

Horticulture Based Entrepreneurial Development in Uttar Pradesh: Constraints Analysis and Strategic Suggestions

Rabeesh K. Verma¹, J.P. Sharma^{2*}, R.R. Burman³, Promod Kumar⁴, R.S. Bana⁵ and Arpan Bhowmik⁶

¹Assistant Professor and Incharge, Department of Agricultural Extension, CCR (PG) College, Muzaffarnagar, Uttar Pradesh

²Vice Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, J&K

^{3,4&5}Principal Scientist, ICAR-Indian Agricultural Research Institute, New Delhi

⁶Scientist, ICAR-Indian Agricultural Statistics Research Institute, New Delhi

ABSTRACT

The horticulture sector has been considered as the sun rising sector of Indian agriculture because of its contribution to livelihood and nutritional security. State of Uttar Pradesh has been one of the largest producers of fruits and vegetables in India. Though the state's production potentials are in a high range, nearly 20-25 per cent of the farm produce gets destroyed due to the lack of entrepreneurial development in terms of processing and value. The present study was conducted in the purposively selected Agra and Lucknow districts of Uttar Pradesh to identify the major constraints in the entrepreneurial climate setting with a sample size of 120. The study results point that lack of awareness about various horticulture-based entrepreneurial avenues (WMS=3.78) and technical inexperience about various aspects of processing (WMS=3.63) were the major restraining factors. The present study also suggests some strategic options to overcome the hurdles in the entrepreneurship climate setting process to enhance farmers' income.

Keywords: Constraint, Technical, Marketing, Socio-personal, Entrepreneurial development

INTRODUCTION

In the Indian economy, the horticultural sector's importance can be pictured through its contribution to India's agricultural GDP. It nearly contributes 30 percent of agrarian GPD from merely 8.5 per cent of the total cropped area (ICAR, 2020). At present, India is the second-largest producer of fruits and vegetables in the world after China. (GOI, 2019). Owing to its contribution, the horticulture sector's development in the country has been accorded high priority in recent years (Jha *et al.*, 2018). India's Uttar Pradesh state is blessed with diverse agro-climatic conditions conducive to the cultivation of varied horticultural crops around the year. Uttar Pradesh is a major producer of fruits and vegetables, accounting 20 per cent to 25 per cent of their total production of fruits, vegetables, spices, and flowers (NHB, 2018). Uttar Pradesh is the largest producer of mango in the country, with nearly twenty-four percent contribution in total production (Gurjar *et al.*, 2017). Despite being one of the largest producers of horticultural crops in India, the post-harvest losses in Uttar Pradesh are recorded relatively high, with a range of 20-25 per cent of total horticultural produce

(Kumar *et al.*, 2018). In mango alone, the post-harvest losses are quite staggering range, i.e., nearly 19.5 percent (Gurjar *et al.*, 2017). The quantum of post-harvest losses recorded in Uttar Pradesh demands urgent intervention like horticulture-based value chain creation and entrepreneurship development. It can further reduce food wastage and enable the farmers to earn more income. Before initiating and implementing the strategies, it is essential to analyse the present condition to make suitable policy adoptions. Against these backdrops, the present study was planned to analyze the significant constraints encountered or perceived by the stakeholders in initiating/establishing the small-scale entrepreneurial venture. The study also points to specific strategies to promote holistic horticulture-based entrepreneurial development in the state.

MATERIALS AND METHODS

The present study was conducted in purposively selected two districts, namely Agra and Lucknow of Uttar Pradesh. These two districts were the largest producer of Potato and Mango, respectively, in the state. From each district, two blocks and from each block, 30 farmers who were

*Corresponding author email id: jpscatat@gmail.com

engaged in horticulture production were selected through a simple random sampling technique. Thus total sample size for the present study was 120. A comprehensive list of constraints and restraining factors in the entrepreneurship development process in horticulture was prepared through a detailed literature review, discussion with experts, and pilot study. The identified constraints were grouped into technical, infrastructural, marketing, economic and socio-personal dimensions. A five-point Likert-like rating scale (Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree) was developed to elicit the response from the farmers. Based on the farmers' rating, ranks were assigned as per the weighted mean score in descending order for each of the identified constraints.

