Research Article

Strengths and Weaknesses of Trainings Imparted to Peri-urban Vegetable Growers in the Punjab-Pakistan

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Abstract | Balanced human diet is a prerequisite for health and vegetables supply the food nutrients needed for the balanced human diet. More than 36 varieties of vegetables are grown on large scale in Pakistan. Among different provinces of Pakistan, Punjab holds the largest share of 63 and 74% in vegetables' area and production, respectively. Peri-urban vegetable production is gaining importance in all over the world as it helps the farmers to access inputs and market outputs easily. Lack of sufficient training and low technical efficiency are some common barriers in low productivity of vegetables in Pakistan. This study assesses strengths and weaknesses of trainings conducted by public sector extension in peri-urban areas of Faisalabad, Pakistan. Two hundred and eight vegetable growers were interviewed using a validated and reliable interview schedule. Findings reveal that cooperation of training staff was ranked first followed by use of simple and familiar words during training sessions and provision of timely information in case of strengths of training programs. While looking into weaknesses of trainings, vegetable growers disclosed the unavailability of literature and bad condition of training equipment the top most weaknesses of trainings. On basis of results it is recommended that Extension Field Staff (EFS) should organize more trainings equipped with appropriate literature and skilled trainers for the enhanced awareness.

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Introduction

Pertaining to the human needs vegetables cultivation has increased 60% in last two decades around the world but developing countries are prominent in this regard. Of the total cultivable land in the world, 1.1% is occupied by the cultivation of vegetables and Europe and Central Asian regions entail 12% of the total area under vegetables and contribute 14%to the global production of vegetables (FAO, 2010). Vegetables are the chief source of micro and macro nutrients required for the balanced human physique (Govt. of Punjab, 2013). Vegetables are also a source to outweigh the vulnerability to different diseases by lowering cholesterol level and reducing the accumulation of carcinogenic substances in the human body (Stangeland et al., 2009).

Pakistan, a promising economy in south has hefty reliance on agriculture for the economic sustainability

and strengthening of livelihoods. More or less thirty-six varieties of vegetables are grown commercially in Pakistan (GoP, 2006). The major vegetables grown in the country are potato, onion, chilies, tomato, turnip, okra, carrot, cauliflower, peas and tinda gourd, covering 78% of the total area under vegetables (GoP, 2012). Punjab, Sindh, Baluchistan and Khyber Pakhtuhkhawa (KPK) are four provinces of Pakistan and Punjab is regarded as breadbasket being prominent figure in terms of agriculture. Shaheen et al. (2011) had reported 63% area under vegetables in the Punjab and contributing 74% of the total vegetables production in the country. Whereas, Khokhar (2014) reported cultivation of vegetables on 367,000 hectares in the Punjab province.

If the vegetables prices remain lower the access to the fresh vegetables will increase. Thus, the extended level of production can ensure the lower prices and escalated access to the vegetables (GoP, 2006). However, in essence the situation is inverse as production of vegetables is confronted with number of challenges. Ahmed et al. (2003) had identified that a family size, use of fertilizers and interaction of variety with pesticide sprays had significant impact on vegetables productivity. Food security and poverty circles prominent issues as well with the noteworthy impacts. Globally, efforts are being made to alleviate poverty and reduce food insecurity through improving on farm vegetables production (Ali and Hau, 2001). Like cultivation of vegetables in plain fields, urban areas, backyard, cultivation in peri-urban has attained global attention as it helps farmers to access inputs and market output at ease (Gockowski et al., 2008).

Pakistan falls among those countries which have required resources but the vegetable production is yet below potential. Along with various plights, technical inefficiency of farmers in wake of low productivity of vegetables cannot be ignored. Inadequate trainings and low technical efficiency of farmers has been perceived as a factor to low productivity of vegetables by Baksh et al. (2007). Trainings had an important role in building the farmers capacities, raising their level of awareness and providing them with modern knowledge to catalyze their performance. This research study was planned to analyze the strength and weaknesses of the training imparted to peri-urban vegetables growers. This study urges that identification of strengths and weaknesses of training will help concerned institutions to modify training contents in accordance to the need.

