



EMPLOYMENT GENERATING TECHNOLOGY TRANSFER BY KRISHI VIGYAN KENDRA AS A MEANS FOR EMPOWERING RURAL WOMEN

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ABSTRACT: Women are nuclei of a nation. The position of women in any society is an index of its civilization. The eradication of poverty of women in India cannot be accomplished through anti – poverty programmes alone but will require their democratic participation and changes in the economic structure in order to ensure their access to resources, opportunities and public services. The study was planned to find out how far the rural women are receptive to training programmes offered by the Krishi Vigyan Kendra in adopting the employment generating technologies and what needs to be done in future to strengthen the programme as effective agents for transfer of technology. The study has been made using both the primary and secondary data. For the primary data, a sample of 300 women trainees were chosen from 15 villages in the district of Kanchipuram. For secondary data, documentary and administrative records of the KVK, Kattupakkam have been referred to. A total of 1065, 1085 and 1980 women were trained both on-campus and off-campus programmes of KVK in the 3 years, (1997 – 1998), (1998-1999) and (1999-2000) respectively. The data analysed in the study relate to the 300 sample respondents, interviewed using a pre-tested schedule of questions, which was administered orally by the investigator. The data so gathered related to as many as 70 variables, of which a large number was qualitative. Likert type of scaling was used in the case of 10 variables that relate primarily to the attitudes of the women trainees. The schedules of questions filled-in by the sample women trainees were edited for consistency and coded, was then fed into the computer to create the database that could be analysed using statistical means. Training on employment generating technologies included three major areas of trust namely cultivation of mushroom, preservation of fruits and vegetables and preparation of products at home. Among these 86 per cent of the women preferred to adopt the preservation of fruits and vegetables and next in order to preparation of products at home. Mushroom cultivation involves a lot of time for harvesting and demands special care during the processing period compare to the other technologies. Hence this is being adopted by 58 per cent of the women trainees only. Thus it can be concluded that the training imparted at KVK paved way for their developing standard of living, decision making pattern, resource allocation methods which in turn result in empowerment.

Keywords: Empowerment, Self-employment, Mushroom Cultivation, preservation of fruits and vegetables, Homemade products.

I. INTRODUCTION:

Many developmental agencies realize that the key to long-term poverty alleviation in developing countries is empowerment in its broadest sense, of increasing self-reliance of the poor people, especially poor women. In the goal of national policy for the empowerment of women is to bring about the advancement and empower women. Empowerment policies should adopt integrated approach. There is no single factor, which constitutes empowerment. Among the various determinants of empowerment, access to resources including bank credit, is one of the crucial factors. Lack of capital is a serious constraint to the development of women in rural areas (Verma and Velulla, 1991).

Empowerment is defined as a process of change from self-assertion, and participation and involvement in projects in a functional sense, to the control over decision, regarding all aspects of one's life and livelihood (Bhagyalakshmi, 2001). Empowerment is a multidimensional process which should enable them to have greater control over the circumstances that influence their lives and free them from shocks imposed on them by customs, belief and practices (Gurumoorthy, 2000).

Training on employment generating technologies included three major areas of trust namely Cultivation of mushroom, preservation of fruits and vegetables and preparation of products at home.

'Mushroom production' is one of the leisure time and off farm activities, which can easily be taken especially by farm women and unemployed rural youth which provides substantial income. In India, the present internal consumption of fresh mushrooms is estimated to be about 200 tonnes per annum which is expected to rise with increasing awareness about its high nutritive value (Lakshmanan and Dharmalingam, 1996).

Preservation of women participating in food production can be assured of food security for their as well, while generating gainful self-employment to come out of poverty. Thus enhancing capabilities of farm women to use improved technique will not only help in increasing production, but also in reducing their strain and time spent on farming activities (Hedge, 1999). Active involvement of women in food production will also lead to sustainable agriculture and ensure food security in the country. Documentation of successful participation of women in enhancing food production and extending such knowledge among larger section of the community can further boost the food production in the country (Khadar, 1999 and Ojha, 2001).

In India, the total quantity of fruits and vegetables produced account for 70 million tonnes a year. These perishables which are produced go as waste during various stages of post-harvest operations. Hence processing of fruits and vegetables can be done as it is the most promising enterprise for many of the women folk. This will generate new employment opportunities, augment income requiring very little land, space and equipment. This can also produce a wide variety of nutrition preserved items which has a place in the domestic and export market (Saradhamani Devi, 2001). Rural women should be given agro-based enterprises and on-farm and off-farm employment. This employment of women is the key to the prosperity of healthy home, town and country (Veerasekaran *et al.*, 2000 and Motilal Nehru *et al.*, 2001).