RESULT AND DISCUSSION

Anything that prevents or limits an individual or group from adopting an intervention or restrain them from tapping the intended virtues of an intervention (Jasna *et al.*, 2016) can be termed a constraint. Through this study's results, an attempt was made to delineate the major constraints in establishing and running a hortibased entrepreneurial enterprise as perceived by the farmers. From Table 1, it is well evident that among the identified nine technical constraints, the most severe one as perceived by the farmers is the lack of awareness regarding various horticultural-based entrepreneurial avenues (WMS = 3.78). According to the farmers' opinion, their entrepreneurial activities are severely restrained due to the lack of technical expertise regarding various aspects of processing and value addition (WMS = 3.63). It was followed by the lack of

adequate information and technical support (WMS = 3.47). The farmers perceived that the lack of suitable varieties for processing (WMS = 2.68) and lack of year-round supply of raw material for the value addition activities (WMS = 2.54) were minor constraints. The study's findings are in conformity with the results given by Kumar *et al.* (2018).

In the case of infrastructure related constraints (Table 2), farmers perceived that unaffordability of the initial establishment cost for the establishment of an enterprise was the most severe constraint (WMS = 3.61). The interrupted power supply with a high price (WMS = 3.41) and a lack of sufficient integrated cold chain/ storage (WMS = 2.99) were also identified as severe constraints. Due to the presence of high connectivity and transportation facility available with the state and the proximity to the national capital region, farmers rated the inadequate facility of transportation (Mean score = 2.83) and high cost of transportation (mean score = 2.5) as the least severe constraints.

Data presented in Table 3 revealed that the fluctuating price of raw material was the most severe marketing constraint (WMS = 3.91). It was followed by inadequate market infrastructure (WMS = 3.88) and lack of skill to advertise and build a brand for their products (WMS = 3.83). Similarly, the fate of the produce's distress sale (WMS = 3.75) difficulty in predicting the demand and price of the products (weighted mean score=3.28) were other significant perceived constraints of farmers. Simultaneously, the presence of intermediaries and problems associated

Table 1: Technical constraints in horticulture based entrepreneurial development in Uttar Pradesh (n=120)

S.No.	Statement	WMS	SD	Rank
1.	Inability to afford the cost of machineries	3.47	1.01	IV
2.	Lack of year round supply of raw material	2.54	0.98	IX
3.	Lack of suitable varieties for processing	2.68	0.97	VIII
4.	High seasonality and perishability of products	3.22	1.03	VII
5.	Lack of technical expertise regarding various aspects of processing & value addition	3.63	0.93	II
6.	Lack of awareness regarding various horti-based-entrepreneurial avenues	3.78	0.75	I
7.	Poor support for diversification of enterprise	3.45	0.96	V
8.	Lack of training programmes in their locality	3.35	0.65	VI
9.	Lack of adequate information and technical support	3.47	0.82	III

WMS= Weighted mean score, SD=Standard deviation

Table 2: Infrastructural related constraints in horticulture based entrepreneurial development in Uttar Pradesh (n=120)

S.No.	Statement	WMS	SD	Rank
1.	Inadequate facility of specialized transportation	2.83	0.98	VI
2.	Lack of sufficient integrated cold chain/storage facilities	2.99	1.03	III
3.	Interrupted power supply with high cost	3.41	1.08	II
4.	High cost of transportation	2.57	1.00	VII
5.	Lack of adequate quality control and testing facilities	2.96	0.83	V
6.	Lack of availability of processing cluster	2.98	0.99	IV
7.	Unaffordable initial establishment cost	3.61	0.90	I

WMS= Weighed mean score, SD=Standard deviation

Table 3. Marketing constraints in horticulture based entrepreneurial development in Uttar Pradesh (n=120)

S.No.	Statement	WMS	SD	Rank
1.	Fluctuating price of raw material	3.91	0.84	I
2.	Inadequate market infrastructure	3.88	0.83	II
3.	High marketing margin by the middlemen	2.60	0.92	IX
4.	Difficulty in predicting demand and price of products	3.73	1.00	V
5.	Difficulty to meet the quality standards of processed products for export purpose	3.28	1.08	VII
6.	Distress sale of products	3.75	0.99	IV
7.	Lack of organized marketing mechanism of products	3.55	0.97	VI
8.	Lack of skill to advertise and brand	3.83	1.05	III
9.	Problem in negotiating contracts	3.13	0.99	VIII

WMS= Weighed mean score, SD=Standard deviation

with the negotiation of contracts were perceived as the least severe constraints. A similar study by Vinayak (2009) reported that lack of price policy suitable procurement policy for resin by the government was the major constraints faced by resin entrepreneurs. A similar observation has been made by Babyowna (2018) in his study on constraints in grapes production.

Among the economic constraint (Table 4), lack of information about the credit facility was perceived as the most critical constraint (WMS = 4.13), which was followed by lack of timely availability of credit (WMS = 3.61) and high rate of interest on credit (WMS = 3.56). Results showed that prevalence of financial illiteracy (WMS = 3.10), a long payback period of the investment (WMS = 3.08), and unavailability of insurance coverage for the horticultural crops (WMS = 3.05) were the least critical economic constraints faced by the farmers in the study area. Rachdi (2006), in a study, revealed that lack of access to finances and the quantum of the administrative burden faced by

them while engaging in an entrepreneurial activity were the most severe problems faced by any entrepreneur.

