



## Participatory identification and prioritization of agri enterprises in national capital region of India

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### ABSTRACT

The rural youth are disoriented and clueless in the face of lack of income generating and employment opportunities. The problems of young men and women, as well as their vision and aspirations are essential elements of the challenges facing today's societies and future generations. Farm and nonfarm enterprises in rural areas will be able to channelize energies of youth population in a constructive manner for regional and consequently national development. An action research project was undertaken by IARI for enhancing entrepreneurship among rural youth aiming at identification, prioritization of feasible agricultural technology, technological empowerment and hand holding for agripreneurship development in four selected villages of National Capital Region of Delhi; namely Partapur (Hapur), Hasangarh (Rohtak), Kansala (Rohtak) and Badarpur Said (Faridabad). The participatory prioritization was done involving micro screening exercise which is a very important step positioned between the project idea generation and the final decision about the most promising business idea. Micro screening exercise based on situational analysis of villages revealed that floriculture, seed production, net house cultivation, vermi compost/organic products, apiary, value addition, mushroom production and dairy enterprises excelled in order of scores gained irrespective of location. The psychological traits including need for achievement, aspirations and risk taking willingness of the potential entrepreneurs were found to be of moderate level at initial stage.

**Key words:** Agripreneurship, Aspiration, Farm technologies, Micro screening, Motivation, Risk taking

Agriculture and allied sectors considered to be the mainstay of the Indian economy are the important source of raw material and demand for many industrial products, particularly fertilizers, pesticides, agricultural implements and a variety of consumer goods. Hence, there exists innumerable business opportunities in the agriculture and allied sectors. Investors from all over the world are making more and more investments into the sector for unleashing its existing potentialities as well as for exploring the untapped areas. The young people aspire to live full lives in their societies that will allow them to acquire education, develop a career and find employment. Entrepreneurship development among rural youth is an important option for enhancing farm incomes, overall prosperity and employment opportunities. Farm and nonfarm enterprises in rural areas will be able to channelize energies of youth population in a

constructive manner for regional and consequently national development. As for poverty, low production levels and low productivity in agriculture there are many emerging entrepreneurial opportunities requiring policy support. According to Wortman (1990), rural entrepreneurship often includes agriculture-related enterprises, including opportunities for family farms. The importance of entrepreneurship is realized world over as a source of self-employment and economic development of poor (Ali *et al.* 2010). The shift to larger farms means that families with smaller farms, to survive, must often become dual-career families. This can mean employment off the farm or expanding enterprises on the farm to intensify farm business management. Research studies examining rural development possibilities have been macro in orientation.

Small and medium-sized farms can become producers and marketeers of niche products that are unattractive to large farm organizations and use technologies (e.g. business analysis and accounting software) that allow them to be more productive in their efforts. Their challenge is to change a farm operation from a price taker to a price maker. To this end, farmers of small/medium acreage must become far better educated about alternative opportunities. Although diversification is the most-used strategy for farms, research shows that high specialization may be a more appropriate

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strategy to ensure survival of the farm (McElwee 2006). It is assumed, if, ideas and opportunities are assessed and screened properly for viability at initial stage the enterprises have good chances of achieving success by minimizing the risks involved. Awareness, motivation, technical skill, right assistance and support from family at extension level and government and other organizational help to the entrepreneurs at policy level can strengthen capacities besides adding to the family income and national productivity (Nain *et al.* 2013). The “Micro Screening” exercise is a short but, nevertheless, very important step positioned between the project idea generation and the final decision about the most promising business idea. It adds quality to the selection process by adding perceived scores for different parameters related to economic judgments (market, skill availability, technology, etc.). This involves not only generating idea or identifying opportunities but also screening and evaluating them to determine the most viable, attractive propositions to be selected. Such opportunities lead to the provision of a product or service which creates or adds value for its buyer or end-user.

