Indian Journal of Agricultural Sciences **86** (9): 1214–9, September 2016/Article
https://doi.org/10.56093/ijas.v86i9.61523

Factors influencing agri-preneurial success among rural women entrepreneurs: An empirical analysis

NARAYANAN G[1], PREMLATA SINGH[2] and V P CHAHAL[3]

ICAR–Indian Agricultural Research Institute, New Delhi 110 012

Received: 1 July 2015; Accepted: 9 May 2016

ABSTRACT

The study was purposively conducted among 97 women agri-preneurs of Vellore district of Tamil Nadu. Measuring precisely the success/failure of the rural women entrepreneurship is difficult and complex in the absence of a well-developed scale.Women agri-preneurs were grouped into four categories of success/failure by administering a measuring scale. As high as 47.43% of agri-preneurs were found to be in 'somewhat success' category, whereas 16.49% agri-preneurs were in 'high success' category and 9.27% of them were found to be in 'high failure' category and 26.81% of the agri-preneurs were found in 'somewhat failure' category. The Garrett ranking showed that successful women agri-preneurs perceived 'self', 'family', 'skilled labour', 'credit transaction in time' and 'demand', whereas unsuccessful agri-preneurs perceived 'spouse', 'NGOs', 'friends', Government incentives' and 'family' as the five most important factors for success. Discriminant Function Analysis is a statistical tool used to discriminate between two classes of individuals on the basis of characters which are considered to be relevant. Stepwise procedure was used to identify the relevant variable and the significant ones were identified based on the 'F' test. The Fisher's discriminant function equation established 'achievement motivation' 'general perceived self-efficacy', 'collective efficacy', 'proactive attitude' and 'self-esteem' as the top five most discriminating variables. Hence, trainings in achievement motivation development, team building, collective efficacy and developing personal managerial competencies like 'proactive attitude' need to be incorporated in women agri-preneurship development programmes for success in rural women agri-preneurships.

Key words: Discriminant analysis, Entrepreneurial success/failure, Perceived factors, SHGs, Women agri-preneurs

Entrepreneurship is a dynamic process and has a crucial role in economic development of a country. This is particularly more beneficial for women in rural areas as it enables them to add to the family income while taking care of their farm, home and agri-enterprise centred tasks. Entrepreneurship development among rural women not only helps to enhance their personal capabilities but also decision making status in the family and society as a whole. India is emerging as a major power with the country registering high growth rates with our cities and urbancentres beginning to display marks of affluence. Despite the fact that women are the world's principal food producers and providers, they remain as 'invisible partners' in rural development. Among the galaxy of interventions by Government focusing on women, the most effective one was the scheme of *Swarnajayanti Gram Swarozgar Yojana* (SGSY) 1999, which provided enabling environment for systematically organizing women in groups for providing them opportunities of self-employment on a sustained basis in India by developing micro-enterprises through micro-credit based SHG approach. Women micro-entrepreneurship development is an essential part of human resource development. In India, the feminization of agriculture is taking place since early 1990s and self-help groups (SHGs) are considered as effective mechanism for developing women agri-preneurs in rural areas. The sustenance and successful conduct of women agri-enterprises is core of the SGSY scheme and crucial for women empowerment and poverty alleviation. Hence, present study was aimed at to study the factors influencing agri-preneurial success among rural women.

MATERIALS AND METHODS

The study was purposively conducted during the year 2011 in Vellore district of Tamil Nadu state due to the highest number of self-help groups (Ministry of Rural Development, 2011). Three taluks, viz. Tirupathur, Vellore, and Katpadi were selected for the study by using random sampling technique. The respondents were drawn from three taluks of Vellore district which were selected based on random sampling technique. Five villages each from selected

[1]Scientist (e mail: narayananiari@gmail.com), ICAR-Directorate of Groundnut Research, [2]Head (e mail: premlataashok@ gmail.com), Division of Agricultural Extension, ICAR-IARI, New Delhi 110 012, [3]Principal Scientist (Agricultural Extension) (e mail: chahalvp@gmail.com), KAB-I, ICAR, New Delhi 110 012.

taluks were selected randomly. Further, from each village, ten SHGs micro-entrepreneurs with total of 150 were selected. Out of total SHGs, a sample of 97 women agri-preneurs belonging to 46 SHGs were selected with the criteria of having minimum of three years of agri-enterprises involvement. Data were collected through personal interview by using a pre-tested structured interview schedule covering 24 variables. Women agri-preneurial success was assessed by using Sadangi's (1991) entrepreneurial success index with slight modification. The modified women agri-preneurial success index consists of six components, viz. gross return per unit investment, net income (rupees per annum), degree of satisfaction, credit worthiness, and self-employment.

