

Impact of KVK Interventions on Socio-economic Status of Beneficiary Households in Dharwad District

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ABSTRACT

The government and non-government agencies have started many projects and programmes with an aim to eradicate poverty, unemployment and enhance income among the rural poor. The turning point and giant leap in this direction came with the establishment of Farm Science Centre or Krishi Vigyan Kendras (KVK) by ICAR in 1974. Krishi Vigyan Kendra (KVK), the light house for rural people, is an innovative science based institution, which undertakes vocational training of farmers, farm women, and rural youths, conducts on-farm research for technology refinement and organizes frontline demonstration to promptly demonstrate the latest agriculture technologies to the farmers as well as the extension workers. The study was conducted in Dharwad district of Karnataka and KVK, Dharwad was purposively selected. Further, a sample of 40 respondents who were influenced by the three most important income and employment enhancing interventions namely household enterprise, vermicomposting and seed production were selected randomly. Thus, the total sample consisted of 120 respondents. It was clear that before the KVK intervention, majority of the respondents were under the low category of socio-economic status. These selected KVK interventions made farmers to generate adequate income, by acting as a subsidiary source of income. This led to the transformation of respondents from low socio-economic status to the medium category.

Highlights

- After the KVK interventions there was a significant change in socio-economic status of beneficiaries and shift from low and medium socio economic status to high socio-economic status. Farmers are benefitting and realizing sufficient income throughout the year with these interventions.

Keywords: KVK, Intervention, Front line demonstration, on farm research, Income, Respondents.

The government and non-government agencies have started many projects and programmes with an aim to eradicate poverty, unemployment and enhance income among the rural poor. The turning point and giant leap in this direction came with the establishment of Farm Science Centre or Krishi Vigyan Kendras (KVK) by ICAR in 1974. Since, then more than 500 KVKs have been established till date. Having district as its jurisdiction area, KVKs have played crucial role in to programme and thereby enhancing production and generating part time employment for the farming community.

These are the down-to-earth institutions committed to vocational training, transfer of latest agricultural technologies, on and off farm researches, frontline demonstrations and thus, serving as the light house for overall agriculture and rural development. The KVKs aim is to bridge the gap between the technologies developed at the research institutions and its adoption at the field level by the farmer's through the demonstration of technology/ products etc. and by providing training for the farmers, rural youths and the extension personnel. In the present study, an effort has been made to assess the impact



of KVKs in enhancing income and employment among the farm households in the study area.

Methodology

The KVK, Saidapur is functioning under the University of Agricultural Sciences (UAS), Dharwad was purposively selected for the study. Purposive sampling technique was adopted for the selection of the district, and farmers. Three important income and employment generating training programmes (interventions) viz., vermicompost, seed production and household enterprise (vermicelli) were selected. In each intervention, 40 respondents were randomly selected making a sample of 120. To assess the impact of the selected training programmes on the farm households socio-economic status, the study taking the index developed by Dolli (2006) for sustainable livelihood as base, and with certain modifications comprised of the livelihood assets such as human capital, physical capital, social capital, financial capital and food security for which sub-indices were computed and summed up to arrive at the socio-economic index. Simple descriptive statistics were used to analyze the change in socio-economic status of beneficiary households before and after intervention of KVK training programmes.

Socio-Economic Status

An attempt was made to measure the socio-economic status by developing an index for the study taking the index developed by Dolli (2006) for sustainable livelihood as base and with certain modifications comprised of the livelihood assets such as human capital, physical capital, social capital, financial capital and food security for which sub-indices were computed and summed up to arrive at the socio-economic index.

(a) Human capital

Improvement in human capital was measured by considering the following aspects.

- ♦ **Education:** It refers to the improved capacity of beneficiaries to educate their children and other family members in the schools both within and outside the village.
- ♦ **Health:** It refers to the improved capacity of food intake as per the requirement and

consulting doctors in taluk and district headquarters for minor and major ailments.

- ♦ **Employment generation:** This was measured based on the increased man-days of employment to self and family members.

The respondents were asked to indicate their response for before and after undertaking income generating activities as high, medium and low for all the statements of human capital and a score 3, 2 and 1 were given, respectively.

To assess the change in human capital status, the respondents were categorized as low, medium and high based on mean (\bar{X}) and standard deviation (SD) as measures of check, for both before and after undertaking income generating activities.

