

# Impact of Krishi Vigyan Kendra on empowerment of tribal women: a study in Bastar district of Chhattisgarh

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**ABSTRACT :** Empowerment is a multidimensional social process that helps people to gain control over their own lives. Women empowerment generally refers to the process by which women enhances their power to take control over decisions that shape their lives in relation to access to resources participation in decision making and control over distribution benefits. Tribal women are the back bone of the tribal economy of Bastar area. Krishi Vigyan Kendra is one of the grassroot level agency which is engaged for upliftment of tribal women. Krishi Vigyan Kendra, Bastar had played significant role in improving the conditions of tribal women. The study was conducted in Bastar district. A total sample of 300 respondents was selected *i.e.* 150 beneficiaries and 150 non-beneficiaries through population proportionate to sample size from six blocks representing 24 villages. A pre tested interview schedule was administered to 300 respondents. Relevant data on socio-personal, economic, psychological, and communication variables were collected. Difference between overall empowerment of beneficiaries and non-beneficiaries was worked out. It was concluded that majority of the respondents were middle aged, belonged to *Muriya* sub caste, illiterate, had joint family, married, involved in multiple occupation, small farmers with small land holdings, possessed *kuchha* house. The respondents belong to BPL category had 'medium' level of social participation, material possession, risk preference, self esteem, and extension contact, the respondent had 'high' level of mass media exposure and information seeking behaviour. Association with selected variables was calculated. There was significant difference between the extent of empowerment of beneficiaries and non-beneficiaries. In the documented programmes of Krishi Vigyan Kendra, it was found that in all the activities tribal women had participated. The activities of Krishi Vigyan Kendra had significant impact on the empowerment of the tribal women and they improved their skill, enhanced their income, upgraded technical knowledge and empowered them socially and economically.

**KEY WORDS :** Empowerment, Tribal women, Krishi Vigyan Kendra, Impact

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## INTRODUCTION

Agriculture accounts for 26 per cent of India's economy and 64 per cent of labour force. In some states, it accounts for 40 per cent of the domestic product. Agriculture also accounts for 18 per cent of India's exports. Agriculture growth has impact on poverty eradication. The growth in agriculture resulted in containing inflation, raising agricultural wages and

increasing employment generation. To propel Indian agriculture into 21<sup>st</sup> century, the quality, technical skills and management of agriculture manpower must improve in consonance with rapidly changing national and global market needs. If any organization wishes to assume a leadership role, it has no option but to strengthen its human resource base. The ICAR at national level is playing significant role in strengthening Human Resource Development. Many projects

are implemented by the ICAR and Krishi Vigyan Kendra's operating at grass root level are Knowledge Resource Centre. Krishi Vigyan Kendra under ICAR have been assigned responsibilities of catering the needs of rural women by adopting area specific strategies and technologies.

The mandate of Krishi Vigyan Kendra is application of technology/products through assessment, refinement and demonstration for adoption. To implement the mandate effectively, the following activities are envisaged for each Krishi Vigyan Kendra:

- On-farm testing to identify the location specific agricultural technologies under various farming systems.
- Frontline demonstrations to establish production potentials of technologies on the farmers' fields.
- Training of farmers and extension personnel to update their knowledge and skills in modern agricultural technologies.
- Work as resource and knowledge centre of agricultural technologies for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district (Mission, Vision and Mandate of Krishi Vigyan Kendra, 2013).

The Krishi Vigyan Kendra is based on three fundamental principles: agricultural production is the prime goal; work experience (learning by doing) is the main method of imparting training and education; and, lastly stress on weaker sections of rural population. The idea is to influence the production system with social justice, the starting point being the most needy and deserving section of the society, the weaker sections, tribal farmers, small and marginal farmers, agricultural labourers, drought and flood-affected farmers and so on. Presently, there are 631 Krishi Vigyan Kendras in the country out of which 20 Krishi Vigyan Kendras are in Chhattisgarh under jurisdiction of State Agricultural University, Indira Gandhi Krishi Vishwavidyalaya, Raipur.