All the above six indicators were considered as very critical and used to draw the line of demarcations. The maximum obtainable score was 100 and the respondents who had scored more than 50, treated as successful, whereas those whose score was less than 51 were treated as failure. The degree of success and failure among women agri-preneurs were further divided into four categories as highly successful, somewhat successful, somewhat failure, and highly failure with corresponding scores of 76-100, 51-75, 26-50, <26, respectively. Eighteen possible factors affecting success and failure of women agri-preneurships were also identified. The respondents were asked to specify the favourable, unfavourable and neutral factors in their own situation. To know the relative strength of positive and negative factors, the respondents were further asked to rank the factors.

A factor was considered 'neutral' for the women agri-entrepreneurs when it was perceived neither affecting nor concerned with his occupation in any way. Thereafter, the frequency of respondents against each factor was calculated for positive, negative and neutral response categories separately for successful and unsuccessful agri-preneurs. A null hypothesis propounded that there is no significant difference among the frequency of positive, negative and neutral category andtested by chi-square goodness of fit.

The determinants of success or failure in rural women agri-preneurship were also determined through Wilcoxon-Mann-Whitney test, Kruskal-Wallis test and discriminant analysis.

RESULTS AND DISCUSSION

It was observed from the Table 1 that out of the total respondents, about 25% of them were involved in dairy farming followed by vegetable selling (15.46%), poultry farming (11.34%), leased in guava gardens (10.30%), pickle making (9.27%), flower and vegetable cultivations (8.24%), Amaranthus cultivation (7.21%). Very few respondents were involved in coconut gardens (2.06%) and mini-flour mills (3.09%). After identifying the nature of activities women agri-preneur's involvement, their performance and distribution on various dimensions of success/failure were analyzed.

Table 2 revealed that by and large the women agri-

Table 1 Distribution of respondents according to their entrepreneurial activities (n=97)

Agri-preneurship activities	Frequency	%
Dairy farming	24	24.74
Vegetable selling	15	15.46
Poultry farming	11	11.34
Leased in guava gardens	10	10.30
Pickle making	9	9.27
Flower and vegetable cultivations	8	8.24
Amaranthus cultivation	7	7.21
Leased in coconut gardens	2	2.06
Leased found mini flour mills	3	3.09

Table 2 Distribution of women agri-preneurs on women agri-preneurs success measurement index (n=97)

Levels of indicator	Frequency	%
Net income (₹/annum)		
12001 - and above	16	16.48
9001 - 12000	27	27.83
6001 - 9000	23	23.71
3001 - 6000	24	24.74
Up to 3000	7	7.24
Percentage of reinvestment of profit		
>41%	17	17.54
31-40%	13	13.40
21-30%	12	12.37
11-20%	24	24.74
Up to 10%	31	31.95
Credit worthiness		
Very Good	5	5.17
Good	33	34.02
Little	26	26.80
Very Little	13	13.40
Nil	20	20.61
Degree of satisfaction		
High satisfaction	11	11.34
Satisfaction	41	42.26
So - So	19	19.58
Dissatisfaction	21	21.64
High dissatisfaction	5	5.18
Gross return (%) per unit investment		
141-160	8	8.24
121 - 140	26	26.80
101 - 120	43	44.32
81-100	14	14.43
61-80	6	6.18
Self-employment (%)		
76 - 100% of their time	45	46.39
51 - 75% of their time	18	18.56
26- 50 % of their time	10	10.30
Up to 25 % of their time	24	24.75
No time investment		-
Successful agri-preneurs	62	63.92
Unsuccessful agri-preneurs	35	36.08

preneurs (44.32%) had gross return per unit investment at the level of 101.00 to 120.00%. Net income (27.83%) of ₹ 9 001 to ₹ 12 000, 42.26% with normal degree of satisfaction, 46.39% employed themselves for 76.00 to 100.00% of their time, 13.40% reinvested their profit above 31.00%, and 60.82% had good to little credit worthiness from various credit giving agencies. Apparently, the data presented in the table may raise some doubts as to how the women agri-preneurs having gross return of 100.00 to 120.00% of gross return per unit investment, showed normal level of satisfaction. The explanation for this may be that even if an individual gets gross return from their enterprises about 101-120%, she may not be having sufficient net income, i.e. above ₹ 6 000 or she may not be having high satisfaction in agri-enterprise which she owns or her level of aspirations may be low.

