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Training need assessment of farm women on value addition of horticulture crops in Karnataka

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Abstract
In India only 2 - 3% of the fruits and vegetables are processed and between 30 to 40 per cent of them are wasted owing to inadequate post-harvest losses and poor packing. Value addition and processing plays a vital role in minimizing post harvest losses. Therefore the study was conducted to assess the training needs of farm women involved in horticulture crop production to indentify existing knowledge gaps and recommend appropriate skill development interventions on value addition. The assessment involved surveys using interview schedule with farm women across selected villages of Malur, Mulbagilu, Bagarpet and Srinivaspura Talukas in Kolar district of Karnataka State. The findings revealed that Tomato cultivation played a vital role in the agricultural economy of Kolar district, Karnataka, farm women in the region have limited involvement in the value addition of horticultural crops, most respondents were aware of basic tomato processing, pickle making of mango and lemon. Their technical knowledge and practical skill in advanced value added practices such as dehydration, sauce, ketchup making, marketing, packaging were inadequate. Additionally, constraints such as lack of access to training, limited market information, insufficient infrastructure were identified. The study concluded that there was a significant need for structured, hands-on training programme tailored to local conditions. Empowering farm women through capacity building in value addition will not only enhance their economic status but also contribute to the development of rural agri- based enterprises in the region. Value addition holds significant potential for enhancing income, reducing post-harvest losses, improving livelihood security and sustainability.

Keywords: Intervention, capacity building, empowerment, training need assessment

Introduction
India is the second largest producer of vegetables in the world next only to China and accounts for about 15% of the world production of vegetables. India produced 191.77 million metric tonnes of vegetables and 99.07 million metric tonnes of fruits (2019–20, according to the National Horticulture Database (Second Advance Estimates)) issued by the National Horticulture Board. According to FAO (2021) [2], India is the top producer of ginger and okra among vegetables and ranks second in the production of potatoes, onions, tomatoes, brinjal, cabbage, and cauliflower. Only 2 to 3% of the fruits and vegetables in India are processed and between 30 to 40 per cent of them are wasted owing to inadequate post-harvest losses, subpar processing and poor packing. In order to avoid post-harvest losses, farm women and young people should receive training on value addition.

Once farm produce is brought home, the responsibility rests with women folk. Women play an active role in various production and postproduction activities of horticultural crops. The number of women engaged in agriculture and allied sectors has increased continuously in the past two - three decades due to various factors such as migration of men to urban areas, increase in the demand of labour force in construction and other sectors. It is necessary to assess the training needs of farm women who are involved in horticultural crop production before designing the interventional programmes for capacity building on value addition to prevent the post harvest losses during glut period. Therefore the research was conducted to assess the training needs of farm women involved in crop production in Kolar district of Karnataka State.

Methodology

Training need of respondents was operationally defined as the difference between what is desired performance and what do they possess before the training. The variable was quantified using the responses from the respondents. A total sample of 300 farm women involved in crop production were selected for the study.

To measure the extent of need for capacity building of farm women five dimensions of capacity building were included. They were a) need for technical aspects b) need for marketing aspects c) need for access to social information d) need for physical facilities availability e) need for financial management. The dimensions were measured on a three-point rating scale. Scores were assigned as 1, 2 and 3 for less required, moderately required and most required respectively.

Results and Discussion

Technical aspects

The data represented in the table 1 showed that almost all the content related to technical aspects of value addition were mostly required by the respondents which clearly states that mean score varied from 2.76 to 2.28 based on which rank were assigned. Value added products of tomato got highest mean score of 2.76 followed by increasing the shelf life tomatoes, handling of modern equipments for harvesting, were ranked 1 to 9 respectively.

Table 1: Training needs of respondents on Technical aspects N=300

S. No	Activities	Less Required	Moderately Required	Most required	Mean score	Rank
1	Demonstration on value added products of Tomato	0	72	228	2.76	I
2	Increasing shelf-life of horticulture produce	13	69	218	2.68	II
3	Handling of modern equipments for harvesting	28	45	227	2.66	III
4	Different post harvest activities (Curing, Cooling, Sorting, Grading)	27	67	206	2.60	IV
5	Use of packaging materials	33	77	190	2.52	V
6	Labeling and Branding of processed products	45	56	199	2.51	VI
7	Determination of maturity index	58	45	197	2.46	VII
8	Storage of processed products	56	60	184	2.43	VIII
9	Transportation of products	78	60	162	2.28	IX

It is evident from the table 1 that training on value added products of tomato got I rank followed by increasing the shelf life of horticulture produce and handling of modern equipments for harvesting got II and III rank respectively. This might be due to the reason that respondents had less exposure to trainings on technical aspects of value addition. Women expressed that their need of training to reduce the post harvest losses of tomato by extending it's shelf life through value addition. The results are in agreement with Netravathi (2008) [4].