II. OBJECTIVES OF THE STUDY:

1. To understand the attitudes of rural women towards employment generating technology.
2. To identify the technologies transferred and their extent of adoption for empowering women.
3. To assess the impact of technology improvement in changing the socio-economic status of women and families.
4. To suggest suitable modifications in the content and on the conduct of the training programmes and
5. To evaluate the outcome of the technologies for safe drinking water and sanitation transfer programmes.

III. SIGNIFICANCE OF THE STUDY:

The study was planned to find out how far the rural women are receptive to training programmes offered by the krishi vigyan Kendra in adopting the employment generating technology transfer for empowerment of rural women and what needs to be done in future to strengthen the programme as effective agents for transfer of technology.

IV. METHODOLOGY:

For the present study, Kancheepuram district has been considered. Out of 649 villages in kancheepuram district, 15 villages were selected based on the geographic location that showed direct access to the village from the krishi vigyan Kendra training centre. Krishi vigyan Kendra which offers training to the women is located at close proximity to kancheepuram. The population of the district is nearly 2.8 million by the latest count. Three hundred women who fulfill the following criteria were selected for the study:

- Women who had undergone training in the period (1997-2000)
- Women, who participated in all the four categories of training programme.
- Co-operative nature of the women.
- Women who are willing to share their experience, giving adequate time.

So, 300 women residing in the chosen villages were selected by using purposive sampling method. Interview cum observation method was adopted for collection of data. The schedule has been structured to contain both closed and open ended questions. It was designed to collect quantitative as well as qualitative information in the light of observations and experiences during the exploratory village study.

The schedule was framed to gather information. For measuring the attitude of the women trainees as regard to training, the investigator constructed Likert's Attitudinal Scales with five points. In the likert scale, the respondent is asked to respond to each of the statements in terms of the 5-point scaling, namely, strongly agree (5), agree (4), undecided or neutral (3), disagree (2) and strongly disagree (1) for positive questions and vice versa for negative questions. Each of the scale carries a score.

V. RESULTS AND DISCUSSION

1. Employment generating technologies

- a. Training on employment generating technologies included three major areas of thrust, namely, cultivation of mushroom, preservation of fruits and vegetables and preparation of home made products. Of the women

trainees, 89 per cent have had training and are practicing what they have learnt in the training for fruits and vegetables preservation. The Table 1 indicates the adoption of employment generating technology.

Table 1: Adoption of employment generating technologies by classes

Money invested in Rs	Cultivation of mushroom		Preservation of fruits and vegetables		Preparation of homemade products	
	N=154	Per cent	N=258	Per cent	N=208	Per cent
<100	10	6.49	229	88.76	81	38.94
101-200	62	40.27	22	8.53	69	33.17
201-500	79	51.29	6	2.33	42	20.29
>500	3	1.95	1	0.38	16	7.69

Multiple response

Table 1 indicates the percentage of women trainees who adopted different employment generating technologies. A majority (86 per cent) of the selected sample adopted fruits and vegetable preservation technology which included jam, jelly, pickle, tutti fruity and dehydration of fruits and vegetables. Preparing home made food products was the technology pursued by 69 percent of the selected samples. The items prepared by them were soap powder, cleaning powder, phenyl, agarbathi, woolen garments and school bags. Mushroom cultivation involves a lot of time for harvesting and demands special care during the processing period compared to the other technologies. Hence this is being adopted only by 58 per cent of the women trainees.

It must be pointed out that the trainees who pursue the income generating activities are not willing to invest more, since there is no permanent and growing market for the products in their vicinity. The buyers are often apprehensive of the quality as packaging of the products is not proper and attractive. Quality control and packaging need to be taken care of in the training module if the products are to be sold at an affordable price.

The practice of mushroom cultivation is a little bit difficult for the women trainees. Spawn preparation, preparation of mushroom bed, watching of spawning, care during the growing period and the waiting for harvesting make this endeavor a bit difficult to follow. Hence, 98 per cent of the practitioners have invested up to Rs.500 while a meager per cent of them, invested more than Rs.500. Moreover, there is the possibility of the presence of poisonous fungi refrain many women from adoption of this technology.