A business opportunity is simply an attractive investment idea or proposition that provides the possibility of a return for the person taking the risk, whereas a good idea is not necessarily a good business opportunity. It is necessary to minimize the risk of failure involving determination of risks and returns. Having matched the ideas with preference, capacity and capability, the entrepreneurs need to weigh each opportunity with respect to availability of certain inputs to make it viable. These inputs include; Availability of raw materials, availability of the market, availability of government support, availability of required technology and skills. In addition the analysis in respect of strategic fit, ease of implementation, risk expected, profitability, the cost benefit and identification of critical success factor is equally important. The perspective entrepreneurs are asked to short-list the idea using five-point scale ranging from Excellent (5), Satisfactory (4), Average (3), Unsatisfactory (2) and Very poor (1). The study conducted in NCR of Delhi is aimed at identifying and prioritizing feasible agricultural technology and assessing their psychological factors associated with entrepreneurship development involving micro screening exercise so that final decision about the most promising business idea may be made.

#### MATERIALS AND METHODS

Ideas and opportunities were screened and assessed for viability after identification with the assumption that the enterprises assessed properly at initial stage have a good chance of achieving success by minimizing the risks involved. The micro screening exercise was performed for identification of opportunities and the characteristics were rated at five point rating ranging from one to five (very poor to excellent). Action research was undertaken in four selected villages namely Partapur (Hapur), Hasangarh (Rohtak), Kansala (Rohtak) and Badarpur Said (Faridabad) in National Capital Region of Delhi. The exercise helped in identification

of potential agripreneurs for action interventions. Forty one farmers from four villages were identified for interventions in the form of motivational and technical training for taking up agri-enterprises. The risk taking behaviour of these 41 identified farmers was measured with the help of tool developed by Atkinson (1957).

In the present study, the Thematic Apperception Test (TAT) consisting of exposing individuals with a series of pictures and asking them to give brief descriptions of what was happening in the pictures was used to measure achievement motivation of the farmers as proposed by McClelland (1961). The responses were analyzed in terms of the presence or absence of certain themes.

#### RESULTS AND DISCUSSION

The findings from the present study have been discussed in two different sections. In the first part, the enterprise identification and its prioritization by farmers in focused group through micro screening techniques were ascertained. It is significant in the context of rural development to employ participatory techniques as the learning process itself has a great influence on the willingness to accept behavioral changes. Second part is devoted to the results of psychological characteristics of the farmers to whom the action intervention in the form of motivation and technical training along with hand holding was given.

##### *Potential enterprises village wise*

Table 1 depicts that in the village Badarpur Said situated around 12 kilometers, Partapur about 17 km, Hassangarh 25 km and Kansala about 16 km from respective district headquarters namely Faridabad, Hapur and Rohtak, ‘Net house cultivation technology’ got the highest points at Badarpur Said followed by seed production, apiary, nursery raising, food processing and mushroom production respectively. The critical success factors (CSF) identified were cost, quality, market and technologies for different projects. Although market and technology were identified CSF for the food processing and mushroom cultivation but expected risk and non-availability of the required skill along with the lack of government priority were rated at very high level leading to less total score. Similar findings were reported by Kuratko and Richard (2001), whereas, it was concluded that the wealth may be created by individuals who take the major risks in terms of equity, time and career commitment of providing value to some product or services. The product or service itself may or may not be new or unique but value must somehow be infused by the entrepreneur by securing and allocating the necessary skill and resources. The opportunities and strategies of entrepreneurs are closely linked to their embeddedness in the economic, political-institutional, and social environment (Rath 2000).

In village Partapur; floriculture, seed production, net house cultivation, vermi composting, apiary, value addition and dairying were identified as perspective key enterprises along with transport, quality, cost and market as critical