Marketing aspects

The data represented in the table 2 shows that almost all the content related to marketing aspects of value addition were mostly required by the respondents which states that mean score ranged from 2.55 to 2.28 based on which rank were assigned. Market location and selling beyond farm gate with highest mean score 2.55, Credit sources and procurement procedures, Production timing, were ranked 1 to 5, respectively.

Table 2: Training needs of respondents on marketing aspects N=300

S. No.	Activities	Less Required	Moderately Required	Most required	Mean score	Rank
1.	Identification of suitable market	34	68	198	2.55	I
2.	Credit sources and their procurement procedures	56	79	165	2.36	II
3.	Demand assessment	75	46	179	2.35	III
4.	Market forecast	73	55	172	2.33	IV
5.	Current and future marketing prices	63	89	148	2.28	V

With respect to marketing related training needs the respondents had high aspiration for marketing of value added products beyond farm gate and market location got I rank followed by credit sources and procurement procedures got II rank and Production timing of tomatoes got III rank. This might be due to overcome the problem of commission agents who received commission of 8 -10 per cent from buyers and sellers. Direct selling based on the demand was their basic training need on marketing. The results are similar to Nethravathi (2008) [4].

Social information

The data represented in the table 3 shows that almost all the content related to social information aspects of value addition were mostly required by the respondents with mean score ranging from 2.47 to 2.33 based on which rank were assigned. Risk management with highest mean score 2.47, specialised commodities training need, disaster management training need were ranked 1 to 5, respectively.

Table 3: Training needs of respondents on social information aspects N=300

S. No.	Activities	Less Required	Moderately Required	Most required	Mean score	Rank
1.	Risk Management	46	67	187	2.47	I
2.	Specialized commodities	58	54	188	2.43	II
3.	Disaster management	56	63	181	2.42	III
4.	Community based practices	71	56	173	2.34	IV
5.	Availing Insurance	78	45	177	2.33	V

With respect to table 7 it is clearly stated that risk management was the major training need as expressed by majority of the respondents. This might be due to the reason that respondents were in need of enhancing their knowledge so as to prepare

themselves to face challenges during uncertainties. The results are similar to results of Rahman *et al.* (2009) [5].

Physical facilities

The data from the table 4 shows that almost all the content related to physical facilities required for value addition training need were most required by the respondents mean score ranged from 2.48 to 2.32 based on which rank were assigned. Sales centres & wholesale & retailer outlets with highest mean score of 2.48, processing building and processing materials/equipment were ranked 1 to 5, respectively.

Table 4: Training needs of respondents on physical facilities N=300

S. No	Activities	Less Required	Moderately Required	Most required	Mean score	Rank
1.	Sales centers & Wholesale & Retailer outlets	46	65	189	2.48	I
2.	Processing building	58	68	174	2.39	II
3.	Processing materials/equipment	65	57	178	2.38	III
4.	Transport/vehicles	69	89	142	2.24	V
5.	Cold storage	57	90	153	2.32	IV

It is revealed from table 4 that sales centres & wholesale & retailer outlets got I position followed by processing building got II and processing materials/equipment got III position in the training need on physical facilities required by farm women. The respondents could not approach concerned authorities so they expressed they need training on these aspects. Therefore they needed training on construction of processing building and machineries procurement. The results are similar to results of Rahman *et al.* (2009) [5].

Financial management

The data from the table 5 shows that almost all the content related to financial management skill required for value addition training need were moderately required by the respondents mean score ranged from 2.82 to 2.07 based on which rank were assigned. Procurement of capital with highest mean score of 2.82, processing plant establishment, Benefit cost ratio calculation were ranked 1 to 5, respectively.

Table 5: Training needs of respondents on financial management skills N=300

S. No.	Activities	Less Required	Moderately Required	Most required	Mean score	Rank
1.	Procurement of Capital	5	45	250	2.82	I
2.	Processing plant establishment	10	90	200	2.63	II
3.	Benefit cost ratio calculation	14	102	184	2.57	III
4.	Availing loans from bank	32	104	164	2.44	IV
5.	Purchase of land in name of owner	58	164	78	2.07	V

Procurement of capital from various sources got I position followed by establishment of processing plant got II and Benefit Cost Ratio calculation got III position. This may be due to the reason that extent of variation in the income. Rates for produce are high during peak periods *i.e.* at season and in glut period, producers not fetch good prices so the tomato producers may interested to start the processing centres which require financial aspects. For this reason they might have expressed training need for the financial management skill so that the respondents can invest money to establish processing units. The results are in line with the study conducted by Rahman *et al.* (2009) [5].

Conclusion

Training Need Assessment conducted among farm women reveals significant gaps in technical knowledge; modern value addition processing practices and market linkages remains limited. By addressing these training needs, farm women can be empowered, post harvest losses can be reduced and they can actively participate in decision making processes within the agricultural value chain. It is necessary to initiate women-focused development programmes including involvement at a larger scale of women in ever increasing economic activities through better access to provide resources, inputs and services.

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