The tribal women in the Bastar area are back bone of the tribal community. Tribal women play a significant role in agricultural development and allied field including crop production, livestock production horticulture, post harvest operations, agro forestry, fisheries etc. Tribal women are actively engaged in most of the agricultural operations like fieldpreparation, sowing of seeds, intercultural weeding and plant protection measures, harvesting, application of manures and fertilizers, compost making. Tribal women involvement in agriculture related activities is immense and Krishi Vigyan Kendra has focussed, its programmes specifically for tribal women farmers. Krishi Vigyan Kendra established in Bastar district is operating for last ten years.

The present study is confined to Krishi Vigyan Kendra and comparative study of beneficiaries under Krishi Vigyan Kendra and non-beneficiaries of the selected non adopted villages was under taken with following specific objectives :

- To study the socio-economic, psychological and communication characteristics of tribal women.
- To study the extent of empowerment of the tribal women through programme initiated by Krishi Vigyan Kendra.

## METHODOLOGY

The present study was undertaken in Bastar district which was purposively selected with a view to judge empowerment extent of tribal women in the district. The villages were selected by using chit method of simple random sampling for adopted villages and nonadopted villages with closer proximity to selected villages constituted the part of study. The list of tribal women was collected from Krishi Vigyan Kendra for each selected village. A total of 300 women respondents (150 beneficiaries, 150 non-beneficiaries) were selected through population proportion to sample size technique. The socio-economic variables were also selected for the study. To collect data semi-structured interview schedule was developed including differentactivities of Krishi Vigyan Kendra. It was pre-tested and modified accordingly for assembling the relevant data.

## OBSERVATION AND ASSESSMENT

The results obtained from the present investigation as well as relevant discussion have been summarised under following heads :

### Socio economic profile of tribal women :

The study depicted that the maximum number of tribal women respondents (57% beneficiary and 54% non-beneficiary) were found in the middle age group of 27-37 years belonged to *Muriya* caste (52 % beneficiary and 45 % non-beneficiary), and belonged to joint family (45% beneficiary and 44% non-beneficiary). Agriculture was the main occupation. The main source of information were *Gram Pradhan* and family members, neighbours among informal sources and in case of mass media, radio and television were main source of information (Pallavi, 2006).

### Extent of empowerment of the tribal women through programme initiated by Krishi Vigyan Kendra :

Table 1 clearly depicts the technological change and skill acquired by respondents. In land development techniques and practice, 65.33 per cent beneficiaries and 20 per cent of non beneficiaries adopted land levelling techniques, 64 per cent of the beneficiaries and 17.33 per cent of non beneficiaries adopted small earthen bunds. The results further revealed that 48 per cent of beneficiaries and eight per cent of non beneficiaries adopted water harvesting structures and 38.66 per cent of beneficiaries and 16.66 per cent of non beneficiaries adopted vegetative bunds. The adoption of the technologies

by non beneficiaries showed that Krishi Vigyan Kendra has indirectly influenced them. It can be concluded that for land levelling practices and techniques there was change in the respondents (Banga, 2010).

**Land tillage and preparation techniques and practice :**

Table 2 in land tillage and preparation 85.33 per cent of the beneficiaries and 32 per cent of non-beneficiaries had followed practice of deep ploughing in summer, 68 per cent of the beneficiaries and 24 per cent of non-beneficiaries had practiced ploughing immediately after harvest of crop, for recommended dose of FYM/compost before ploughing, 52 per cent of beneficiaries and 19.33 per cent of non-beneficiaries followed the practices and for breaking mud balls and cutting of bunds 73.34 per cent of beneficiaries and 24 per cent of non-beneficiaries followed the practices. The adoption of the technologies by non-beneficiaries showed that Krishi Vigyan Kendra has indirectly influenced them.