Table 1 Potential enterprises in selected villages

Project	Av. Mkt	Av. raw material	Av. of technology	Av. of skill	Govt. priority	Strategic fit	Ease of implementation	Risk expected	Profitability	Cost benefit	Total	CSF
<i>Badarpur Said (Faridabad)</i>												
Net house cultivation	5	5	2	3	4	5	4	4	4	5	41	Cost
Seed production	5	4	2	2	3	4	3	3	4	4	34	Quality
Apiary	4	4	2	2	3	3	4	3	3	3	31	Market
Nursery	4	4	2	1	3	2	3	3	3	3	28	Quality
Food processing	3	4	3	1	2	2	2	2	3	3	25	Market
Mushroom production	3	4	3	2	1	2	2	1	2	4	24	Technology
<i>Partapur (Hapur)</i>												
Floriculture	5	4	4	4	4	5	4	3	4	4	41	Transport
Seed production	5	4	3	3	4	4	3	3	5	5	39	Quality
Net gouse cultivation	5	4	2	3	4	4	3	4	4	4	35	Cost
Vermi composting	4	5	4	3	4	3	3	2	3	3	34	Market
Apiary	4	4	2	3	3	3	3	3	3	3	31	Market
Value addition	3	3	1	1	4	4	3	3	3	4	29	Market
Dairy	3	3	1	1	3	3	3	3	3	3	26	Market
<i>Kansala (Rohtak)</i>												
Net house	5	5	2	3	5	5	4	5	4	4	42	Cost
Seed production	5	5	1	3	4	5	4	4	5	5	41	Quality
Dairy	5	5	4	4	2	4	1	2	4	4	35	Marketing
Floriculture	2	4	4	4	4	4	1	2	3	4	32	Transport
<i>Hassangarh (Rohtak)</i>												
Floriculture	5	4	4	4	4	5	4	3	4	4	41	Transport
Seed production	5	4	3	3	4	4	3	3	5	5	39	Quality
Net house cultivation	5	4	2	3	4	4	3	4	4	4	35	Cost
Vermi composting	4	5	4	3	4	3	3	2	3	3	34	Market
Apiary	4	4	2	3	3	3	3	3	3	3	31	Market
Value addition	3	3	1	1	4	4	3	3	3	4	29	Market
Dairy	3	3	1	1	3	3	3	3	3	3	26	Market

factors ( Table 1). As Partapur is nearer to Hapur, Ghaziabad and close to Pilkhua town the demand for flowers, off season quality vegetables cultivated in net house, vermi compost required in farm houses and orchards nearby and scope of value product is reflected in the results. The results are similar to Rantamäki-Lahtinen (2002), whereas it was concluded that farms had diversified in those areas, where growth through agriculture is somehow restricted, but where markets and customers are near. Similarly, Sikorska (2001) concluded that the entrepreneurial activities of farmers are strictly connected with the demand for their services within the other the neighbourhood localization.

In village Kansala; net house cultivation, seed production, dairy and floriculture emerged as major enterprises to be taken up by the farmers for their enhanced income and employment opportunities. Cost, quality, marketing and transport respectively were identified as the major critical success factors for the identified ventures. This may be due to the perceived governmental priorities, strategic fit and ease in implementation. The results are supportive to the theory of planned change of Ajzen (1991),

whereas it was concluded that farm practices are the result of a selection (made implicitly or explicitly) out of a set of options the farmer perceives as viable for farm development; the room for manoeuvre. Also the results find support from van der Ploeg (2003) conclusion that farm development is a constant interaction of the farm with the biophysical, social and technical surroundings.

In village Hasangarh; floriculture, seed production, net house cultivation, vermi composting, apiary, value addition and dairy were identified as major potential enterprises, however, transport, quality, cost and market were the critical success factors for the potential enterprises. The villagers were cultivating flowers, producing onion seeds and awareness the governmental schemes regarding the support to protected cultivation are reflected in their prioritization. Similar conclusions were made by Safdar *et al.* (2009), whereas it was reported that farmers prefer enterprises that can guarantee them a source of food first. Enterprises that are known to have high returns but also faced by high income and production variability and unreliability were not highly rated but still engaged in for financial security.

### Psychological characteristics of potential entrepreneurs

Motivational status (Table 2) was analyzed through TAT stories (four each) written by the potential entrepreneurs selected from the four villages. Out of 123 stories 34 (27.6%) were found unrelated imageries (UI) which were discarded from the analysis. Overall need for achievement was found in 72.4% of the stories. Village wise, need for achievement was highest for Hassangarh (87.4%) followed by Kansala (75%), Partapur (66.6%) and Badarpur Said (44.4%) respectively.

The scoring of achievement imageries in Table 3 shows that 59.4% of the stories possessed need, 48.2% with any sort of activity, 36.3% with worldly block, 16.6% had help component, 15.8 per cent had personal blocks and 14.2% with negative feeling. However, negative goal anticipation was missing and the achievement theme (2.5%), goal

anticipation positive (4.9%) and feeling positive (7.3%) were found at very low level. On the parameter of received marks only 17.9% of the average marks with slight variations village wise were received by the TAT stories out of total 11 obtainable marks by each story. Village wise also, similar trend was observed. Highest percentage of marks was obtained by the stories written by Badarpur Said participants as the Fe<sup>-</sup> was observed high. This implies that all the villages selected for the study and the corresponding participants were almost similar in their need for achievement.

