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Effect of climate change on entrepreneurship development among landless and marginal farmers through training

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Abstract

Climate change is an emerging area of science; capacity building of rural youth, farmers, and young scientists on simulation modeling, high through put phenol typing, greenhouse gasses measurement, etc. is being taken up through training programs organized in India and sponsoring scientists abroad. Simultaneously, more than 100 training programs have been organized across the country covering 50000 farmers to create awareness on climate change and variability. An investigation was carried out during the May month of 2018 on evaluation of training on backyard poultry. In this programmes farmers are being use of community lands for fodder production during droughts/floods, improved fodder/feed storage methods, preventive vaccination, improved shelters for reducing heat stress in livestock, management of fish ponds/tanks during water scarcity and excess water, etc. The strategic research has been planned at leading research institutes of ICAR in a network mode covering crops, horticulture, livestock, natural resource management and fisheries sectors. A case of entrepreneurship development among land less and marginal farmers at tehsil mawan of Meerut district (U.P.) On the basis of study, it may be concluded that training on disease management of chicks is most important area where training is highly required followed by improved breeding. The findings also showed that education, socio-economic status, scientific orientation, land holding, social participation and marketing intelligence having the positive correlation with amount of knowledge gained by participant. The knowledge gained during the three days training was calculated as 114%.

Keywords: Farming system, marketing intelligence and entrepreneurship

Introduction

Climate change has become an important area of concern for India to ensure food and nutritional security for growing population. The impacts of climate change are global, but countries like India are more vulnerable in view of the high population depending on agriculture. In India, significant negative impacts have been implied with medium-term (2010-2039) climate change, predicted to reduce yields by 4.5 to 9 percent, depending on the magnitude and distribution of warming. Since agriculture makes up roughly 16 percent of India's GDP, a 4.5 to 9% negative impact on production implies a cost of climate change to be roughly up to 1.5 percent of GDP per year. The Government of India has accorded high priority on research and development to cope with climate change in agriculture sector. Both short term and long terms outputs are expected from the project in terms of new and improved varieties of crops, livestock breeds, management practices that help in adaptation and mitigation and inputs for policy making to mainstream climate resilient agriculture in the developmental planning. The overall expected outcome is enhanced resilience of agricultural production to climate variability in vulnerable regions

There is no extension unless people are not changed, and there is no little constructive change unless the people do not cooperate. Extension moves forward only as it is changed with the dynamic energy of earnest men and women seeking answers to problems of everyday life'- "Farmers of the world". As defined FAO the term agricultural extension refer to an informal out of school education service for training an influencing farmer and their families to adopt improved practices in crop and livestock production, management, conservation and marketing. In India agriculture extension has been a central and state government service since 1953 with the establishment of National Extension Service. Agricultural extension system of the country has contributed significantly in the agricultural development. Over the years, it has expanded further and now reaches to almost every nook and corner of the country. The National Agricultural Technology Project (NATP) in the late 90s and in the early years of 21st

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Agricultural Technology Project (NATP) in the late 90s and in the early years of 21st century was a significant effort to overcome the existing weaknesses in the national extension system.

Agricultural extension, in the current scenario of a rapidly changing world, has been recognized as an essential mechanism for delivering knowledge (information) and advice as an input for modern farming besides performing the conventional task of transferring technology packages to the farming community. Hence, in this era of new technological development training of both the extension functionaries and the farmers in the use and application of appropriate technologies should receive topmost priority. Training is one of the most important activities of all the extension works. It primarily addresses the capacity building issues of the extension system. The large network of front-line ICAR-SAU extension system consists of 700 Krishi Vigyan Kendras.

Through, this network 6.5 lak farmers and farm women every year trained in agriculture and allied fields such as crop production, livestock production, plant protection, horticulture, home science, soil and water management and farm machinery etc. The effectiveness of a training programme which is essentially a specific learning process meant to improve the ability of the farmers to enable them to adopt modern agriculture technology, depends on the degree of retention of knowledge acquired through learning process. The main objective of the study was to find out the extent of gain in knowledge immediately after conducting a three days training programme and the role of characteristics of participants towards knowledge gained about backyard poultry among small and marginal farmers, which may be most important component of integrated farming system for employment generation, enhance income and enrich the family diet, the similar results were highlighted by Singh J.P. *et al* (2010) [6] and suggested that integration of such kind agricultural based component of farming system will promote the livelihood security for small land holders.

Methodology

The analysis presented under this study is based on three on and off campus training programme on “back yard poultry” which was organized during the month of May in mawan village of district Meerut (U.P.) In this programme 25 landless farmers from mawana and chota mawana villages were participated. The training methodologies were adopted viz. lecture followed by questions and answers, group discussion, demonstration, practice and instruction through audio visual aids. In order to measure the knowledge level of the farmers no specific knowledge test was used however, some precautions were taken care during preparation of questionnaire with in the syllabus of training. A questionnaire with 20 questions was prepared with the help of subject matter specialists and veterinary officer of line department. For each correct and incorrect answer 1 & 0 score was assigned, the maximum and minimum obtainable score was 10 & 0 respectively for individual participant. During the training pre and post knowledge score of the trainees has been calculated. The gain in overall knowledge has been further calculated as the difference of post and pre knowledge score. In the present study entire analysis is based on change in knowledge. Subramanian V.S. (1976) defined knowledge as a “body of understood information possessed by an individual or by culture”. Knowledge is one of the essential measurements of individual’s behaviour, since the product of learning process is the body of knowledge. The variables

related to personal orientation of the trainees were operational zed in the study. Regarding training needs, trainees were asked to write down their training requirements related to backyard poultry on priority wise and analyzed. As per the priority and obtained score training areas were ranked.