Category	Score
	Before and After
Low	< (- 0.425SD)
Medium	(± 0.425 SD)
High	> (+ 0.425 SD)

The score obtained by the respondents for each statement were summed up to obtain the human capital score. The human capital index is the ratio of actual score obtained by the respondent and maximum possible score. The formula used as follows:

Human capital index =

$$\frac{\text{Actual score obtained by the respondent under human capital}}{\text{Maximum possible score}} \times 100$$

(b) Physical capital

This was measured by considering the accumulation of physical assets like house, household articles, entertainment materials or farm equipments.

The respondents were asked to indicate their response for before and after undertaking income generating activities as high, medium and low for all the statements of physical capital and a score 3, 2 and 1 were given, respectively.

To assess the change in physical capital status, the respondents were categorized as low, medium and high based on mean (\bar{X}) and standard deviation (SD) as measures of check, for both before and after undertaking income generating activities.



Category	Score
	Before and After
Low	< (- 0.425SD)
Medium	(± 0.425 SD)
High	> (+ 0.425 SD)

The score obtained by the respondents for each statement were summed up to obtain the physical capital score. The physical capital index is the ratio of actual score obtained by the respondent and maximum possible score. The formula used as follows:

Physical capital index =

$$\frac{\text{Actual score obtained by the respondent under physical capital}}{\text{Maximum possible score}} \times 100$$

(c) Social capital

This was measured based on the improvement of the social status both at home and outside in terms of respect and contacts.

The respondents were asked to indicate their response for before and after undertaking income generating activities as high, medium and low for all the statements of social capital and a score 3, 2 and 1 were given, respectively.

To assess the change in social capital status, the respondents were categorized as low, medium and high based on mean (\bar{X}) and standard deviation (SD) as measures of check, for both before and after undertaking income generating activities.

Category	Score
	Before and After
Low	< (- 0.425SD)
Medium	(± 0.425 SD)
High	> (+ 0.425 SD)

The score obtained by the respondents for each statement were summed up to obtain the social capital score. The social capital index is the ratio of actual score obtained by the respondent and maximum possible score. The formula used as follows:

Social capital index =

$$\frac{\text{Actual score obtained by the respondent under social capital}}{\text{Maximum possible score}} \times 100$$

(d) Financial capital

This was measured based on the access to financial sources and accumulation of the financial capital in terms of savings.

The respondents were asked to indicate their response for before and after undertaking income generating activities as high, medium and low for all the statements of financial capital and a score 3, 2 and 1 were given, respectively.

To assess the change in financial capital status, the respondents were categorized as low, medium and high based on mean (\bar{X}) and standard deviation (SD) as measures of check, for both before and after undertaking income generating activities.

Category	Score
	Before and After
Low	< (- 0.425SD)
Medium	(± 0.425 SD)
High	> (+ 0.425 SD)

The score obtained by the respondents for each statement were summed up to obtain the social capital score. The financial capital index is the ratio of actual score obtained by the respondent and maximum possible score. The formula used as follows:

Financial capital index =

$$\frac{\text{Actual score obtained by the respondent under financial capital}}{\text{Maximum possible score}} \times 100$$

(e) Food security

This was measured based on the availability of the food grains, vegetables and milk during the crop season and also off season.

The respondents were asked to indicate their response for before and after undertaking income generating activities as high, medium and low for all the statements of food security and a score 3, 2 and 1 were given, respectively.



To assess the change in food security status, the respondents were categorized as low, medium and high based on mean (\bar{X}) and standard deviation (SD) as measures of check, for both before and after undertaking income generating activities.

Category	Score
	Before and After
Low	< (- 0.425SD)
Medium	(± 0.425 SD)
High	> (+ 0.425 SD)

The score obtained by the respondents for each statements were summed up to obtain the food security score. The food security index is the ratio of actual score obtained by the respondent and maximum possible score. The formula used as follows:

$$\text{Food security index} = \frac{\text{Actual score obtained by the respondent under food security}}{\text{Maximum possible score}} \times 100$$

RESULTS AND DISCUSSION

Impact on Socio-Economic Status of Vermicomposting Respondents

Impact on human capital

The Table 1. vividly explains that, the number of respondents with high human capital category increased from 17.50% to 32.50% after undertaking income generating activities, and respondents with medium human capital category increased from 37.50% to 57.50% after undertaking income generating activities. In the case of respondents with low human capital category, there was a decrease from 45.00% to 10.00% after undertaking income generating activities.