Materials and Methods

Faisalabad is known as Manchester of Pakistan because of textile hub and 3rd populous city of Pakistan. Faisalabad lies in center of Punjab province and susceptible to mix farming operations. Hence, Faisalabad is hub for cultivation of major as well as minor crops including wheat, cotton, sugarcane, rice and vegetables. Vegetable are usually significant income supporter for the residents of Faisalabad. Fruit and Vegetables Development Project (F and VDP) was executed by the government of Punjab from 2005-2010 with aim to enhance quality production of vegetables. Faisalabad was also the core target of this project embarking numerous successes. In this scenario, present study was conducted in Faisalabad district of Punjab Pakistan. Main target area was peri-urban peripherals of study district. The reason behind selection of peri-urban was "ignorance" narrowly focused by researchers and intention was to unveil the huge potential intact with peri-urban areas.

According to Food and Agriculture Organization (2000:10) the peri-urban area is neither entirely urban nor purely rural in the traditional sense; it is almost the partly urbanized rural area. According to geographic distribution of district "the Faisalabad Bypass is constructed around the city to sustain traffic flow without interference from local traffic and is almost 15-20 km away from the main city was considered as the end point of peri-urban area. This widely prevailed area around the city served as study area for the sample selection. This per-urban area is blessed with fertile soil and vegetables cultivation is major focus of inhabitants. Though, vegetables cultivation is mainly on small area. Those small vendors and vegetables producers were assumed targeted population for the study. Population was known and homogenous in nature, hence, complete list of vegetables growers was obtained from the office of Fruit and Vegetable Development Project, Faisalabad. This list served as sampling frame and laid foundation of simple random sampling technique execution. Prior selection of respondents, type of respondents was "the farmers who are registered with fruits and vegetables development project" was defined. There were total 400 registered vegetables growers of F and VDP. From these 400 farmers, 208 farmers were selected as respondents using simple random sampling technique. Simple

random sampling technique reduced the biasness as equal chance of selection was available for each and every farmer. Sample size was determined according the standards of Fitz-Gibbon and Morris (1987) table for determining the sample size.

Questionnaire was adopted as research instrument to collect data. Questionnaire was designed in line with study objectives from synthesis of literature, consultation of previous research studies, peer reviews and discussion with experts. Validity was assessed through face validity technique. Distinguished Professor from the Department of Horticulture, University of Agriculture Faisalabad, and cross checked the contents of questionnaire. On next stage, questionnaire was pre-tested on 20 vegetables growers other than sample size. After incorporation of gaps, questionnaire was finalized for data collection. Data were collected through face to face interview technique followed by qualitative discussion and observation technique. Face to face interview is the most appropriate data collection method for getting information (Radhakrishna, 2007). Data collection was carried out from November 2015 to March 2016. The data collected from the study are useless if not arranged in the form of conclusion in an understandable and comprehensive manner that can only be obtained by appropriate data analysis technique. The raw data were arranged and analyzed through computer software Statistical Package for Social Sciences (SPSS). Data were quantitative in nature; hence descriptive statistics was applied for the interpretation of data. A five-point Likert scale was used to determine the knowledge level of vegetable growers. The scale used was rated as 1=Strongly disagree 2=Disagree 3=Somewhat agree 4=Agree 5=Strongly agree

Results and Discussion

Attributes of trainers

For a fruitful training, trainer and trainee should be committed to develop competencies. Training sessions disseminates information and technical guidance to the participants and for effective dissemination a trainer must be learned and well known to the norms of interactive training. A blend of knowledge, skill and attitude as possessed by the trainer enhances the performance of action (Respondents were asked to respond on different attributes of the trainers and the data in this regard are mentioned in Table 1.

