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**RESEARCH ARTICLE :**

# Role assessment of KVK's subject matter specialist in transfer of technology

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**SUMMARY :** Modernization of agriculture greatly depends on development of farm technology and its dissemination. There is rich agricultural technology available, but full use of it is not satisfactory in many parts of the country.The work of transfer of farm technology is mainly undertaken by the State Department of Agriculture, State Agricultural Universities and Krishi Vigyan Kendras. The Subject Matter Specialists of Krishi Vigyan Kendras play an important role in this regard. The Subject Matter Specialists on the one hand, are engaged in generating the knowledge, testing the technology, developing innovations and on the other hand, in communicating knowledge, technology and innovations directly or indirectly to the farmers and extension workers. The Subject Matter Specialists seek to reach the farming community through different extension teaching methods by giving proper treatment to technological massages. The present investigation was undertaken in the jurisdiction of Maharashtra state comprising 33 Krishi Vigyan Kendras having 153 Subject Matter Specialist. According to the study, it was observed that majority (62.75%) of the Subject Matter Specialists had medium role level and in respect of actual participation, cent per cent participated in the extension activities like demonstrations, training programmes and meetings for transfer of technology. The majority of the Subject Matter Specialists were involved in farm publications, farmers' melavas and exhibitions for transfer of technology. It was observed that in respect of farm publications, Subject Matter Specialists 'always' participated in implementation (92.16%) and planning (66.01%) while in case of newspaper, most of them were 'always' involved planning (90.20%) and implementation (67.97%) stage. Regarding radio programmes, majority (73.21%) of the Subject Matter Specialist had 'always' participated in preparation process and in case of television programmes, nearly half of the participants 'always' participated in planning, preparation and implementation process. In farmers' melava programmes, more than half of the participants had 'always' involved in planning, preparation and implementation process. In respect of exhibition, nearly half (50.98%) were 'always' involved in follow up process stage and in field day activities, 62.09 per cent respondents 'always' participated in preparation stage for transfer of technology. In case of demonstrations, majority (62%) respondents had 'always' participated in preparation and implementation process while in meetings, they had 'always' participated in implementation (64.71%) process. In case of training programme, majority (70.59%) participants had 'always' participated in planning for transfer of technology.

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## BACKGROUND AND OBJECTIVES

India is predominantly an agricultural country. Extension functionaries transmit these research findings as per needs of the farmers on their field. This can be done by the integrated efforts of teachers, research workers and extension educators to transmit and communicate sophisticated agricultural technology into simple and understandable form. In addition to the efforts of SAU's the Krishi Vigyan Kendra (KVK) scientists represent a professional class in the area of vocational training and first line technology transfer. The ICAR launched this Krishi Vigyan Kendra (KVK) project to accelerate the process of technology dissemination in more effective manner all over India. Conducting 'On-farm testing', organizing short and long-term vocational training to update the extension personnel in agriculture and front line demonstrations on various crops to generate production data are the mandates of Krishi Vigyan Kendra.

In order to achieve the mandate, the Subject Matter Specialist of each discipline plays an important role in the Krishi Vigyan Kendra. However, available farm technology is not reaching to the farming community at desired place and level. The main problem visualized in this study by the investigator was to know the role of Subject Matter Specialists of Krishi Vigyan Kendra's in transfer of farm technology and to understand the various factors associated with this process. With this background the present investigation on role of Subject Matter Specialist of Krishi Vigyan Kendras in transfer of technology in Maharashtra was planned.

## RESOURCES AND METHODS

The present investigation was undertaken in the jurisdiction of Maharashtra state comprising 33 Krishi Vigyan Kendras having 153 Subject Matter Specialist as a sample. The investigation aimed at studying the role, constraints and suggestions of subject matter specialists in transfer of technology. So, the ex-post-facto approach research design and the schedule prepared for analysis the role of subject matter specialist in transfer of technology.