The importance of imparting education to their children was made clear through trainings and other informal meetings conducted by KVK, Dharwad staff, which might have motivated beneficiaries to educate their children. As mentioned earlier, being SHG member beneficiaries had higher benefits as their financial problems were solved and it also got them support from the fellow members.

Impact on physical capital

It can be seen from the Table 1 that, the respondents with high physical capital category increased from 7.50% to 40.00% after taking up income generating activities and in the case of respondents with medium physical capital category, it increased from 35.00% to 55.00%. There was a decrease in the percentage of low physical capital category respondents from 57.50% to 5.00% after undertaking income generating activities. There was a significant improvement in the physical capital. It was observed that, farm energy in the form of number of bullocks was improved, whereas no beneficiaries purchased either a tractor or other farm machineries. The probable reason might be because majority of them were landless, marginal land holding and semi-medium income group beneficiaries. Most of the beneficiaries had purchased radio and TV as entertainment materials which also added to the improvement of the physical capital. The probable reason for the overall improvement in physical capital might be due to the increase in the income level of the beneficiaries by undertaking vermicompost production as an income generating activity.

Impact on social capital

It was observed from Table 1 that, respondents with high social capital category increased from 7.50% to 55.00% after undertaking income generating activities. Subsequently, medium and low social capital category respondents decreased from 40.00% and 52.50% to 35.00% and 10.00% respectively after taking income generating activities. There was a significant improvement in the social capital of beneficiaries. Due to the membership in self-help groups and being exposed to trainings conducted by KVK.

Impact on financial capital

A cursory look at the Table 1 showed that, the respondents of high financial capital category increased from 10.00% to 45.00% after involving in income generating activities and the respondents under medium financial asset category increased from 30.00% to 47.50% after involving in income generating activities, while in the case of respondents with low financial capital category decreased from

**Table 1:** Impact of Interventions on Socio-Economic Status of Vermicompost Respondents (n=40)

Sl. No.	Category	Before		After	
		Frequency	Per cent	Frequency	Per cent
<i>Change in human capital</i>					
1	Low	18	45.00	04	10.0
2	Medium	15	37.50	23	57.50
3	High	07	17.50	13	32.50
	Mean		43.76		93.89
	SD		11.60		12.63
<i>Change in physical capital</i>					
1	Low	23	57.50	02	5.00
2	Medium	14	35.00	22	55.00
3	High	03	7.50	16	40.00
	Mean		43.76		93.89
	SD		11.60		12.63
<i>Change in social capital</i>					
1	Low	21	52.5	04	10.00
2	Medium	16	40.00	14	35.00
3	High	03	7.50	22	55.00
	Mean		47.36		80.28
	SD		9.82		10.60
<i>Change in financial capital</i>					
1	Low	24	60.00	03	7.50
2	Medium	12	30.00	19	47.50
3	High	04	10.00	18	45.00
	Mean		53.10		91.31
	SD		8.73		8.62
<i>Change in food security</i>					
1	Low	07	17.50	02	5.00
2	Medium	23	57.50	17	42.50
3	High	10	25.00	21	52.50
	Mean		47.36		80.69
	SD		9.24		8.89

60.00% to 7.50% after involving in income generating activities. Financial capital acquisition was found to significantly increase among the beneficiaries who followed various income generating activities, financial capital increased more when compared to other capitals of the beneficiaries.

Impact on food security

It was observed from the Table 1 that, respondents with high food security category increased from 10.00% to 52.50% after undertaking income generating activities. Subsequently, medium and low food security category respondents

decreased from 57.50% and 17.50% to 42.50% and 5.00% respectively after taking income generating activities increased purchasing power depends upon the employment opportunities and increased income where there was significant increase in the employment opportunities and income sources, the financial status and the food security ought to improve. Increased food security was attributed to the intensive use of land for food grains, fruits, fodder and fuel wood production, which was achieved through various land based activities of KVK in the study area.



Impact on socio-economic status of soybean seed production respondents

Impact on human capital

The Table 2 vividly explains that, the number of respondents with high human capital category increased from 7.50 per cent to 37.50% after undertaking income generating activities and respondents with medium human capital category increased from 45.00% before to 57.50% after undertaking income generating activities. In the case of respondents with low human capital category, there was a decrease from 47.50% to 5.00% after undertaking income generating activities. The importance of imparting education to their children was made clear through trainings and other informal meetings conducted by KVK, which might have motivated beneficiaries to educate their children.