**Use of varieties and seeds under crop production techniques and practices :**

Table 3 reveals that in the use of varieties and seeds under crop production techniques and practices 74 per cent beneficiaries and 26.63 per cent of the non-beneficiaries had adopted high yielding and improved varieties, followed 68 per cent beneficiaries and 26.63 per cent of non-beneficiaries adopted recommended dose of seed rate. The data reveals that 64 per cent of beneficiaries and 12.66 per cent had followed the seed treatment for soil borne disease, whereas 58.67 per cent of the beneficiaries and 14 per cent of the non beneficiaries had adopted pest and disease resistant varieties. The non-beneficiaries were influenced by Krishi Vigyan Kendra beneficiaries who were their friends, relatives or neighbours.

**Nursery management techniques and practices :**

Table 4 indicates that innursery management practices

**Table 1 : Distribution of respondents on the basis of land development (n=300)**

Land development practices /techniques	Beneficiaries (n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes (KVK)	No	Total
Vegetative bunds	58 (38.66)	92(61.33)	150	25(16.66)	125(83.33)	150
Land levelling	98 (65.33)	52(34.66)	150	30(20)	120(80)	150
Water harvesting structures	72(48)	78(52)	150	12(8)	138(92.66)	150
Small earthen bunds	96(64)	54(36)	150	26(17.33)	124(82.66)	150

\*Figures in parenthesis shows the percentage of respective category\*\*Multiple responses were allowed

**Table 2 : Distribution of respondents on the basis of land tillage and preparation techniques and practices (n=300)**

Preparation tillage techniques and practices	Beneficiaries(n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes (KVK)	No	Total
Ploughing immediately after harvest of crop	102 (68)	48 (32)	150	36 (24)	114 (76)	150
Deep ploughing in summer	128 (85.33)	22 (14.66)	150	48 (32)	102 (68)	150
Recommended dose of FYM/compost before ploughing	78 (52)	72 (48)	150	29 (19.33)	121 (80.66)	150
Breaking of mud balls in field and bund cuttings	110 (73.34)	40 (26.66)	150	36 (24)	114 (76)	150

Figures in parenthesis shows the percentage of respective category\*\*Multiple responses were allowed

**Table 3 : Distribution of respondents on the basis of use of varieties and seeds under crop production practices (n=300)**

Use of varieties and seeds/ practices	Beneficiaries (n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes(KVK)	No	Total
High yielding varieties and improved varieties	112 (74.66)	38 (25.33)	150	40 (26.63)	110(73.33)	150
Recommended dose of seed rate	102 (68)	48 (32)	150	40 (26.63)	110(73.33)	150
Seed treatment against soil borne diseases	96 (64)	54 (36)	150	19 (12.66)	138(87.33)	150
Pest and disease resistant varieties	88 (58.67)	62 (41.33)	150	21 (14)	129(86)	150

Figures in parenthesis shows the percentage of respective categories

**Table 4 : Distribution of respondents on the basis of in nursery management practices (n=300)**

Nursery management practices	Beneficiaries (n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes(KVK)	No	Total
Raised bed of recommended size	86 (57.33)	64(42.67)	150	14 (9.33)	136(90.66)	150
Recommended technologies for raising beds	88 (58.67)	62(41.33)	150	10 (6.67)	140 (93.33)	150
Covering with net or polythene	83 (55.33)	67(44.67)	150	12 (8)	138 (92)	150
Raising seedlings in poly bags	83 (55.33)	67 (46.67)	150	13 (8.66)	137(91.33)	150

Figures in parenthesis shows the percentage of respective category\*\*Multiple responses were allowed

58.67 per cent of beneficiaries and 6.67 per cent of non beneficiaries had technological change and acquired skills in recommended techniques for bed raising, followed by 57.33 per cent of beneficiaries and 9.33 per cent of non-beneficiaries adopted practices of raised bed of recommended size. Equal number of beneficiaries *i.e.* 55.33 per cent and almost equal percentage *i.e.* eight per cent of the non-beneficiaries had practiced covering their nursery with net or polythene and raising seedlings in poly bags, respectively.

