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Gender Mainstreaming and Technology Application: An Appraisal of TANWA Project

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ABSTRACT

The project "Tamil Nadu Women in Agriculture" (TANWA) was launched in 1986 aimed at technological empowerment of farm women. An impact study was conducted in 2013 to understand the technology application and gender empowerment in Kancheepuram district of Tamil Nadu after more than 10 years of project termination. TANWA built up an effective system for the training of farm women with help of specially recruited female extension staff. Farm women groups widened the scope of their work by taking up savings and other income generating activities. The trained farm women adopted a range of agricultural skills leading to increase the yields of main crops, greater marketable surplus and savings on chemical fertilizers. The influence of women in farm matters goes more or less hand in hand with an increase in their influence over family matters. The project had brought a good degree of gender sensitization at household level while building women's capacities as skillful and self-confident farmers. The formation of farm women groups had contributed greatly to the continued viability of some of the income generating activities as well as providing a forum for learning, innovating and extending mutual support among them. Similar attempts elsewhere could enhance the performance of farm women from small and marginal farms in their roles as agricultural producers leading to increased productivity, income and food security.

Key words: Gender mainstreaming, Technology application, TANWA, Women empowerment

INTRODUCTION

Farm households are mainly dependent on the income of the male members. Involvement of women in decision making regarding choice of crops, purchase of inputs and marketing of produce is occasional. The project on The Tamil Nadu Women in Agriculture (TANWA) was signed between Government of India and Royal Danish Government in June, 1986. The project was implemented in a phased manner (Danida, 1991; Danida, 2000; Folke, 2002 and Royal Danish Embassy, 2001). The project was terminated in March, 2003.

The main focus of TANWA was on training of farm women and forming them into groups with an aim to enhance the performance of small scale farms in order to increase productivity, income and food security. TANWA trained nearly one lakh farm women in the State and they were later made into small viable groups to address their economical, social and technical needs and the programme has explicitly demonstrated advantages of the group approach in technology transfer. A study has been taken up in 2013 to analyse the overall improvement in social, economical and political empowerment of farm women in the process of development.

METHODOLOGY

The study was conduceled in Avalur village of Wallajabad block of in Kancheepuram district of Tamil Nadu where the farm women had undergone interventions under TANWA. Randomly 40 respondents were selected from the trainees. Quantitative and qualitative data were collected through focused group discussion and individual interaction. A semi structured interview schedule was developed for data collection.

Information was collected on socio-economic profile, changes in technical knowledge, level of adoption of improved practices, changes in saving habits, utilization pattern of credit and personal experiences on TANWA training as well as constraints in utilising the knowledge acquired through TANWA training.

RESULTS AND DISCUSSION

The village Avalur is composed of 1000 households with a population of near about 4500. One third of the population of the village depend upon agriculture for their livelihood. Paddy is grown in 121.36 ha, sugarcane in 14.60 ha, groundnut in 30.70 ha and sesame in 6.58 ha. The women of Avalur help men counterpart in carrying out the agricultural operations. After getting the training

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under TANWA, women became conscious about their importance in the farming sector. They got exposure to entrepreneurship development, improved package of practices of different crops and preservation and post harvest technologies of agricultural produce. They no longer felt subordination, rather believed they could go hand in hand with their male counterparts and can complement and supplement to their farming system. Women could experience a slow transition for labour to manager.

Since the average age is 47 years and most of the respondents being literate, it was possible to convince them about the new technologies and carry out the interventions to bring out the proposed changes in a feasible manner.

Majority of the respondents had farming as their main occupation and only 12.5 per cent of the respondents maintained their livelihood through wage labour. About 87.5 per cent of the respondents had annual income upto ₹ 60,000/- and 12.5 per cent of the respondents have annual income more than ₹ 60,000/-. About 37.5 per cent of the respondents had 3-5 acres of land followed by 27.5 per cent with 5-10 acres of land. Only 10 per cent of the respondents had more than 10 acres of land. Maximum number of the respondents had backyard poultry units, followed by cows and buffaloes and only half of the respondents had goats. It is inferred that the respondents' economic status is playing a crucial role in technology adoption.