These are however exceptions as all the women trainees practice the manufacture of home made products such as (chilli powder, curry leaves powder, sambar and rasampodi, chilli chicken masala, paruppupodi), snacks, detergent and cleaning powders, phenyl, incense sticks, school bags, toys and wollen garments, for their own home consumption and for sales. However, the investments are minimum. Nearly 92 percent invested below Rs. 300/- for undertaking this task.

Table2: Chi square analysis

Factors	Cultivation of mushroom	Preservation of fruits and vegetables	Preparation of homemade products
Age	8.56 ^{NS}	10.32 ^{NS}	11.30 ^{NS}
Education	17.72**	8.37*	15.45**
Family Income	14.69*	15.47*	21.73**

^{NS} - Not significant

* - Significant 5% level

** - Significant 1% level

The Chi-square analysis of data revealed that, the age did not influence the type of employment generating technologies adopted by the women trainees. The educational level had a significant impact on fruit preservation at 5% level of significance where as the impact on mushroom cultivation and home made products was at 1 % level of significance. The family income had direct influence on the different technologies at 5 % level for fruits and vegetables preservation, mushroom cultivation and 1 % level for home made products.

- b. There are some problems in the adoption of technologies, which the women trainees have revealed. Table 3 indicates the problems in and reasons for, non-adoption of employment generating technologies.

Table 3: Reasons for not adopting employment generation

Reasons	Number	Percentage
(i) Mushroom Cultivation (146)		
*Marketing problem	132	90.41
*Economic problem	120	82.19
*Non cooperation at home	97	66.44
*Low space	28	19.18
*Lack of technical knowledge	22	15.06
*Not profitable to the expected level	12	8.22
(ii) Fruits and vegetable preservation (42)		
*Economic problem	40	95.23
*Marketing problem	35	83.33
*Non cooperation at home	23	54.76
*Lack of technical knowledge	5	11.91
*Lack of time	3	7.14
*Not profitable to the expected level	2	4.76
(iii) Home made products (92)		
*Economic problem	88	95.65
*Marketing problem	75	81.52
*Non cooperation at home	30	32.60
*Lack of time	5	5.43
*Lack of technical knowledge	2	2.17
*Not profitable to the expected level	2	2.17

Multiple response

The Table 3 indicates marketing and economic problems are the major constraints to adopt mushroom cultivation (90, 82 per cent), fruits and vegetable preservation (95, 83 per cent), and Home made products (96, 82 per cent) stated by women trainees. It must be pointed out that the employment generating technologies are generally adopted by a small number of the women trainees, as most of them are poor and are unable to invest money on the adoption. Most of them are therefore laggards, rather than innovators.

- c. Source of capital mobilization

The main problems faced by the Indian women – entrepreneurs are lack of adequate finance, technical know-how, non availability of raw materials, inadequate marketing facilities, lack of technical and managerial skills. Their specific problems are non availability of accommodation, bureaucratic hurdles in obtaining finances. Equity is the amount which the owner is in a position to contribute on her own towards the financial requirements of the project.

Table 4: Sources of capital mobilization

Sources	N: 300	Percentage
Savings	260	86.67
Bank	17	5.67
Society	17	5.67
Pawn broker	6	2.0

The table 4 points out that, 87 per cent have made their investment entirely from their own savings but small proportion of them have obtained loan either from the bank (6 per cent) or from the co-operative society (6 per cent). It becomes clear that the women who make investment have to invariably depend on their own savings rather than credits. Although the government programmes had announced financial help for women through several initiative development programmes, it is hard to get such credit from financial institutions such as banks. There is also a general tendency to be defaulters on the part of the credit takers, which hardens the attitude of the financial institutions. Credit is now available for women organized into groups, but availing the credit is still difficult even for those who are in a group, for various reasons mainly due to irregular payment of loans. Pawn brokers were approached by these women to get the money by pledging their jewels as they are unable to fulfill the requirements.

d. Incomes earned from employment generating technologies

Table 5, clearly reveals the women who pursue single, double and all the employment generating technologies based on the income earned.