Socio-personal elements are very crucial for entrepreneurship development among the farming community. Table 5 revealed that lack of time to engage in entrepreneurial activities other than production (WMS = 3.73) was perceived as the most critical socio-personal constraint for the horticultural farmers in the study area. It was followed by a lack of strong urge to start a new enterprise (WMS = 3.55) and a lack of confidence among the farmers (WMS = 3.45). Other significant socio-personal constraints were lack of internal locus of control (ranked 4th with WMS = 2.96) and resistance to change from conventional farming methods to modern farming methods. Fear of failure in new ventures (mean score=2.68) and lack of independence in decision-making (WMS = 2.26) were found to be the least critical socio-personal constraints for horti-based entrepreneurial development in the study area.

Table 4: Economic constraints in horticulture based entrepreneurial development in Uttar Pradesh (n=120)

S.No.	Statement	WMS	SD	Rank
1.	High operational & managerial cost	3.30	1.13	VII
2.	High cost of raw materials	3.36	1.084	IV
3.	Relatively high rate of interest on credit	3.56	0.92	III
4.	Lack of supporting price policy	3.31	1.02	VI
5.	Long payback period in investment	3.08	0.92	IX
6.	Lack of information about credit facility	4.13	0.82	I
7.	Lack of disbursement of amount in oneinstallment	3.35	0.98	V
8.	No insurance coverage of horti-crops	3.05	1.12	X
9.	Lack of timely availability of credit	3.61	1.02	II
10.	Prevalence of financial illiteracy amongfarmers	3.10	0.99	VIII

WMS= Weighed mean score, SD=Standard deviation

Table 5: Socio-personal constraints in horticulture based entrepreneurial development in Uttar Pradesh (n=120)

S.No.	Statement	WMS	SD	Rank
1.	Lack of time to engage in activities other thanproduction	3.73	0.96	I
2.	Lack of internal locus of control	2.96	1.12	IV
3.	Lack of independence in decision making	2.26	1.00	VII
4.	Fear of failure in new venture	2.68	0.97	VI
5.	Resistance to change from conventional way of farming	2.81	1.06	V
6.	Lack of strong urge for starting new enterprise	3.55	0.84	II
7.	Lack of confidence	3.45	0.90	III

WMS= Weighed mean score, SD=Standard deviation

Strategic suggestions for creating an entrepreneurial:

Strategies framed with a proactive approach at policy level and field extension level helps in bringing considerable improvement in entrepreneurial knowledge, skills, abilities, and aspiration of farmers (Nain *et al.*, 2013). This study brings some strategic suggestions for the horticulture sector's entrepreneurial development, particularly in fruits and vegetables-based processing and value addition.

❖ Information exchange and capacity development:

Awareness generation among farmers and consumers about processed hortiproducts and sensitizing producers about post-harvest losses and educating them about the hows of reducing it, mainly through value addition, may help create an entrepreneurship development atmosphere. The information supply should be supplemented by the organization of training for developing entrepreneurial values/abilities among the farmers/ producers and rural youth. There should be a well-integrated mechanism to provide complete information support (technical and

general) about the aspiring individual's entrepreneurship development. Development of e-model platform like ITC e-choupal initiative to provide timely and accurate information on market and other aspects concerning with farmer

❖ **Education and Research:** Success stories of farmers turned entrepreneurs should be extensively covered in print media and electronic media to motivate fellow farmers and to give knowledge to the new entrance. Some special courses needs to be designed for bachelor degree students in agriculture and horticulture, giving an exposure about the potential of Horti-based entrepreneurial opportunities. KVK should be reformed as a model training center for capacity building of rural youth for Horti-start up through sensitization workshop and vocational training followed by handholding support in technology handling and market networking. Encourage interdisciplinary research to address various issues (production, post-harvest management,

quality, and marketing aspects) which demands holistic approach for solution

❖ **Infrastructure creation:** The creation of suitable infrastructure for quality testing of the products is an urgent need. Some infrastructure like training institutes for providing technical and managerial supports for the interested innovative farmers' to start the fruit and vegetable processing industry and promoting the adoption of best practices (of processing, packaging, storage, and transportation) in the industry can be planned for its development. The existing system needs some orientation (Single window approach) to guide potential entrepreneurs for legal and administrative procedures. Establishment of Agri-Incubation Centres at the district level and creation of supply chain network viz. cold chain, dry storage, packaging, logistics, back and front-end infrastructure, expansion of processing capacities through financial support facilitation etc., are need of the hour. A suitable platform for promoting the farmers-industry connect to explore cooperation and collaboration methods needs to be created. Another possible option for the entrepreneurial climate creation is the establishment of Mega food parks/ processing clusters with adequate financial incentives and strong backward and forward linkage

