day, 74 came from Hingoli, 53 came from Parbhani and 46 came from Nanded.

Awareness of policy driven schemes helps in utilizing the opportunities and building the much needed infrastructure in any given enterprise. Understanding the end user (farmer) and his requirements in any given crop helps quantify the demand for a given product. An entrepreneur needs to attain these analytical skills to examine the ecosystem that encourages specified activities. This analysis helps in scaling up the product and maximizing its utilization with the ultimate goal of enhancing agricultural growth rate.

### Managerial skills :

Leadership of an enterprise should develop the managerial skills of balancing the capabilities of human

resource with efficient utilization of financial and material resources.. The demand for a said product set by the end user should be matched by a supply system that attains high efficiency of resources involved in the scaling up process. Drawing a blue print or scheming the entire process is the first step using operational thinking skills. Allocating required material and financial resources for a given activity need to be planned in a participatory mode. This not helps in the flow of ideas of the leader down the human resource hierarchical chain, but also motivates others to participate in the planning process and own an idea.

Dean Williams in his book on 'Real Leadership' emphasizes on various aspects that help understand the use of power and its serious repercussions. Rather than teach people how to be visionaries or motivators, this book addresses the demanding task of mobilizing people to confront their predicament and solve their most pressing problems. The focus is not on getting people to follow but on getting people to face reality and think and act responsibly, thereby enabling their organizations and communities to address their toughest challenges and make meaningful progress. The subject of real leadership is critical for managers of an enterprise. Anyone concerned about leadership must distinguish more carefully between those acts of power that create value and prosperity and those that destroy value and thwart

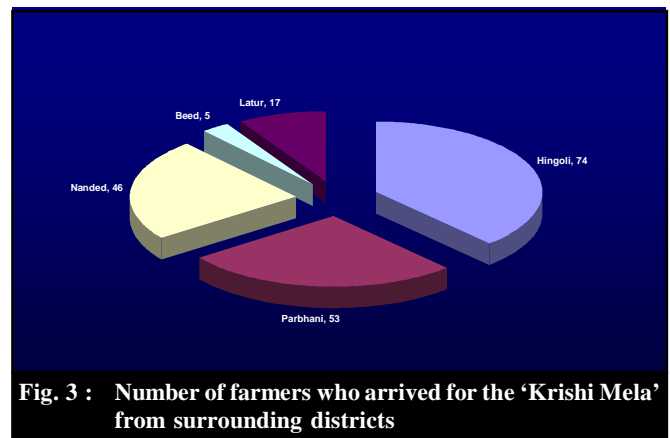


Fig. 3 : Number of farmers who arrived for the 'Krishi Mela' from surrounding districts

prosperity.

If people with power do not learn how leadership can advance the well being of the collective, enterprises will continue to be plagued by productivity problems. If leaders can diagnose their challenges with greater clarity, design and execute smarter interventions, and improve their ability to reflect and learn while they are in the midst of action, then they will have a greater hope of generating and sustaining progress. Thus any given enterprise needs to concentrate on sustainability of any given activity so

as to attain a healthy bottom line. This not only helps to boost the confidence of the personnel in a given enterprise but also the leadership in planning further investments for expansion and winning in a competitive market scenario.

### Technical skills :

Certified seed production in sorghum is normally taken up during the rabi season in an irrigated environment and the crop matures during January/February in a clear weather. The basic facts that need to be considered to facilitate the certification process are:

- acquire the parental seed (male and female) from a reliable source who provide the necessary breeder seed tags
- maintain required isolation distance (200m for certified hybrid sorghum seed production)
- grow the crop in the specified row proportion and at prescribed times for male and female lines for proper synchrony of flowering and adequate seed (Table 1)

**Table 1 : Sorghum hybrid notification no. and staggering between male and female parents**

Hybrids	No. and year	Female parent	Male parent	Staggering required
CSH 5	SO786 /1976	2077 A	CS 3541	Plant female 6 days early
CSH 9	SO19E / 1982	296 A	CS 3541	Plant female 9 days early
CSH 16	SO647E/1997	27 A	C 43	Plant male and female at one time