Impact on physical capital

It includes improvements in farm power and resources in the form of number of bullocks and tractor or other farm machineries, construction or renovation of dwelling house and improvement in entertainment materials such as radio, TV *etc.* It could be seen from the Table 2 that, the respondents with high physical capital category increased from 22.50% to 32.50% after taking up income generating activities and in the case of respondents with medium physical capital category, it increased from 35.00% to 65.00%. There was a decrease in percentage of low physical capital category respondents from 42.50% to 2.50% after undertaking income generating activities. It was observed that, farm energy in the form of number of bullocks improved, whereas no beneficiaries purchased a tractor or other farm machineries. The probable reason might be because majority of them were landless, less land holding and semi-medium income group beneficiaries. Most of the beneficiaries had purchased radio and TV as entertainment materials which also added to the improvement of the physical capital.

Impact on social capital

This includes social interaction, respect at home and outside and also leadership opportunities. It

was observed from the Table 2 that, respondents with high social capital category increased from 20.00% to 52.50% after undertaking income generating activities. Subsequently, medium and low social capital category respondents decreased from 47.50% and 32.50% to 42.50% and 5.00% respectively after taking income generating activities. There was significant improvement in the social capital of beneficiaries. One of the key interventions contributed was the development of social infrastructure through the formation of self-help groups and village level federations. Due to the membership in self-help groups and village level federations, the interaction among the members improved and it was also due to the exposure trainings conducted by KVK.

Impact on financial capital

The respondents of high financial capital category increased from 12.50% to 45.00% after involving in some income generating activities and respondents under medium financial asset category which remains unchanged, whilst in the case of respondents with low financial capital category, it decreased from 40.00% to 7.50% after involving in income generating activities. Financial capital acquisition was found to significantly increase among beneficiaries who followed various income generating activities, financial capital increased more when compared to other capitals of the beneficiaries, the probable reasons might be due to more savings, because KVK was providing the required inputs at subsidiary cost and at low interest rate. In addition to their savings, they have got bank loan, which further strengthened their financial capital position resulting in improved financial status.

Impact on food security

Food security refers to the availability of the sufficient food for family consumption either self-produced or purchased. It means sufficient production of food grains or improved purchasing power. It was observed from the Table 2 that, respondents with high food security category increased from 15.00% to 50.00% after undertaking income generating activities. Subsequently, medium and low food security category respondents decreased from 52.50% and 32.50% to 45.00% and

Table 2: Impact of interventions on socio-economic status of soybean seed production respondents (n=40)

Sl. No.	Category	Before		After	
		Frequency	Per cent	Frequency	Per cent
<i>Change in human capital</i>					
1	Low	19	47.50	02	5.00
2	Medium	18	45.00	23	57.50
3	High	03	7.50	15	37.50
	Mean	48.87		81.72	
	SD	5.17		5.26	
<i>Change in physical capital</i>					
1	Low	17	42.50	01	2.50
2	Medium	14	35.00	26	65.00
3	High	09	22.50	13	32.50
	Mean	54.02		92.64	
	SD	8.62		8.35	
<i>Change in social capital</i>					
1	Low	13	32.50	02	5.00
2	Medium	19	47.50	17	42.50
3	High	08	20.00	21	52.50
	Mean	47.77		80.83	
	SD	10.04		11.30	
<i>Change in financial capital</i>					
1	Low	16	40.00	03	7.50
2	Medium	19	47.50	19	47.50
3	High	05	12.50	18	45.00
	Mean	55.23		93.15	
	SD	10.77		12.04	
<i>Change in food security</i>					
1	Low	13	32.50	02	5.00
2	Medium	21	52.50	18	45.00
3	High	06	15.00	20	50.00
	Mean	47.91		91.25	
	SD	7.82		9.82	

5.00% respectively after taking income generating activities. Increased purchasing power depends upon the employment opportunities and increased income, where there was significant increase in the employment opportunities and income sources, the financial status and the food security ought to improve.

Increased food security was attributed to intensive use of land resources for food grains, fruits, fodder and fuel wood production, which was achieved through various land based activities of KVK in the study area.

Impact on socio-economic status of vermicelli (Household Enterprise) respondents

Impact on human capital

The Table 3 vividly explains that, the number of respondents with high human capital category increased from 12.50% to 55.00% after undertaking income generating activities. Subsequently, medium and low social capital category respondents decreased from 40.00% and 47.50% to 35.00% and 10.00% respectively, after taking income generating activities. The importance of imparting education



to their children was made clear through trainings and other informal meetings conducted by KVK.