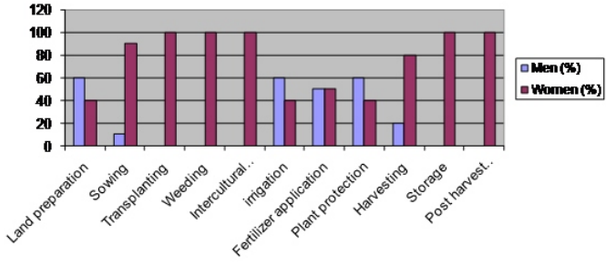

Fig -1: Involvement of men and women in crop production

The activities like transplanting, weeding, intercultural operation, storage and post harvest were exclusively done by women while land preparation, sowing, irrigation, fertilizer application, plant protection and harvesting were done jointly with men (Fig.1). It is very interesting to know that the tasks especially land preparation and plant protection exclusively performed by man in many of the Indian villages are also being performed by women in this village showing that complementary and supplementary roles of both men and women will contribute significantly to higher farm production. After sowing, men leave for other jobs and return only for harvest and the rest of the tasks are performed and managed by women (Jayasree, 1993 and Saravanakumar, 2000).

Saving habit of the TANWA trainees had shown a definite improvement (Table 1).

Table 1: Changes in savings before and after TANWA programme (%)
n=40

Changes	Before	After
More than ₹ 500/-	7.5	27.5
₹ 300-500/-	15.0	40
₹ 100-300/-	27.5	32.5
Less than ₹ 100/-	50.0	-

Before undergoing the training, half of the trainees saved less than ₹ 100/- per month but now none of the members saved less than this. Now 40 per cent of the members saved an amount of ₹ 300-500/- per month and 27.5 per cent of the members saved more than ₹ 500/- per month, but before it was only 7.5 percent. TANWA helped to change the behaviour of the trainees towards the importance of savings and paved the way for improved economic conditions.

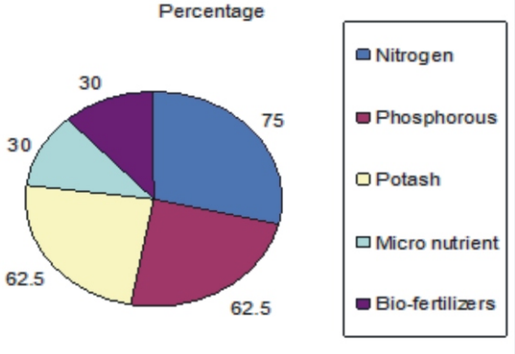

Fig- 2: Knowledge regarding fertilizer application

More than 60 per cent of the trainees were aware about the doses of NPK in the crops and 30 per cent of the trainees were aware about the importance and applicability of micro nutrients and bio fertilizers (Fig.2).

It is interesting to know that the trainees did not even seek the help of the male counterparts at the time of fertilizer application. They knew the exact duration and doses of fertilizer application. This shows how the women had been empowered technically by TANWA.

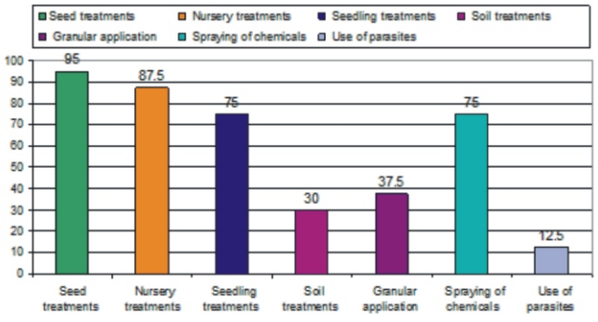

Fig- 3: Knowledge regarding plant protection measures

More than 80 per cent of the trainees were conscious about the importance of seed treatment and nursery treatment, while 7 per cent of the trainees were aware about the application of seedling treatments and spraying of chemicals. Almost 30 per cent of the respondents were aware about the applicability of soil treatment and granular application, while only 12.5 per cent respondents were aware about the importance and utility of parasites in the crop as a biological pest control measure (Fig.3). Over all, the respondents were attentive about the major plant protection treatments like soil treatment, nursery treatment, seedling and use of chemicals in the plant.

Level of adoption of different farming practices indicates the progressiveness of a farmer. Adoption level of different important practices was measured through a semi structural schedule, to know the progress rate of the trainees. The trainees were asked about the adoption of improved seed variety and the results were expressed in Fig- 4

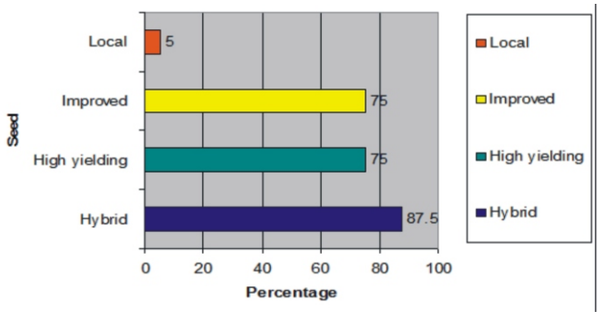

Fig-4: Rate of adoption of improved seed variety

It is quite interesting to know that almost 75 per cent of the respondents were adopting hybrid, high yielding and improved variety of seeds whereas only 5 per cent used only local seeds indicating that trainees were aware about the importance and usefulness of the improved variety. Some of the respondents stated that the production of the improved variety is more than double of the local variety.