Table 5: Income earned through technology transfer

No	Employment generating technologies	Below 500		501-750		Above 750	
		No	Percent	No	Percent	No	Percent
i	Fruits and vegetable preservation (70)	5	7.14	30	42.86	35	50.0
	Mushroom cultivation (10)	-	-	3	30.00	7	70.0
	Home made products (20)	2	10.0	10	50.00	8	40.0
ii	Mushroom and fruits and vegetable preservation (12)	-	-	2	16.67	10	83.33
	Mushroom and homemade products (12)	2	16.66	4	33.33	6	50.0
	Homemade products and fruits and vegetable preservation (56)	10	17.86	10	17.86	36	64.28
iii	Fruits and vegetable preservation, mushroom cultivation and homemade food products (120)	-	-	20	16.67	100	83.33

The data was analysed to study the income earned from the adopted technologies (Table 5) Eighty three per cent of the women trainees who adopted all the three employment generating technologies were able to earn as income of Rs. 750 and above. A considerable number of women who advanced mushroom cultivation and fruits and vegetable preservation were able to fetch an income of Rs. 750 and above. Seventy per cent of the women had cultivated mushroom and earned Rs. 750 per month. The data in Table 5 further indicates that the women who engaged themselves in preparing masala powders, phenyl, soap powder, cleaning powder, snacks, woolen garments at home and earn less compared to the other women.

e. Marketing arrangements for employment generating technologies

Though 300 women trained in the employment generating technologies only 99 women started micro enterprises and rest of them utilized the products for their personal consumption. As most women trainees enter into entrepreneurial ventures for the sake of their own home consumption, it is evident that only a third of them enter in to the venture of marketing of the products. The table 6 shows the marketing arrangements made by these entrepreneurs.

Table 6: Marketing arrangements

Arrangements	N:99	Percentage
Sales at public gatherings	49	49.5
Markets	29	29.3
Home sales	18	18.2
Sales at public places	2	2.03
House-to-house sales	1	1.01

Table 6 shows the kinds of marketing arrangements made by the women trainees for the sale of their products. Nearly half of them (50 per cent) sell their products in public gatherings such as meetings, rallies and crowded venues, while less than 30 per cent of them sell in the markets. Eighteen per cent of them sell their products from their homes, while negligible per cent adopt door-to-door method. About 2 per cent of them sell their products at the public places like temple, church, post office and schools where people gather for a variety of purposes.

f. Improving the quality of products

The quality refers to the character or essence of something evaluated subjectively and usually expressed in terms of degree or range. Table 7 depicts the steps to improve quality of products taken by the women entrepreneur. Quality of products and packaging them are the two major concerns which must be taken to improve the product quality.

Table 7: Steps to improve quality of products

Steps	N:300	Percentage
Hygienic preparation	237	79.00
Attractive packing	51	17.00
Certification of products by BIS, AGMARK, FPO	7	2.30
Improving quality of raw materials	5	1.70

From the above table it is noted that, women trainees themselves are aware of the need to improve product quality and they have responded with their suggestions for improvement (Table 7). Hygienic preparation is suggested as one of the means to improve product quality by 79 per cent of the trainees. Attractive packing is mentioned by 17 per cent of them, while certification of the products by the well-known certifying institutions such as the Bureau of Indian Standards (BIS), Agricultural Marketing brand (AGMARK) and Food Products Organisation (FPO) by 2 per cent of them. It appears that the women trainees are already aware of the means to improve their products and their saleability.

g. Problems in adopting employment generating technologies

Table 8 depicts the problems in adopting the employment generating technologies by the women trainees.

Table 8: Problems in adopting employment generating technologies

Problem Types	N:300	Percentage
Lack of time	116	38.67
Marketing problem	110	36.67
Economic problem	68	22.47
Non-co-operation at home	6	2.0

Due to heavy pressure on time, 39 per cent of women were unable to give stipulated time for carrying out the activity. Marketing the products posed a big challenge to 37 per cent of women. The women faced numerous problems in adopting these technologies. The capital investment needed to start micro enterprises was the major constraint experienced by 22 per cent of women and a meagre per cent of women trainees stated lack of co-operation at home to start micro enterprise.

h. Future plans

Table 9 states the women trainees have indicated to their future plans for adopting employment generating technologies in an efficient manner.