Result and Discussion

On the basis of investigation, it was found from the study that the majority (60%) participants were from 25-40 years age, the whole sample age varies from 25-45 years. Regarding qualification, majority (44%) of the participants were up to the primary standard followed by (32%) participants who can sign only, 16 percent were illiterate and only 8 per cent participants were having metric level of educations. Majority (48 %) of participants were having the experience more than 21 years. 96% participants attended 1-2 training and only 4% participants have attended more than 2 training programmes in different organizations (Table-1).

Table 1: Trainees background information

Items	No.	Percentage
Age (year)		
Low (Up to 40)	8	32
25-40	15	60
>40	2	8
Total	25	100
Education		
Illiterate	4	16
Literate who can sign	8	32
Primary	11	44
Matriculate	2	8
Total	25	100
Experience of rearing of backyard poultry		
Up to 10 yrs	3	12
11-20	5	20
21-40	12	48
>40	5	20
Total	25	100
Training attended		
1-2	24	96
>2	1	4

Table 2 reveals the score range, total obtained score and mean score of before exposure, after exposure and knowledge added of all the participants in the training programme. It was found that before exposure score range was 1-4 and total knowledge obtained score was 97, after exposure score range was 3-8 and obtained score was 211, the score added was 114 and the knowledge increase was 118 percent. Khuspe (1963) [1] concluded on the basis of a study undertaken on knowledge of paddy growers about Japanese method of paddy cultivation that the knowledge score was 6 out of 7 in case of 73 percent of high acceptors while in case of 80 percent low acceptors, the score was up to 3 only.

Table 2: Impact of rearing of backyard poultry

Particulars	Before training	After training	Knowledge gained
Score range	1-4	3-8	3-7
Total score	97	211	114
Mean score	2.4	5.9	3.5

Attempt is here made to ascertain the effectiveness of independent variables on knowledge gained in training programme. It was found from the Table-3 that age of the participants was negatively and non-significantly correlated with knowledge gained. It shows that young age participants

gained more knowledge as compared to older one. Sadamate and Sinha (1976) ^[8] concluded in his study that age influence the amount of knowledge gained. Education of the participants was positively and significantly correlated with knowledge gained. It indicates that the qualified participants gained more knowledge comparison to less/non-qualified. Similar findings were also reported by Mishra and Sinha (1981) ^[3] and Sharma *et.al.* (2006) ^[2]. Experience in agriculture, family background and training programmes attended by the participants did not show any relationship with knowledge gained. Socio-economic status, scientific orientation level holding social participation and marketing intelligence also having positive correlation towards knowledge gained.

Table 3: Zero order correlation co-efficient of independent variables with knowledge gained.

Independent variables	'r' value
Age	-0.276
Education	0.543*
Experience	0.332
Family background	0.033
Socio-economic status	0.603**
Number of trainings attended	0.022
Scientific orientation	0.272**
Land holding	0.312**
Social participation	0.268**
Marketing intelligence	0.740*

* Significant at 0.05 probability level

** Significant at 0.01 probability level

On the basis of analysed data it can be concluded that majority of the trainees had express their need of training on backyard poultry as a whole. The analysis of the correlation of selected characteristics like education, socio-economic status, land holding, social participation, scientific orientation and marketing intelligence found positively and significantly towards their knowledge gained similar findings were highlighted by Rajput *at all* (2009) ^[4]. On the basis of investigation it was also concluded that all 25 trainees required training needs on all the aspect of backyard poultry production technology as perceived by the participants, that the most important area of the training has been found to be disease management in chicks ranked first (Table-4). This is understandable the point of view that disease management of chick needs a lot of skills to handle it. This is followed by improved breeds for backyard poultry as second. Feeding management and taking care is another important area identified to training need, its also required a sharp management skill for success entrepreneur, same thing was highlighted by Rao *et all* (2009) ^[5] and suggested that management skill is relatively important component to all other dimension of any occupation that may be utilized in entrepreneurship development.

Table 4: Training needs of participants

S. No.	Particulars	Score	Rank
1.	Disease management in chicks	19	I
2.	Improved breeds for backyard poultry	18	II
3.	Feed preparation	11	IV
4.	Feeding management and take care	15	III
5.	Marketing intelligence	09	V

Conclusion

It can be concluded from the study that young and qualified

trainees gained more knowledge as compare to old and illiterate participants. The major and top ranked training needs of the participants were disease management in chicks and improved breeds for backyard poultry. Taylor (1961) ^[9] rightly said that training mean to bring about the continuous improvement in the quality of work performed by the staff and the individuals. Thereby, training should be provided time to time to an individual to update them from the new technologies so they can perform well in their field.

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