Aspirations were voiced in terms of education to children, income enhancement, better living standard, economic surplus and percentage increase in their respective enterprises. Table 4 shows that majority of the potential entrepreneurs, on average were having moderate (47.6%) to high level (19.9%) of aspiration, however, only eight percent were with very high level of aspirations. Nearly a quarter were with low level of aspirations. Entrepreneurship is the creation of gain or growth under conditions of risk and uncertainty and all farmers were engaged in the farm business for financial gain or growth (Dollinger 2003). Partapur situated nearer to the town, well connected to educational institutes and market with paddy-potato-vegetables as prominent crop rotation ensuring financial well being was having low to moderate level of aspiration, whereas it was evenly distributed in other selected villages.

Table 2 Overall motivational status of the selected youth (Need for achievement)

Villages	Total number of TAT stories	Unrelated imagery	Achievement imagery	N Ach (%)
Partapur	27	9	18	66.6
Kansala	36	9	27	75.0
Hasangarh	42	6	36	85.7
Badarpur Said	18	10	8	44.4
Total	123	34	89	72.4

Table 3 Motivational status of the respondents – need for achievement

Categories	Partapur (9)		Kansala (12)		Hasangarh (14)		Badrapur Said (6)		Total (%)
	Number	%	Number	%	Number	%	Number	%	
Achievement imagery	18	20.2	27	30.3	36	40.4	8	8.9	
Need (N)	12	66.7	17	62.9	21	58.3	4	50.0	59.4
Activity (Act+/Act /Act?)	4	22.2	15	55.6	19	52.8	5	62.5	48.2
Goal Ant + ( Ga+)			2	7.4			1	12.5	4.9
Goal Ant - (GA-)									
Feeling + (Fe+)			3	11.1	2	5.6	1	12.5	7.3
Feeling - (Fe-)	3	16.7			1	2.7	3	37.5	14.2
Help(H)	4	22.2	4	14.8	5	13.9	1	12.5	16.6
Personal block (Bp)	2	11.1	1	3.7	6	16.7			15.8
Worldly Block (Bw)	5	27.8	4	14.8	10	27.8	6	75.0	36.3
Achievement Theme(Th)			2	7.4	1	2.8			2.5
U I	9		9		6		10		
Total marks obtained	30	15.2	48	16.2	65	16.4	21	23.9	17.9

% calculated from total 89 eligible stories out of 123 total written stories. Figure in parenthesis indicate respective number of participants

Table 4 Aspirations of the respondents

Villages scores	Partapur		Hasangarh		Kansala		Badarpur Said		Average
	Number	%	Number	%	Number	%	Number	%	
Up to 45 (Low)	4	44.4	4	28.6	1	8.3	1	16.7	24.5
45 to 49 (Moderate)	5	55.6	6	42.9	7	58.4	2	33.3	47.6
50-54 (High)			3	21.4	3	25.0	2	33.3	19.9
> 54 (Very High)			1	7.1	1	8.3	1	16.7	08.0
Total	9	100.0	14	100.0	12	100.0	6	100.0	100.0

Table 5 Risk taking willingness of the respondents

Probability of risk	Number	%
No risk	05	12.2
20% risk	12	29.3
50% risk	19	46.3
80% risk	05	12.2
100% risk		
Total	41	100.0

The risk taking willingness of majority of the respondents was found to be 20 to 50% (Table 5). The 12.2% of the potential entrepreneurs were reported to be of gambling nature ready to take high risk (up to 80%). Inter village analysis showed that Kansala farmers possessed low degree of gambling nature as compared to Partapur farmers. Caution in times of ambiguities was also noticed. Few were taking unduly higher risks like going for sowing earlier than recommended time of sowing like sowing of cucumber during January to mid-February even with risks of frosts to bring their produce early in market and fetch the premium price. In Hasangarh also the farmers were growing early flowers in sandy soils without ensured irrigation and far flung market for flowers. Poot *et al.* (2005) and Vesala and Peura (2002) also concluded similar findings and reported that farm entrepreneurs, who have diversified, score high on risk attitude.