Table 9: Employment generating technologies: Future plans

Plan	N: 300	Percentage
Establishing stall	140	46.67
Sharing the learned technologies	73	24.33
Expanding the unit	48	16.00
Giving employment to others	37	12.33
Membership of a cooperative society	2	0.67

Forty seven percent of women expressed that they would like to establish stalls/shops where the products could be sold, for the benefit of their local community. A fourth of the women trainees (24 per cent) would like to share the learnt technologies with the other women and people in the society to bring awareness. Forty eight women would like to extend the units which they have established already, while 12 per cent would like to give employment to others. A minuscule of the trainees wishes to become members of co-operative society. Thus, the women trainees had conceived positive ideas for their future endeavours.

i. Expectations of the trainees from the Krishi Vigyan Kendra

Krishi Vigyan Kendra can play a vital role in the Agricultural Knowledge Information System (AKIS). The prime objective of extension in the near future should be to enable and empower farmers to take well informed and suitable decisions to maximize their farm productivity and thus increase their income. Table 10 shows that the women trainees have also expressed their expectations from the krishi vigyan Kendra or government agencies, which could help them in their efforts in effective management of employment generating technologies.

Table 10: Expectations of the trainees from the Krishi Vigyan Kendra

Expectations	N:300	Percentage
Marketing opportunities	97	32.5
Frequent field visit	77	25.7
Inputs from KVK	70	23.1
Need based training	26	8.7
Financial assistance	16	5.3
Expert advice	14	4.7

From the above table it is revealed that the women undergo training at the KVK realize the potential of KVK. Hence 33 per cent had stated that they require help in marketing their products. Nearly 26 per cent expect the KVK to allow their personnel to make frequent visits so that they may be of use in communicating the latest innovations.

A meager per cent of them expect the KVK to provide need based training to women, arrange for financial assistance and provide expert advice to them. The latter is a very important as they are sure that the

KVK is capable of providing more such advice to potential women entrepreneurs. The KVK being their training institute their expectation are numerous in that the women would like the KVK to provide necessary inputs.

VI. SUMMARY AND CONCLUSION:

India is committed to a steady improvement in the socio-economic conditions and status of women to bring them into the mainstream of national development. Technology is the key to development, to raise income, productivity and living standards of the rural poor. Training on employment generating technologies included three major areas of trust namely cultivation of mushroom, preservation of fruits and vegetables and preparation of products at home. Among these 86 per cent of the women preferred to adopt the preservation of fruits and vegetables. Mushroom cultivation involves a lot of time for harvesting and demands special care during the processing period compare to the other technologies. Hence this is being adopted by 58 per cent of the women trainees only. Marketing and economic problems are the major constraints to adopt mushroom cultivation, fruits and vegetable preservation and Home made products stated by more than 80 per cent of the women trainees. It must be pointed out that the employment generating technologies are generally adopted by a small number of the women trainees, as most of them are poor and are unable to invest money. Most of them are therefore laggards, rather than innovators.

With reference to the capital mobilization, 67 per cent have made their investment entirely from their own savings, but small proportion of them have obtained loan either from the bank or from the co operative society. It becomes clear majority of the women depended on their own savings rather than taking loans. Although the Government had announced financial help for women through several initiative developmental programmes, the procedure involved in availing the credit are strenuous, refrain the women not to venture for obtaining loan facilities. Eighty three per cent of the women trainees who advocate all the three employment generating technologies were able to earn an income of Rs. 750 and above. This analysis further indicated that the women who adopt, who engaged themselves in preparing masala powders, cleaning powders and other items earn less compared to other women. Sales at public gatherings, markets, house to house sales were adopted as the marketing strategies for selling the products. The women trainees aware of the need to improve the product quality and they have suggested hygienic preparation and attractive packing as measures to boost their sales. As a future plan 47 per cent of women expressed that they would like to establish stalls and shops where the products could be sold for the benefit of their local community. Facilitating marketing arrangements and the frequent visit of the personnel from KVK will help these women to take up the employment generating technologies at a higher percentage level.

Suggestions for future programmes:

Their experiences in undergoing the training had indicated some guidance lines for future training courses:

- More than half of the percentage of women suggested that the training should be for 3 months. Seventy two per cent suggested the convenient time for training will be 10.00 a.m to 12.00 noon.
- Training on making Terracota items, Coir related objects and embroidery should be imparted since these women express that there is high potential in marketing.

VII. CONCLUSION:

All of them unanimously raised their opinion that the transfer of technology training opened up new vistas in their life and made them to come out of their village premises removing the cultural, social and economical barriers. Apart from the skill training they learnt importance of values and goal orientation, decision making pattern, resource allocation methods, the needs for keeping clean interior, exterior and adopting balanced menu in their diet. Thus, it can be concluded that the training imparted at KVK paved way for their developing personality traits which in turn result in empowerment.

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