In this context the role of Subject Matter Specialist has been operationally defined as the degree of actual participation in the various important extension activities. Prior to that, efforts were made to prepare the exhaustive list of various extension activities on the basis of review of literature and discussion with experts. The list of extension activities was prepared by getting the relevancy from the judges on four-point continuum. The finally selected 11 extension activities namely farm publication, newspaper, radio, television, farmers melava, exhibitions, field day, demonstration, meetings, training programmes and study tour were considered for deciding the role of Subject Matter Specialist in transfer of technology at various stages such as planning, preparation, implementation and follow up. In order to measure the role of Subject Matter Specialist in transfer of technology the research worker has specially developed a measuring scale.

To calculate the role in transfer of technology, the respondents were requested to offer their responses on three point continuum namely 'always', 'sometimes' and 'never' which are assigned with numerical score of 2, 1 and 0, respectively. The role index of each individual was worked out as below.

$$\text{Role index } Z \frac{\text{obtained score}}{\text{Obtainable score}} \text{x } 100$$

On the basis of role index, the Subject Matter Specialists were grouped into following three categories on the basis of the mean ± S.D.

| Sr. No. | Role of SMS in TOT | Role index |
|---|---|---|
| 1. | Low role level | Upto 68 |
| 2. | Medium role level | 69 to 95 |
| 3. | High role level | 96 and above |

M+SD= 94.83 M-SD= 67.89

## OBSERVATIONS AND ANALYSIS

The findings of the present study as well as relevant discussion have been presented under following heads.

### Activity-wise participation of Subject Matter Specialists in transfer of technology :

The efforts were made to ascertain the actual overall activity-wise participation of Subject Matter Specialists. Quantification of their participation in various extension activities since their joining in the Krishi Vigyan Kendra was done. The various extension activities considered *viz.,* farm publications, newspaper, radio talk, television programme, farmers melava, exhibitions, demonstrations, field days, meetings, training programmes and study tour.

The response of Subject Matter Specialists was

recorded on participation in each sub items under each stage of extension activities. Hence, percentage of actual participation of concerned sub items of extension activities was worked out. The findings about participation in extension activities are presented in Table 1.

The data in respect of actual participation indicated that 100 per cent of Subject Matter Specialist participated in the extension activities like 'demonstrations', 'training programmes' and 'meetings' for transfer of technology.

The majority (94.12%) of the Subject Matter Specialists involved in 'farm publications' activity followed by 93.46 per cent in 'farmers melavas' (Keshava and Kumar, 1995), 91.50 per cent in 'exhibitions', 87.58 per cent in 'newspaper', 84.31 per cent in 'radio talks' and 81.05 per cent Subject Matter Specialist actually participated in 'field days' for transfer of technology (Table 1).

**Overall participation of SMS in various extension activities :**

From the Table 2, it was observed that there was great participation of Subject Matter Specialist in planning, preparation, implementation and follow up in various extension activities. In case of farm publications, Subject Matter Specialists 'always' participated in implementation (92.16%) and planning (66.01%). Regarding newspaper, most of the Subject Matter Specialists were 'always' involved planning (90.20 %) and implementation (67.97%) stage of newspaper.

In radio programmes, majority (73.21%) of the Subject Matter Specialist had 'always' participated in preparation process (Abdullah *et al*., 2002). In case of television programmes, nearly half of the participants 'always' participated in planning, preparation and implementation process. In farmers' melava, more than half of the Subject Matter Specialist had 'always' involved in planning, preparation and implementation while nearly half of the respondents were 'sometimes' involved in follow up process for transfer of technology. In exhibition, nearly half (50.98%) of the Subject Matter Specialists were 'always' involved in follow up process and 51.63 per cent of them were 'sometime' involved in planning stage. Regarding field day, majority (62.09%) of the respondents 'always' participated in preparation and half of them involved in planning and follows up stages for transfer of technology.

In case of demonstrations, majority (62%) of the Subject Matter Specialists had 'always' participated in preparation and implementation process while in meetings programmes, majority (64.71%) had 'always' participated in implementation followed by planning and preparation process. In training programme, majority (70.59%) participants had 'always' participated in planning and 60.13 per cent 'always' involved in preparation, implementation for transfer of technology. In study tour nearly half of the Subject Matter Specialists had 'sometimes' participated in planning and follow up process for transfer of technology.