Similarly, a woman agri-preneur, who was found satisfied maybe unsuccessful in her endeavour because she might be getting less gross return per unit investment or net income below ₹ 6 000. Further the survey brought out some important aspects of women agri-preneurs under SGSY in Tamil Nadu. About 27.83% of them got net income up to ₹ 9 001-12 000 per annum, though less but all of them wanted to continue in their occupation because at least their labour did not go waste. Getting similar employment outside was not easy and if at all the women agri-preneurs get and accept it, it would lower their prestige.

Although majority of the women agri-preneurs got some net income from their agri-enterprises only 30.94% of them could plough back some income (31% and above) for further expansion and growth. It was observed that other pressing family needs compelled many of the women agri-preneurs to utilize much of their profit for family expenditure. Further, these agri-preneurs were classified into successful and unsuccessful based on their performance in women agri-preneurial success/failure index. It was found that in the locale of study 63.92% of the agri-preneurs were successful and 36.08% were unsuccessful in their ventures. Madhavi (2010) did a comparative study of rural and urban women entrepreneurs in Ahmednagar district of Andhra Pradesh. Sampling and Garrett's ranking technique were used in comparing the rural and urban women entrepreneurs. The findings revealed that women from rural area were not doing well due to lack of financial support and inadequate demand from customers. Further in line with the findings of study, Kaur and Bawa (1999) studied the psychological correlates of entrepreneurial performance among women on a sample of 100 middle class women entrepreneurs in India. The results indicated that women take up business ventures for a variety of reasons. The more successful among them were found to score high on ability utilization, achievement, advancement, economic rewards, personal development and prestige.

Degree of success and failure

After identifying two groups of women agri-preneurs, it was important to classify each group according to the degree of success/failure. For this all the scores obtained by the successful and unsuccessful women agri-preneurs on all the six indicators of the women agri-preneurial success/failure index were added and classified into four classes as per the range assigned to each one. It was found that as high as 47.43% of women agri-preneurs were found to be in somewhat success category, whereas 16.49% women agri-preneurs were in high success category. It was observed that due to inherent problem in agri-enterprises like inadequate forward and backward linkages, only 16.49% of women agri-preneurs were able to reach high success category (Table 3).

Table 3 also revealed that 9.28% of them were found to be in high failure category and 26.91% of the women agri-preneurs were found in somewhat failure category. It is inferred from the findings that the unsuitable micro-entrepreneurial training, improper selection of economic activities, or inadequate marketing facilities might have contributed to their failures. Further an attempt was made to know the factors of women agri-preneurial success/failure in the perception of women agri-preneurs by using a pre-structured open ended interview schedule.

Perceived factors of success and failure by successful and unsuccessful women agri-preneurs

Seeking response directly from the women agri-preneurs is another way to ascertain their perception about the factors which affect their success and failure. It takes care of many such factors which are not included in the profile and statistical analysis. In the first instance, the women agri-preneurs, both successful and unsuccessful, were individually asked to indicate whether a particular factor was positive, negative or neutral from the view point of its effect on their success in micro-entrepreneurship. The result in this regard is presented in the Table 4.

Table 4 showed that majority of SHG successful micro-entrepreneurs were affected by eight factors, viz. spouse, demand, market facilities, family, bank, self, friends and credit transaction in time. The percentages of those affected positively by the above factors were 80.60, 76.81, 66.67, 64.81, 60.19, 56.48, 54.63 and 50.93%, respectively. Only a smaller number of successful women agri-preneurs were affected positively with the remaining 10 factors. The scenario with unsuccessful women agri-preneurs was slightly different. The locational advantages, market price, credit transaction in time, NGOs role, and skilled labour were

Table 3 Distribution of successful and unsuccessful SHG micro-entrepreneurs according to their degree of entrepreneurial success/failure (n=97)

Category	Frequency	%
High failure	9	9.28
Somewhat failure	26	26.92
Somewhat success	46	47.31
High success	16	16.49
Total	97	100.00

Table 4 Perceived factors of success by successful and unsuccessful women agri-preneurs (n=97)