**Transplanting and planting saplings techniques and practices :**

From Table 5 it was found that in transplanting and

planting saplings techniques and practices in beneficiary category 41.33 per cent of the beneficiaries and six per cent of non-beneficiaries had followed the recommended age of seedlings/grafted plants, 42.67 per cent of the beneficiaries and ten per cent of non-beneficiaries had followed the practice for recommended spacing, 65.33 per cent of the beneficiaries and 20.67 per cent of the non-beneficiaries had followed the practices for recommend method of transplanting in paddy, vegetables and fruit plants.

It can be concluded that majority of the beneficiary respondents had followed the practices of transplanting seedlings and saplings than non-beneficiaries. The reason for not following the practices was the traditional way of planting

**Table 5 : Distribution of the respondents on the basis of transplanting and planting saplings (n=300)**

Transplanting/planting saplings practices	Beneficiaries (n <sub>1</sub> = 150)			Non beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes (KVK)	No	Total
Recommended age of seedlings/grafted plants	62 (41.33)	88 (58.67)	150	9 (6)	141 (94)	150
Recommended spacing	64 (42.67)	86 (57.33)	150	15(10)	135 (90)	150
Recommended method of transplanting (paddy, vegetables and fruit plants) guava, papaya, mango, coconut, kaju etc	98 (65.33)	52 (34.67)	150	31(20.67)	119 (79.33)	150

Figures in parenthesis shows the percentage of respective category\*Multiple responses were allowed

**Table 6 : Distribution of the respondents on the basis of crop protection practices (n=300)**

Crop protection practices	Beneficiaries (n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes (KVK)	No	Total
Recommended dose of insecticides and pesticides	88 (58.66)	62 (41.33)	150	36 (24)	114 (76)	150
Recommended dose of fungicides	82 (54.67)	68 (45.33)	150	12 (8)	138 (92)	150
Recommended insecticides and pesticides for particular disease	88 (58.66)	62 (41.33)	150	11 (7.33)	139 (92.66)	150
Recommended herbicides and weedicides	81 (54)	69 (46)	150	9 (6)	141 (94)	150
Use of spray pumps and duster	42 (28)	108 (72)	150	8 (5.33)	142 (94.66)	150

Figures in parenthesis shows the percentage of respective category\*Multiple responses were allowed

**Table 7 : Distribution of the respondents on the basis of use of drudgery reduction implements (n=300)**

Use of drudgery reduction implements	Beneficiaries (n <sub>1</sub> = 150)			Non-beneficiaries influenced (n <sub>2</sub> =150)		
	Yes	No	Total	Yes(KVK)	No	Total
Use of improved equipment	102 (68)	48 (32)	150	66 (44)	84 (56)	150
<b>Drudgery reduction implement used</b>						
Maize Sheller	50 (33.33)	100 (66.67)	150	30 (20)	120 (80)	150
Use of serrated sickle	108 (72)	42 (28)	150	66 (44)	84 (56)	150
Use of wheel hoe, hand hoe and use of Ambi katauchi weeder *	88 (58.66)	62 (41.33)	150	12 (8)	138 (92)	150

Figures in parenthesis shows the percentage of respective category\* Distributed in a group in the villages and was used by all the members

**Table 8 : Result of 'Z' test for activities of Krishi Vigyan Kendra and empowerment of tribal women**

Activities	Z- value
Land development	12.68**
Crop production	12.89**
Varieties of seeds and improved seeds	12.05**
Nursery management	12.10**
Transplanting/planting of seedlings	12.79**
Crop protection	12.65**
Use of drudgery reduction implements	13.08**

\*\*Z value: at 1% level of significance 2.58 and at 5% level of significance 1.96

as they were following it from many years. They thought that plants grow naturally as viewed in the forest for fruit plants.