Impact on physical capital

It could be seen from the Table 3 that, the respondents with high physical capital category increased from 22.50% to 27.50% after taking up income generating activities and in the case of respondents with medium physical capital category it increased from 40.00% to 62.50%. There was a decrease in percentage of low physical capital category respondents from 52.50% to 10.00% after undertaking income generating activities. It was observed that farm energy in the form of number of bullocks improved, whereas no beneficiaries purchased a tractor or other farm machineries. The probable reason might be because majority

of them were landless, marginal land holding and semi-medium income group beneficiaries. Most of the beneficiaries had purchased radio and TV as entertainment materials which also added to the improvement of physical capital. The probable reason for overall improvement in physical capital might be due to the increase in income level of beneficiaries by undertaking vermicelli production as an income generating activity.

Impact on social capital

It was observed from the Table 3 that, respondents with high social capital category increased from 25.00% to 52.50% after undertaking income generating activities. Subsequently, medium and low social capital category respondents decreased from 57.50% and 17.50% to 42.50% and

Table 3: Impact of interventions on socio-economic status of Vermicelli (Household Respondents) (n=40)

Sl. No.	Category	Before		After	
		Frequency	Per cent	Frequency	Per cent
<i>Change in human capital</i>					
1	Low	19	47.50	04	10.00
2	Medium	16	40.00	14	35.00
3	High	05	12.50	22	55.00
	Mean		47.36		80.28
	SD		10.82		11.60
<i>Change in physical capital</i>					
1	Low	21	52.50	04	10.00
2	Medium	16	40.00	25	62.50
3	High	03	22.50	11	27.50
	Mean		49.02		92.64
	SD		8.62		10.35
<i>Change in social capital</i>					
1	Low	07	17.50	02	5.00
2	Medium	23	57.50	17	42.50
3	High	10	25.00	21	52.50
	Mean		47.36		80.69
	SD		9.24		8.89
<i>Change in financial capital</i>					
1	Low	19	47.50	02	5.00
2	Medium	18	45.00	23	57.50
3	High	03	7.50	15	37.50
	Mean		48.87		81.72
	SD		5.17		5.26
<i>Change in food security</i>					
1	Low	21	52.5	02	5.00
2	Medium	16	40.00	17	42.50
3	High	03	7.50	21	52.50
	Mean		47.36		80.83
	SD		9.82		11.30



5.00% respectively after taking income generating activities. There was significant improvement in the social capital of beneficiaries.

Impact on financial capital

A cursory look at the Table 3 showed that, the respondents of high financial capital category increased from 7.50% to 37.50% after involving in income generating activities and respondents under medium financial asset category increased from 45.00% before to 57.50% after involving in income generating activities, whilst in the case of respondents with low financial capital category, it decreased from 47.50% to 5.00% after involving in Income generating activities. Financial capital acquisition was found to significantly increase among beneficiaries who followed various income generating activities. Financial capital increased more when compared to other capitals of the beneficiaries.

Impact on food security

Food security refers to the availability of the sufficient food for family consumption either self-produced or purchased. It means sufficient production of food grains or improved purchasing power. It was observed from the Table 3 that respondents with high food security category increased from 7.50% to 52.50% after undertaking income generating activities and respondents under medium food security category increased from 40.00% to 42.50% after involving in income generating activities, whilst in the case of respondents with low food security category it decreased from 52.50% to 5.00% after involving in some income generating activities. Increased purchasing power depends upon the employment opportunities and increased income, where there was significant increase in the employment opportunities and income sources, the financial status and the food security ought to improve. Increased food security was attributed to intensive use of land for food grains, fruits, fodder and fuel wood production, which was achieved through various land based activities of KVK in the study area.

CONCLUSION

KVKs transfer of technology programme has contributed immensely in increasing the productivity of selected interventions. This clearly reflects that KVKs interventions helped in the development of socio-economic status among farming community so that farmers/trainees are not only self-employed but also created opportunity for unemployed. Before the KVK intervention, majority of the respondents were under the low category of socio-economic status. These selected KVK interventions made farmers to generate adequate income, by acting as a subsidiary source of income this led to the transformation of respondents from low socio-economic status to the medium category. Still there is a scope for KVK to increase the number of farmers being trained by increasing the off-farm training programmes and KVKs under different systems- SAU, NGO and ICAR, which have to mutually get involved in the positive aspects of working with each other to prove it to be more effective.

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