Factors	Successful women agri-preneurs (n=62)				Unsuccessful women agri-preneurs (n=35)			
	Positive (%)	Negative (%)	Neutral (%)	Garrett mean score	Positive (%)	Negative (%)	Neutral (%)	Garrett mean score
Spouse	80.60	0.00	19.40	71.34	73.81	16.67	9.52	85.65
Family	64.81	23.15	12.04	86.32	83.33	12.01	4.76	78.27
Friends	54.63	27.78	17.59	64.93	71.43	28.57	0.00	82.37
NGOs	35.19	17.59	47.22	67.02	76.19	19.05	4.76	85.28
Gov. officials	24.08	19.44	56.48	52.89	28.57	30.95	40.48	54.8
Bank officials	60.18	25.93	13.89	57.36	76.19	9.52	14.29	70.29
Self	56.48	17.59	25.93	89.14	61.90	11.90	26.19	73.74
Money	40.73	51.85	07.41	55.82	97.62	2.38	0.00	66.37
Raw material	16.67	44.44	38.89	79.43	23.81	40.48	35.71	77.85
Time required	26.85	46.30	26.85	71.58	21.43	52.38	26.19	41.79
Location	43.52	20.37	36.11	54.71	100.0	0.00	0.00	63.66
Demand	76.81	0.04	23.15	81.65	64.29	11.90	23.81	28.9
Competition	35.19	37.96	26.85	74.27	47.62	38.10	14.29	45.02
Market price	27.48	41.67	26.85	75.82	92.86	2.38	4.76	51.25
Skilled labor	30.56	40.74	28.70	86.17	76.19	16.67	7.14	59.51
Govt. incentives	45.37	0.93	53.70	61.81	23.81	0.00	76.19	81.4
Market facilities	66.7	0.03	33.33	77.02	59.52	0.00	40.48	36.27
Credit transaction in time	50.9	0.03	49.07	84.28	90.48	0.00	9.52	33.65

perceived to be positively influencing factors. The corresponding percentages of those affected positively by the above factors were 100.00, 92.86, 90.48, 76.19% and 76.19, respectively. These three categories were subjected to Chi-square test separately, i.e. for successful and unsuccessful women agri-preneurs. The calculated value of Chi-square test was observed to be 454.36, which was much higher than the tabulated value and hence these three groups significantly differ ($P<0.01$) in terms of their perception, viz. positive, negative and neutral. The same trend was observed among the unsuccessful women agri-preneurs with as much higher calculated Chi-square value which means that these three groups significantly differed in terms of the perception, viz. positive, negative and neutral.

In the later part of further analysis, the degree of favourableness to each factor was calculated and all the factors were ranked based on Garrett mean score separately.

The successful women agri-preneurs ranked 'self' as first factor influencing their success followed by family, skilled labour, credit transaction in time and demand. Other factors like Government officials, location, money, bank, and Government incentives were the least important factors as perceived by the successful women agri-preneurs. The unsuccessful women agri-preneurs perceived spouse, NGOs, friends, Government incentives and family as the five most important factors while demand, credit transaction in time, market facilities, time requirement, and competition were least important factors.Kalyani and Chandralekha (2002) observed that the socio-economic and demographic characteristics have a significant impact on the involvement of women entrepreneurs particularly when it comes to enterprise management. Many of them do receive help from their family members in carrying out various kind of work. Aravinda and Renuka (2002) revealed the important factors which motivated the women towards entrepreneurship are self-interest and inspiration. The identified facilitating factors are self-experience, interest, family's help and support. The main conflicts in work role pertained to inability to expand the enterprise and optimum utilization of available skills, non-availability of time to spend with family and being a good spouse were the conflict areas faced in the performance of the home role.

Factors responsible for success in SHG based women agri-preneurships

The determinants of success or failure in women agri-preneurships were examined by using Wilcoxon-Mann-Whitney test, Kruskal-Wallis test and discriminant analysis and the findings in this regard are presented in Table 5.

It can be seen from the Table 5 that the variables like family size, training received, skill development, influential power over others were found to significantly differ between two groups at 5% level of significance. In addition to these the variables like achievement motivation, collective efficacy; proactive attitude, general perceived self-efficacy, self-esteem, and power over economic resource were found to be significantly differing at 1% level. Hence from the above analysis, it may be concluded that the important factors responsible for success in SHG based women agri-preneurial activities were achievement motivation, collective efficacy, proactive attitude, general perceived self-efficacy, self-esteem, and power over economic resource.