Table 1: *Weighted score, mean, standard deviation and rank order of perceived attributes of trainers.*

Attributes of trainers	Weighted score	Mean	Std. dev.	Rank order
Cooperation	853	4.10	0.78	1
Self confidence	765	3.68	1.01	2
Flexibility	758	3.64	0.92	3
Devotion	734	3.53	1.38	4
Technical knowledge	728	3.50	0.94	5
Communication skills	717	3.45	1.02	6
Interest	689	3.31	0.90	7
Innovativeness	549	2.64	1.07	8

Table 1 shows that cooperation during training session maintained by the trainer appeared leading ($\bar{x}$=4.10) implying a cooperation level falling in high category. Self-confidence, flexibility and devotion were some noteworthy attributes as perceived by the respondents and falling between medium and high category. Technical knowledge, communication skills and interest of the trainer were ranked between medium and high category but the more inclination toward medium category was observed. Innovativeness appeared least ($\bar{x}$=2.64) among different attributes. This indicates a traditional behavior of trainer and paying less focus on innovative approaches. Lakai (2010) was of the view that combination of knowledge, skills and attitude enhances the performance of action. Moreover, Rivera et al. (2009) endorse that professional competency of agricultural extension educator is pre-requisite for successful dissemination of agricultural information among the farming community. Innovative and focused extension educators are supposed to be highly influential among farmers for adoption and diffusion of latest agricultural technologies.

Attributes of training contents

Good subject matter and effective communication are vital for effective teaching. A good message must clearly state its purpose. Messages and contents that are relevant, useful, complete and credible can have a strong impact on the people (Singh et al., 2001). The respondents were asked about different attributes of training contents and the ranking of these attributes is presented in Table 2.

Table 2 indicated that the contents presented in training sessions were timely communicated and perceived clear, compatible, comprehensive, feasible

and useful. More specifically, clarity of the contents appeared prominent ($\bar{x}$=4.22). Compatibility stood on 2nd rank ($\bar{x}$=3.98) and tending towards high level on likert scale. Comprehensiveness was ranked 3rd ($\bar{x}$=3.88. Timely availability and feasibility were other aspects perceived as impactful of above average. Usefulness of contents appeared least with mean value of 2.95. Sulaiman and Davis (2012) concluded that there is dire need of authentic and comprehensive training material to anticipate and deliver quality training program. In addition, Suvedi and McNamara (2012) emphasized the importance of training contents for successful execution of training services to the targeted audience.

Table 2: *Weighted score, mean, standard deviation and rank order of attributes of training contents.*

Attributes of training content	Weighted score	Mean	Std. dev.	Rank order
Clear	878	4.22	0.70	1
Compatible	828	3.98	0.83	2
Comprehensive	806	3.88	0.71	3
Timely	748	3.60	0.83	4
Feasible	741	3.56	0.82	5
Useful	613	2.95	0.89	6

Physical facilities

A message if not properly understood by the target audience cannot achieve its objective. Physical resources and facilities essentially needed for message delivery play an important role in effective communication (Ajayi and Ayodele, 2001). Therefore, respondents were asked about such facilities and the data in this regard are presented in Table 3.

Table 3: *Weighted score, mean, standard deviation and rank order of physical facilities of training.*

Physical facilities	Weighted score	Mean	Std. dev.	Rank order
Conducive environment	941	4.52	0.72	1
Appropriate place	931	4.48	0.63	2
Availability of A.V. aids	909	4.37	0.63	3
Availability of reference material	907	4.36	0.73	4
Adequate seating arrangement	863	4.15	0.74	5

Table 3 indicated that a conducive environment was ranked 1st ($\bar{x}$=4.52). Appropriate place for conducting trainings, availability of A.V. aids, availability of reference material and adequate seating arrangement indicated an impact between high and very high categories. Chepkonga (2017) revealed that provision of inadequate physical facilities prohibits effective participation of stakeholders in different training activities. Meanwhile, Khan and Iqbal (2012) also found that poor availability of physical facilities lead towards ineffective learning. Above mentioned researchers have argued that adequate availability of physical facilities enhance the interest level of participants heading towards effective learning.