CONCLUSION

To enhance the farmer's income, ensure nutritional security, and reduce the post-harvest losses of horticultural produce, mainly fruits, and vegetables, it is essential to promote hortibased entrepreneurial development. Though there are considerable prospects in horti-based entrepreneurial setup, it faces many constraints. It is crucial to identify each constraint to reduce its effect at a lower threshold level. The study reveals the major limitations perceived by farmer of Uttar Pradesh in entrepreneurship development in the hortisector. Lack of awareness about various aspects of fruit processing and value addition, high initial establishment cost, inadequate market infrastructure and marketing facilities, lack of timely credit facility availability were major limitations. To overcome these specific limitations, it is very important to sensitize producers and rural youth about prospects of the horti-based enterprise through exposure to successful entrepreneurs farms, post-harvest value addition technologies based on vocational training, etc. The study suggested the need for infrastructure creation at the hubs of production to reduce the farm-level losses and realize the better price for the produce by the farmers through wise marketing decisions.

REFERENCES

- Anonymous. 2018. National Horticulture Database. www.nhb.org.in. Ministry of Agriculture and Farmers Welfare, Govt. of India.
- Babyowna, R. and P. Veerachamy. 2012. Cost of Production of Grape in Dindigul District, Tamil Nadu. *Language in India*, 12(5).
- GOI. 2019. Horticultural statistics at a glance 2018. <https://agricoop.nic.in/sites/default/files/Horticulture%20Statistics%20at%20a%20Glance-2018.pdf>
- Gurjar, P.S.; A.K. Verma and A. Verma. 2017. Study of Post-harvest losses and Marketing channel of fresh mangoes in Uttar Pradesh. *Agriculture situation in India*, 42(2),: 339.
- ICAR. 2020. Horticultural Division. [https://icar.org.in/content/horticultural_division#:~:text=The%20Horticulture%20\(fruits%20including%20nuts,30.4%20per%20cent%20to%20GDP](https://icar.org.in/content/horticultural_division#:~:text=The%20Horticulture%20(fruits%20including%20nuts,30.4%20per%20cent%20to%20GDP)
- Jasna, V.K.; R.R. Burman; R.N. Padaria; J.P. Sharma; E. Varghese; E. Chakrabarty; B. Loganandan and S. Kumar. 2016. Constraints in adoption of climate resilient agriculture In Rainfed Agro-ecosystem. *Indian Journal of Extension Education*, 52(3 &4): 30-34.
- Jha, G.K.; A. Suresh; B. Punera and P. Supriya. 2019. Growth of horticulture sector in India: Trends and prospects. *Indian Journal of Agricultural Sciences*, 89(2): 314-321.
- Kumar, M.; S.N. Singh; R.R. Yadav; R.K. Doharey; A. Kumar; D.P. Singh and S. Kumar. 2017. Constraints analysis of mango growers in Saharanpur district of Uttar Pradesh. *Journal of Pharmacognosy and Phytochemistry*, 6(2): 265-267.
- Nain, M.S.; R. Singh; V. Sangeetha; S.S. Chandel; P. Kumar and J.A. Peer. 2013. Strategies for entrepreneurship development through fruit production in Jammu and Kashmir state. *Agricultural Science Digest-A Research Journal*, 33(3): 165-171.
- NHB. 2018. Horticultural Statistics at a Glance 2017. [http://nhb.gov.in/statistics/Publication/Horticulture%20At%20a%20Glance%202017%20for%20net%20uplod%20\(2\).pdf](http://nhb.gov.in/statistics/Publication/Horticulture%20At%20a%20Glance%202017%20for%20net%20uplod%20(2).pdf)
- NHB. 2018. <http://nhb.gov.in/StatisticsViewer.aspx?enc=CaSOU6CTRn/Ty9tOdH8Lkgol2QGWss6940QLGSpY2T0m6tZbw4/y0R84pftyqIGN>
- Rachdi, F. 2006. L'entrepreneuriat féminin au Maroc : une étude exploratoire. Congrès International Francophone en Entrepreneuriat et PME (pp. 1-19). Fribourg: Association Internationale de Recherche et PME en Entrepreneuriat.
- Vinayak, R.N. 2009. A multidimensional study of rasin entrepreneurs in Nashik district of Maharashtra. M.Sc. Unpublished Thesis, Division of Agricultural Extension, IARI, New Delhi.