Business houses from all over the world are making more and more investments into the agricultural sector for unleashing its existing potentialities as well as for exploring the untapped areas. The interwoven connection of entrepreneurial life cycles lies in innovative actions of risk-seeking, achievement motivation, the growth orientation to fulfill their aspirations, knowledge, investments in potential entrepreneurs and of course proper identification of the opportunity according to set parameters of enterprise launching. Proper motivation supported by technical backstopping by research institutes, forward and backward linkages for financial needs, learning-by-doing, supported by network collaboration may enhance the competitive potential of new entrepreneurs. Although information and knowledge are important asset in an enterprise, but the economic evaluation of such knowledge along with the desirable psychological traits of the potential entrepreneurs need to be supported and motivated through examples, role models, expert opinion and counseling. The access to opportunities, information and resources can go a long way in developing agripreneurship in farmers.

## REFERENCES

Ali I, Tajddini K, Rehman K, Ali J F and Ahmed I. 2010. University student's inclination of governance and its effects on

entrepreneurial intentions: An empirical analysis. *International Journal of Trade, Economics and Finance* 1(1): 36–9.

- Ajzen I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50 (2): 179–211.
- Atkinson Joh W. 1957. Motivational determinants of risk taking behavior. *Psychological Review* 64: 359–72
- David C McClelland. 1961. Methods of measuring human motivation. (In) *The Achieving Society*, pp 41–43. John W Atkinson (Ed). Princeton NJ and D Van Nostrand.
- Dollinger M J. 2003. Entrepreneurship – strategies and resources. Pearson International Edition, New Jersey.
- Kuratko Donald, Richard F and Hodgetts M. 2001. Entrepreneurship – A contemporary approach. Harecourt College Publishers, New York, USA.
- Maina F W, Karugia J T, Nyikal R A, Kimani S K. 2012. Enterprise prioritization and implications for soil fertility management and value chain research – the case of Kiambu district. available at <http://www.kari.org/conference/conference12/docs/ENTERPRISE%20PRIORITIZATION%20AND%20IMPLICATIONS%20FOR%20SOIL%20FERTILITY%20MANAGEMENT.pdf>
- McElwee G. 2006. Farmers as entrepreneurs: Developing competitive skills. *Journal of Developmental Entrepreneurship* 11(3): 187–206.
- Muhammad Safdar, Omoanghe S Isikhuemhen and Basarir Aydin. 2009. Promoting alternative enterprises: Assessing farmers' feeds in research, education, and extension. *Journal of Extension* 47(6). available at <http://www.joe.org/joe/2009december/rb5.php>.
- Nain M S, Singh R, Sangeetha V, Chandel S S, Kumar P and Peer J A. 2013. Strategies for entrepreneurship development through fruit production in J&K state. *Agricultural Science Digest* 33(3): 165–71.
- Poot E H, Balk-Theuws, Buck A J de, Buurma J S, van der Lans C J M and de Wolf P L. 2005. *Voorlopers en voortrekkers, ondernemerschap in netwerken - case plant (Pioneers and guides, entrepreneurship in farmers' networks, in Dutch)*. Wageningen University and Research Centre.
- Rath J. 2000. Introduction: immigrant business and the economic, politico-institutional and social environment. (In) *Immigrant Business: The Economic, Political and Social Environment*, pp 1–19. Rath J (Ed). Macmillan Press, London.
- Rantamäki-Lahtinen L. 2002. *Finnish Pluriactive Farms – the Common But Unknown Rural Enterprises*. (In) *Rurality, Rural Policy and Politics*. Tanvig H W (Ed). Working paper 1/02. Danish Centre for Rural Research and Development, Esbjerg.
- van der Ploeg J D. 2003. The virtual farmer. Past, present, and future of the Dutch peasantry. Royal van Gorcum, Assen.
- Vesala K M and Peura J. 2002. *Yrittäjäidentiteetti monilaisilla maataloilla (Entrepreneurial Identity among On-Farm Business Diversifiers)*. University of Helsinki, Rural Research and Training Centre.
- Wortman Jr M S. 1990. A unified approach for developing rural entrepreneurship in the US. *Agribusiness* 6(3): 221–36.
- Wortman Jr M S. 1990. Rural entrepreneurship research: integration into the entrepreneurship field. *Agribusiness* 6(4): 329–44.