Similarly, Sinha (2003) concluded that there are several factors for the emergence of women entrepreneurship in the north east such as family background, motivating and facilitating factors, ambition, attitudes of family/ society,

Table 5 Variables responsible for success in the women agri-preneurial activities (n=97)

Variables	Mean score		Wilcoxon 2 sample test	Kruskal-Wallis test
	Successful (n=62)	Unsuccessful (n=35)		
Age	78.28	78.63	0.583	0.581
Education	77.90	69.32	0.275	0.273
Occupation	76.77	72.22	0.520	0.518
Landholding	72.78	82.47	0.189	0.186
Caste	78.61	67.50	0.129	0.126
Social participation	77.20	71.10	0.3793	0.376
Material possession	77.72	69.78	0.271	0.268
Family size	79.31	65.67	0.049*	0.046*
Type of household	77.81	69.53	0.261	0.258
Level aspiration	75.21	76.23	0.887	0.885
Self-reliance	75.70	74.976	0.919	0.917
Training undergone	70.78	87.630	0.026*	0.025*
Achievement motivation	90.87	35.95	<.0001**	<.0001**
Collective efficacy	86.41	47.44	<.0001**	<.0001**
Pro-active attitude	85.81	48.96	<.0001**	<.0001**
General perceived self-efficacy	87.32	45.08	<.0001**	<.0001**
Self-esteem	83.93	53.80	0.0002*	0.0001**
Psychological stress	77.11	71.35	0.467	0.464
Self-development	77.28	70.90	0.417	0.415
Participation in general family welfare	76.71	72.380	0.580	0.578
Impact on health and hygiene	78.12	68.76	0.234	0.231
Skill development	80.93	61.53	0.013	0.012*
Influential power over others	80.93	61.53	0.014	0.0128*
Power over economic resources	83.25	55.54	0.0005	0.0004**

*5% level of significance, **1% level of significance

etc. Women of the region have enough potential to take up entrepreneurship as a career. There is a strong need of support to be given by the organization working for promotion of entrepreneurship in general and women entrepreneurship in particular. Determined efforts from women entrepreneurs supported by congenial climate can bring about substantial results. This can also bring positive change and develop the region.

Discriminant function analysis

The Discriminant function analysis indicated that out of total 24 variables, seven variables were found to be significant in differentiating between the two groups, viz. successful and unsuccessful agri-preneurs (Table 6.)

The discriminant function is obtained as shown in Fisher's linear discriminant function

$Z = -.088x_1 + 0.069x_2 + 0.66\ x_3 + -0.041\times_4 + 0.200 \times_5 + -.039\times_6 + -.110\ \times_7 + .009\times_8 + .003\times_9 + -.120x_{10} + -.033\times_{11} + -.126\times_{12} + .543\times_{13}* + .338\times_{14}* + .312\times_{15}* + .371*\times_{16} + .244*\times_{17} + .154*\times_{18} + .010\times_{19} - 0.63\times_{20} - .105\times_{21} + .076\times_{22} + .078\times_{23} + .231*x_{24}$

It is clear from the findings that the variables such as achievement motivation, general perceived self efficacy, collective efficacy, proactive attitude, self-esteem, power over economic resources and psychological distress were the major variables which influenced the most. It is very much clear from the Fisher's linear function that achievement motivation (0.543) was the most important variable discriminating the groups. This leads to the conclusion that there is a significant difference in level of achievement motivation of successful and unsuccessful women agri-preneurs. Further after achievement motivation, the variables like general perceived self-efficacy (0.371), collective efficacy (0.338), proactive attitude (0.312), and self-esteem (0.244) were found to be the major influencing factors for success of women agri-preneurs. Hence, these psychological factors need to be strengthened through appropriate capacity building interventions.

Table 6 Comparative profile of successful and unsuccessful SHG micro-entrepreneurs using discriminant function analysis (n=97)

Variables	Statistic	d f 1	d f 2	Significant
Achievement motivation	73.745	1	148.000	<.01**
Collective efficacy	64.994	2	147.000	<.01**
Self-esteem	55.339	3	146.000	<.01**
Pro-active attitude	48.365	4	145.000	<.01**
Power over economic resources	41.838	5	144.000	<.01**
General perceived self-efficacy	38.277	6	143.000	<.01**
Psychological stress	34.281	7	142.000	<.01**

**Significant at 1% level.

Accelerating the process of agricultural and rural development is a challenge. The SHG based women agri-enterprises in rural areas have potential to meet this challenge. The findings of this study show that majority of the women agri-preneurs wereunder 'somewhat success category'. There were remarkable differences also observedbetween the success and failure groups on other economic and psychological indicators. The discriminant analysis showed that 'achievement motivation' was found to be the most discriminating variable for success and failure groups. Thus to increase level of achievement motivation, development of aptitude for conducting diversified economic activities and development of managerial core competencies are essential for women agri-preneurs. This can be achieved through proper women agri-preneurships development training by the district level agencies. This development will lift the rural women out of poverty and ensure sustainable empowerment thereby managing all resources for her and betterment of her family.