**Overall role of Subject Matter Specialists in transfer of technology :**

The role of Subject Matter Specialists in transfer of technology has been worked out by considering the participation in various 11 extension activities. Their involvement in each activities was worked out by actual item wise participation in transfer of technology at various

**Table 1: Activity-wise participation of SMS in various extension activities**

| Sr. No. | Extension activity | Number of SMS (n=153) | Percentage |
|---|---|---|---|
| 1. | Farm publications | 144 | 94.12 |
| 2. | Newspapers | 134 | 87.58 |
| 3. | Radio talks | 129 | 84.31 |
| 4. | Television programmes | 68 | 44.45 |
| 5. | Farmers Melavas | 143 | 93.46 |
| 6. | Exhibitions | 140 | 91.50 |
| 7. | Demonstrations | 153 | 100 |
| 8. | Field days | 124 | 81.05 |
| 9. | Meetings | 153 | 100 |
| 10. | Training programmes | 153 | 100 |
| 11. | Study tours | 89 | 58.17 |

**Table 2: Distribution of SMS participation in various extension activities** **(n=153)**

| Participation in farm publication | Frequency | | |
|---|---|---|---|
| | Always | Sometimes | Never |
| Planning | 101 (66.01) | 48 (31.37) | 4 (2.62) |
| Preparation | 94 (61.44) | 52 (33.99) | 7 (4.57) |
| Implementation | 141 (92.16) | 11 (7.19) | 1 (0.65) |
| Follow up | 48 (31.37) | 79 (51.64) | 26 (16.99) |
| Participation in newspaper | | | |
| Planning | 138 (90.20) | 14 (9.15) | 1 (0.65) |
| Preparation | 42 (27.45) | 86 (56.21) | 25 (16.33) |
| Implementation | 104 (67.97) | 45 (29.41) | 4 (2.62) |
| Follow up | 62 (40.52) | 56 (36.60) | 35 (22.88) |
| Participation in radio programme | | | |
| Planning | 87 (56.86) | 63 (41.18) | 3 (1.96) |
| Preparation | 112 (73.21) | 40 (26.14) | 1 (0.65) |
| Implementation | 35 (22.88) | 91 (59.48) | 27 (17.64) |
| Follow up | 41 (26.80) | 79 (51.63) | 33 (21.57) |
| Participation in television | | | |
| Planning | 79 (51.63) | 46 (30.07) | 28 (18.30) |
| Preparation | 72 (47.06) | 64 (41.83) | 17 (11.11) |
| Implementation | 76 (49.67) | 57 (37.26) | 20 (13.07) |
| Follow up | 38 (24.84) | 56 (36.60) | 59 (38.56) |
| Participation in farmers Melava | | | |
| Planning | 83 (54.25) | 49 (32.03) | 21 (13.72) |
| Preparation | 97 (63.40) | 33 (21.57) | 23 (15.03) |
| Implementation | 77 (50.33) | 62 (40.52) | 14 (9.15) |
| Follow up | 44 (28.76) | 83 (54.25) | 26 (16.99) |
| Participation in exhibition | | | |
| Planning | 42 (27.45) | 79 (51.63) | 32 (20.92) |
| Preparation | 65 (42.48) | 49 (32.03) | 39 (25.49) |
| Implementation | 67 (43.79) | 52 (33.99) | 34 (22.22) |
| Follow up | 78 (50.98) | 62 (40.52) | 13 (8.50) |
| Participation in field day | | | |
| Planning | 87 (56.86) | 56 (36.60) | 10 (6.54) |
| Preparation | 95 (62.09) | 48 (31.37) | 10 (6.54) |
| Implementation | 62 (40.52) | 62 (40.52) | 29 (18.96) |
| Follow up | 80 (52.29) | 44 (28.76) | 29 (18.95) |
| Participation in demonstraions | | | |
| Planning | 66 (43.14) | 64 (41.83) | 23 (15.03) |
| Preparation | 95 (62.09) | 52 (33.99) | 6 (3.92) |
| Implementation | 96 (62.75) | 33 (21.57) | 24 (15.68) |
| Follow up | 80 (52.29) | 58 (37.91) | 15 (9.80) |
| Participation in meetings | | | |
| Planning | 89 (58.17) | 35 (22.88) | 29 (18.95) |
| Preparation | 84 (54.90) | 48 (31.37) | 21 (13.73) |
| Implementation | 99 (64.71) | 36 (23.53) | 18 (11.76) |
| Follow up | 80 (52.29) | 53 (34.64) | 20 (13.07) |
| Participation in training programmes | | | |
| Planning | 108 (70.59) | 43 (28.10) | 2 (1.31) |
| Preparation | 92 (60.13) | 58 (37.91) | 3 (1.96) |
| Implementation | 92 (60.13) | 57 (37.26) | 4 (2.61) |
| Follow up | 66 (43.14) | 78 (50.98) | 9 (5.88) |
| Participation in study tour | | | |
| Planning | 48 (31.37) | 72 (47.06) | 33 (21.57) |
| Preparation | 70 (45.75) | 58 (37.91) | 25 (16.34) |
| Implementation | 72 (47.06) | 57 (37.25) | 24 (15.69) |
| Follow up | 64 (41.83) | 75 (49.02) | 14 (9.15) |