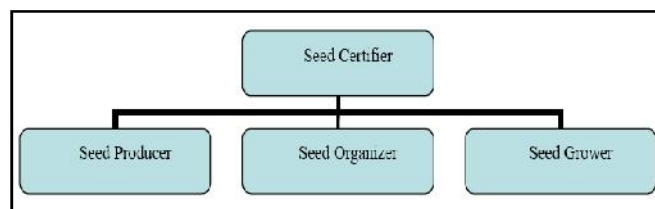
In the state of Andhra Pradesh, the Andhra Pradesh State Seed Certifying Agency (APSSCA) is the nodal agency for certification and issuing the certification tags. The certifying agency charges a nominal fee for field visits, collection of seed samples, testing (Rs.3000/-) and issuing of seed tags (Re.1.50/- per tag). The agency conducts field inspections at specified times during the crop growth and retrieves seed samples after harvest of the crop for grow out test. The certified tags are issued after ascertaining genetic purity and specified germination percentage.

Management of the crop in terms of input use (recommended fertilizers N:P:K 100:50:50 kg ha<sup>-1</sup>) and adequate moisture during the crop growth helps attain good seed size which is primarily important to attain a good plant stand when the hybrid is grown during the following *khari* season by the farmers. Adequate plant protection measures if needed should be taken up especially to protect the crop from shoot fly at crop establishment stage, stem borer during grand growth stage

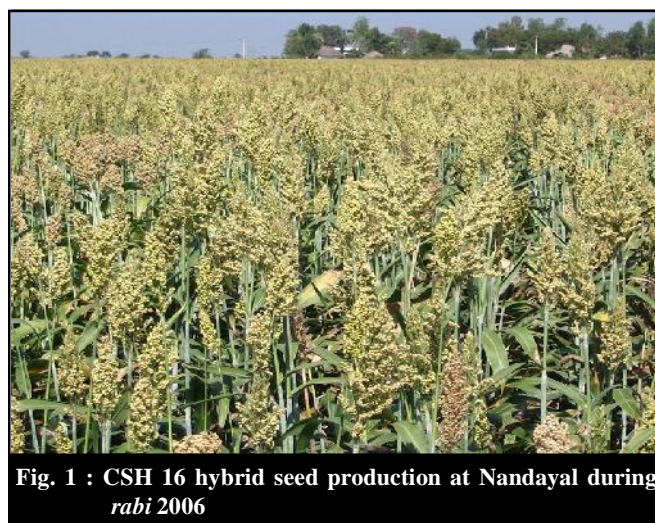
and sucking pests during grain filling stage. Quality of the seed is the major attribute that needs to be considered by any seed multiplication enterprise.

### Production economics :

Certified seed production activity has three major players who derive benefits from the seed production process, apart from the certifying agency which charges a nominal fee for seed certification. The major stakeholders in the production process are given below:



The expenditure incurred approximately by the producer (NRCS) towards processed and bagged certified seed costs was Rs.20/- per kg, plus costs towards cloth bag, labels, printing and transport of around Rs.10/- approximating Rs.30/- per kg of certified seed produced. A selling price of Rs.50/- per kg leaves with a net return of Rs.20/- per kg. The seed organizer was paying the farmer (seed grower) about Rs.12/- per kg of certified sorghum CSH 16 hybrid seed. With a processing and



**Fig. 1 : CSH 16 hybrid seed production at Nandayal during rabi 2006**

bagging expenditure of Re.2/- per kg the organizer is left with a net return of about Rs.6/- per kg. The seed grower was incurring about Rs.4/- per kg of certified hybrid seed produced and was left with a net return of Rs.8/- per kg. The enterprise can integrate the production chain to reduce the number of players so as to increase its net returns and improve profitability.

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