But for not transplanting paddy in line as it was not in practice and they thought that it took more time. For transplanting of vegetable seedlings, non-availability of insecticides for root dipping treatment was the main reasons for not following the practices.

### **Crop protection practices techniques and practice :**

Table 6 reveals that in crop protection techniques and practices 58.66 per cent of beneficiaries and 24 per cent of non-beneficiaries had followed recommended dose of insecticides and pesticides. 54.67 per cent of the beneficiaries and eight per cent of non-beneficiaries had followed the practice for recommended dose of fungicides. 58.66 per cent of the beneficiaries and 7.33 per cent of non-beneficiaries followed the practice of use of recommended insecticide and pesticides for particular disease and 54 per cent of the beneficiaries and six per cent of non-beneficiaries had followed the practices for recommended herbicides and weedicides practices, 28 per cent of the beneficiaries and 5.33 per cent of non-beneficiaries had practiced the use of duster and spray pumps.

It can be concluded that for crop protection practices and techniques, majority of the beneficiaries respondents had technological change and Krishi Vigyan Kendra also had influenced on the non-beneficiary's respondents to some extent for crop protection practices.

### **Use of drudgery reduction implements :**

Table 7 depicts the use of drudgery reduction implements by the tribal women. It was observed that 68 per cent of the beneficiaries had used the improved drudgery reduction implements, whereas 44 per cent of non-beneficiaries had used the improved drudgery reduction implements and were influenced by the Krishi Vigyan Kendra in the study area.

On in-depth investigation about the use of different drudgery reduction implements, it was found that 33.33 per cent of women had used the maize Sheller. The cause given for not using the Maize Sheller was it damages the embryo of seeds of maize, while in non-beneficiary's category overall 20 per cent of had used Maize Sheller and who were influenced by Krishi Vigyan Kendra. The reason for not using the Maize Sheller in non-beneficiary category was lack of awareness about how to use it and no agency or any institute had distributed the Maize Sheller in the study area.

It was also found that 72 per cent of women had used serrated sickle in beneficiary category whereas in non-beneficiary category 44 per cent were using serrated sickle. Further the cause for not using the serrated sickle either they were not knowing that serrated sickle was available in the market or they did not want to use it because they found that the technique of cutting was different and they were not

habituated to it.

For the use of Wheel Hoe and *Ambika Tauchi*, 58.67 per cent of the beneficiaries were using the implements. The other beneficiaries who had not used revealed that they did not get the weeder at the time of weeding operations.

In non beneficiary category eight per cent of the respondents had used *ambika tauchi* and were influenced by Krishi Vigyan Kendra. On investigation for not using the weeder the non-beneficiaries revealed the reason that they had not transplanted the crop in line transplanting and used the traditional methods of sowing the seeds. Few of them were not aware of the availability of weeder implements.

It can be concluded that, the respondents were aware of the drudgery reduction equipments which saved time, energy and reduced the drudgery in agricultural operation. The reason for not using was also explored and it was can be concluded that respondents usability of drudgery reduction implements depended upon their availability.

### **Empowerment of tribal women :**

'Z' test was used to check whether there was any significant impact of Krishi Vigyan Kendra activities on empowerment of tribal women. The result in Table 8 shows that in all the activities, computed 'Z' value was more than Z table value at 1 per cent level of significance. This implies that there was positive impact of the Krishi Vigyan Kendra activities on the empowerment of tribal women. Therefore, it was concluded that Krishi Vigyan Kendra had significant impact on empowerment of tribal women on various activities of Krishi Vigyan Kendra.

### **Conclusion :**

Hence, it was concluded that all the activities were conducted by Krishi Vigyan Kendra as per the mandate and in all the activities tribal women had participated and improved their skill, enhance the income, upgraded technical knowledge and empowered them socially and economically. Therefore, there is need to strengthen Krishi Vigyan Kendra operating in regional area with resources and facilities so that desired impact to improve quality of life of people in that area can be seen.

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