Strengths of trainings

The training is a term which covers a wide range of activities. The systematic approach to training is a result-oriented process designed to ensure that training is relevant and effective. A good training must be need oriented and conducted in a simple manner that everyone may get benefit from it. The ranking of strengths of trainings conducted by extension department/FandVDP as perceived by the respondents is presented in Table 4.

Table 4 revealed the strengths of the trainings imparted by the EFS to farmers. Cooperation of trainers was ranked 1st ($\bar{x}$=4.71) among various strengths. Use of familiar and simple words during training sessions obtained 2nd rank ($\bar{x}$=4.45). Timely availability of information stood on 3rd rank in the list. Attention to every participant of the training, competency of trainers, use of variety of teaching methods, availability of training material, regularity and punctuality on the part of trainers, encouragement of farmers' participation and need based contents were the aspects ranked above high. Demand driven and participants focused trainings are highly linked with high learning outcomes. Similarly, trainers' attitude, commitment and dedication play an instrumental role in successful execution of training programs (Ganesh and Indradevi, 2015). Participants of training differ in demography, attitude, skills and knowledge so; it is recommended that a trainer must have capabilities to deliver in multi ways benefitting every participant (Jehanzeb and Bashir, 2013).

Weaknesses of trainings

Identification and rectification of the weaknesses can make training more effective and useful for trainees. Therefore, respondents were asked to identify weaknesses in the trainings conducted by extension departments/FandVDP. The data in this regard are presented in Table 5.

Table 4: *Weighted score, mean, standard deviation and rank order of strengths of trainings.*

Strengths	Weighted score	Mean	Std. dev.	Rank order
Training staff is cooperative	979	4.71	0.46	1
Trainers use familiar and simple words	925	4.45	0.61	2
Trainers provide timely information	901	4.33	0.63	3
Every participant is given due attention	897	4.31	0.65	4
Training staffis competent	895	4.30	0.67	5
Variety of teaching methods is used	886	4.26	0.67	6
Availability of training material is ensured by training staff	887	4.26	0.57	7
Trainers are regular and punctual	881	4.24	0.71	8
Trainers encourage farmers' participation	873	4.20	0.40	9
Trainings are need oriented	855	4.11	0.60	10

Table 5: *Weighted score, mean, standard deviation and rank order of weaknesses of trainings.*

Weaknesses	Weighted score	Mean	Std. dev.	Rank order
Literature is not available to all farmers	706	3.39	1.54	1
Training equipment is not in good condition	696	3.35	0.71	2
Trainings are not conducted regularly	598	2.88	1.01	3
Training staff is not friendly with farmers	586	2.82	1.28	4
Preference is given to influential farmers	497	2.39	0.76	5
Training contents are inappropriate	327	1.57	1.44	6

Table 5 highlighted the weaknesses of the trainings imparted to the farmers. Inadequate availability of literature to all farmers appeared major weakness ($\bar{x}$=3.39) as perceived by the trainees. Bad condition of training equipment stood 2nd ($\bar{x}$= 3.35). Inappropriate training contents appeared least on the rank with mean value of 1.57. Mokhtarpour et al. (2016) were of the view that trainings become ineffective when fueled with inadequate reference material and incompetent trainers. Moreover, unavailability of training equipment put bad impression on interest of participants. A study conducted by Agbarevo and Benjamin (2013) unveiled that incompetency of training staff and poor trainer-farmer linkage is a serious concern for effectiveness of training programs. It is therefore, recommended that timely and on-farm training can play an instrumental role in uplifting the technical capacities of vegetable growers. Moreover, trainers must have to equip themselves with need-based information and utilize their efforts for availability of necessary training equipment during training sessions.

Novelty Statement

Our research study had focused the training needs of vegetable growers in peri-urban areas and the findings will help the extension department to look into their weaknesses as identified and focus on these weaknesses for successful training sessions.

Author's Contribution

GH identified the research area and designed a well-structured questionnaire. IA supervised the overall research study and finalized the manuscript. MQI interviewed the respondents along with the principal author and helped conducting focused group discussions. SRZ applied statistical operations on the collected data. MI critically reviewed the manuscript and enhanced the quality of document.

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