(The figures in the parentheses indicate the percentages)

**Table 3: Distribution of SMS according to role in transfer of technology**

| Sr. No. | Role of SMS in TOT | No. of respondents | Percentage |
|---|---|---|---|
| 1. | Low role level (Upto 68) | 29 | 18.95 |
| 2. | Medium role level (69 to 95) | 96 | 62.75 |
| 3. | High role level (96 and above) | 28 | 18.30 |
| | Total | 153 | 100.00 |

(SD: 13.47, M: 81.36)

stages *viz.,* planning, preparation, implementation and follow up. After quantification of data role indices were worked out. On the basis of role index all the Subject Matter Specialists were categorized into three groups and presented in Table 3.

It is revealed from Table 3 that majority (62.75%) of the Subject Matter Specialists had medium role level in transfer of technology, followed by 18.95 per cent low role level and equally (18.30%) of them had high role level in transfer of technology (Jagdale,2004 and Jagdale *et al.*,2012).

It can be concluded from these findings that the Subject Matter Specialists played satisfactory role in transfer of technology. It means that they had performed fairly well in respect of all extension activities of role in transfer of technology. However, the findings make it clear that there is a good scope to improve the role in transfer of technology. It can be done through systematic efforts of the Subject Matter Specialists and concerned authorities.

**Conclusion :**

Majority (62.75%) of the Subject Matter Specialists had medium role level in transfer of technology, followed by 18.95 per cent with low role level and equal number (18.30%) had high role level in transfer of technology.

In respect of actual participation, almost cent per cent of Subject Matter Specialists participated in the extension activities like demonstrations, training programmes and meetings for transfer of technology. A great majority (94.12%) of the Subject Matter Specialists involved in farm publications, followed by 93.46 per cent in farmers' melavas and 91.50 per cent in exhibitions activity for transfer of technology.

It was observed that in respect of farm publications, Subject Matter Specialists 'always' participated in implementation (92.16%) and planning (66.01%). Regarding newspaper, most of the Subject Matter Specialists were 'always' involved planning (90.20%) and implementation (67.97%) stage.

In radio programmes, majority (73.21%) of the Subject Matter Specialist had 'always' participated in preparation process. In case of television programmes, nearly half of the participants 'always' participated in planning, preparation and implementation process. In farmers' melava, more than half of the Subject Matter Specialist had 'always' involved in planning, preparation and implementation process. In exhibition, nearly half (50.98%) of the Subject Matter Specialists were 'always' involved in follow up process stage. Regarding field day, majority (62.09%) of the respondents 'always' participated in preparation stage for transfer of technology.

In case of demonstrations, majority (62%) of the Subject Matter Specialists had 'always' participated in preparation and implementation process while in meetings programmes, majority (64.71%) had 'always' participated in implementation followed by planning and preparation process. In training programme, majority (70.59%) participants had 'always' participated in planning for transfer of technology. In study tour nearly half of the Subject Matter Specialists had 'sometimes' participated in planning and follow up process for transfer of technology.

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