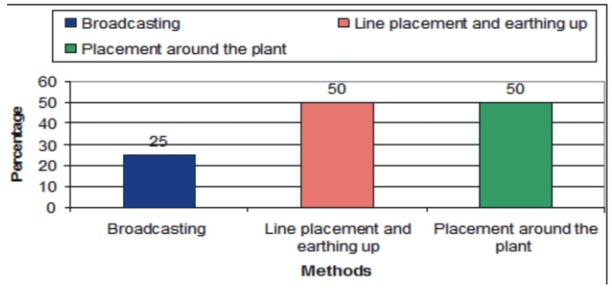

Fig- 5: Adoption of improved methods of fertilizers application

Half of the respondents were following line placement and earthing up and placement around the plant method while only 20 per cent were following broadcasting method of applying fertilizers (Fig.5).

The interaction with group members of TANWA revealed the following changes in adoption of package of practices in crops like rice, groundnut and vegetables.

Table 2: Change in the level of adoption of package of practices

n=40

Name of the practice	Before TANWA	After TANWA
Rice Seed treatment	Nil	Treatment with carbendazin and pseudomonas bacteria
Biofertilizer application	Only green manure	Biofertilizer + green manure
Balanced fertilization	Only urea on 25th day	Neem cake + NPK, split application
Nursery treatment	Nil	Azospirillum
Ferilizer in nursery	Only urea	DAP application
Weeding	Only hand weeding	Weedicides like butachlor, anilophos round up
Identification of beneficial and harmful insects	Nil	Beneficial insects could be easily identified after farmer field school training.
Pest management	No idea	Economic threshold level (ETL) based insect control
Varietal selection	Only local varieties cultivated but susceptible to blast disease	ADT-43,47,36,37,45
Harvest	Manually using sickle	Machine cutting

There is no doubt that the trainees have set a good example of women empowerment and gender mainstreaming, but apart from that there are certain obstacles which hindered them to obtain the full fledged profit. Cumbersome process of getting monetary help from the financial organization and non-availability of cooperative bank, heavy competition on marketing of agricultural produce, lack of timely technical advice due to lack of mobility to distance places, lack of family enthusiasm and cooperation, distant location of veterinary hospital, scarcity of farm labour during peak agricultural season leading to payment of higher wages, natural calamities and non-availability of relief in time, fast spreading of real estate business engulfing vast farm

land were some of the problems prominently expressed by farm women.

The success of the project can be assessed from which is the impact of training and skill demonstration continues to be visible with respect to technology adoption, skill acquisition, development of communication skills, increase in yield of crops and animals *etc.* The gender bias is greatly removed due to women to women programme which helped in learning and follow-up. The women farmers became technologically sound in farming methods and skills. The training strategy was designed in such a way that it suits the farm women of different agro climatic conditions. Most of the agricultural technologies and methods were need based, low cost or no-cost and environment friendly. The farm women formed a TANWA FWG (Farm Women Group) which is a typical model for sharing knowledge of technology with fellow women and co-farmers (Kokate, 2012) and contributed greatly to the continued viability of the some of the income generating activities (Danida, 2004). Total intellectual and physical participation of women is essential to popularise alternative system of land management (Ponnusamy *et al,* 2014). The kind of model that helped in technical, economic and social empowerment of farm women should be replicated in any part of the developing countries in executing any technical programme.

CONCLUSION

Tamil Nadu women in Agriculture (TANWA) project funded by Royal Danish Government made sustainable impact in terms of knowledge retention and technology application among farm women. The study at Avalur village in Kancheepuram district of Tamil Nadu indicated that farm women continued to adopt scientific farming practices even after 10 years of project completion. Women were able to recall the important learnt skills, tried out new methods in their farms resulting in higher yields and savings in respect of chemical pesticides and fertilizers. The typical TANWA FWG (Farm Women Group) model has been found to be effective in technology transfer such models need to be promoted throughout the length and breadth of the country in order to bring women led profitable and sustainable farming.

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