REFERENCES

Abraham Vijayan. 2001. A study on women development and micro-enterprises in Trivandrum district of Kerala. M Sc (Ag) thesis, Kerala Agricultural University, Thrissur.

Adler N and Stewart J. 2004. Self-Esteem: Summary prepared in collaboration with the Psychological working Group.

Akhouri M M P. 1979. Entrepreneurial Economic Success Index (EESI) for assessing entrepreneurial success. *SEDME* **4**(1): 36–49.

Aravinda C H and Renuka S. 2002.Women entrepreneurs – an exploratory study. *Public Opinion* **47**(5): 27–8.

Bernard L C, Hutchinson S, Lavin A and Pennington P. 1996. Ego-strength, hardiness, self-esteem, self-efficacy, optimism and maladjustment: Health related personality constructs and the "Big Five" model of personality. *Assessment*, **3**(2): 115–31.

Bhargava V P. 1984. Measurement of Motivation. *DEI Research Journal of Education and Psychology* **2**(1): 14–8.

Biswas S N. 2004. 'Empowerment: From self-efficacy to collective efficacy'. *Quarterly Journal of Foundation for Organisational Research and Education* XXI9 (4).

Blascovich J and Tomaka J. 1991. Measures of self-esteem. (In) Robinson J P, Shaver P R and Wrightsman I S. *Measures of Personality and Social Psychological Attitudes*. (eds). Academic Press, CA.

Bogaerf M V D and Das S P. 1989. Group Entrepreneurship with rural poor- an idea, whose time has come. Indian Social Institute, New Delhi.

Kalyani W and Chandralekha K. 2002. Association between Socio-economic Demographic Profile and involvement of Women Entrepreneurs in the Enterprise Management. *Journal of Entrepreneurship* **11**(2): 219–45.

Kaur R and Bawa S. 1999. Psychological correlates of entrepreneurial performance among women. *Journal of Entrepreneurship* ***8***(2): 195–205.

Kerlinger F N. 1964. *Foundations of Behavioural Research*, pp 156–8. Surjeet Publication, New Delhi.

Moyle L Tracey, Maureen Dollard and Saswata Narayan Biswas. 2006. Personal and economic empowerment in rural Indian women: A self-help group approach. *International Journal of Rural Management* **2**(2): 2006.

Patagaokar S Madhavi. 2010. Entrepreneurship development among women in Shrirampur Taluka of Ahmed Nagar, District. *1UP Journal of Entrepreneurship Development*, March-June.

Purushotham P. 2006. National level study on SGSY: A process evaluation study. NIRD, Hyderabad.

Sinha Poonam. 2003. Women entrepreneurship in the North East Indian motivation, social support and constraints. *Indian Journal of Industrial Relations* 38 (8).

Sadangi Biswanath. 1993. Entrepreneurial diversification of PMRY beneficiaries in the coastal Orissa. Ph D thesis, Indian Agricultural Research Institute, New Delhi.

Singh N P. 1982. Financial Institutions and Rural Entrepreneurship-Reflections and observation. (*In*) Singh N P. *Role of Financial Institutions in Rural Entrepreneurship*. (Ed), pp 72–82. Development Banking Centre, Management Development Institute, New Delhi.

Singh P and Jhamtani A. 2005.Empowerment of women in agriculture. NATP mission mode project report, Indian Agricultural Research Institute, New Delhi.

United Nations. 2001. Empowerment of women through the life cycle as a transformative strategy for poverty eradication.(EGM/POV/2001/Report).

Vasimalai M P. 2002. Building through micro finance. *DHAN New Letter* **2**: 8–95.

Vipinkumar V P. 1998. SHG dynamics of Kerala Horticulture Development Programme. Ph D thesis, Indian Agricultural Research Institute, New Delhi.

Yadav Lali, Jayanthi Neetima and Vandana 2005. Capacity building of farm women through SHGs. Seminar paper, National seminar on Green to Evergreen revolution: Challenges to Extension Education, organised by Indian Society of Extension Education at IARI, New Delhi, 15-17 December 2005.