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## Market-led Extension and Empowerment of Smallholder Vegetable Farmers in India

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### Abstract

The study was conducted to analyze the impact of market-led extension in the marketing pattern and empowerment of smallholder farmers of India. Since market-led extension activities mostly implemented through self help groups (SHGs) 60 marginal vegetable farmers with SHG membership and another 60 marginal vegetable farmers with no SHG membership selected as the respondents. Results conveyed that SHG farmers marketed vegetables mainly through farmers' markets. But, majority of the non-SHG farmers sold vegetables through commission agents. Empowerment analysis done using the criteria of  $\geq 75\%$  of maximum attainable score showed significant differences between the empowerment status of SHG and non-SHG farmers. About 62% of SHG farmers found empowered because of their participation in SHGs whereas very few (2%) of the non-SHG farmers showed empowerment. It was also found that social recognition is the prime variable influenced the empowerment of SHG farmers followed by income generation. Though only a few non-SHG farmers showed empowerment again social recognition identified as the major variable contributed to their empowerment score followed by innovativeness. Since social recognition played prime role in the empowerment process of both SHG and non-SHG farmers it could be considered as the precursor of empowerment process. It is evident from the study that in order to convert social recognition to empowerment a reasonable level of income generation is also necessary. To extend the benefits of market-led extension to more rural farmers the technology dissemination system should also be improved by incorporating those grass root level organizations (public/private) working among them.

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**Keywords:** SHGs, market-led extension, marketing pattern, empowerment

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### 1. Introduction

Agriculture and Indian economy are closely linked as it provides employment to a lion share of Indian population. Rural farming communities of India mostly belong to small or marginal category and they need services of agricultural extension to respond precisely to the diversified demands of the domestic and export markets. According to Brewer (as cited in Singh et al., 2013) India owns one of the largest extension systems in the world in terms of its trained man power and the public agricultural extension system played a major role in imparting knowledge and skills to the farmers during the Green revolution period. However, in the last two decades the linkage between research, extension, and farmer has become weak compared to that of 70s and 80s (Raabe, 2008) and public funding for agricultural R&D has also come under scrutiny because of the uneven performance of agricultural sector (Pal, 2008). In fact, agricultural systems across the world are also under pressure in managing a range

of issues like unstable commodity prices, rising input cost, land degradation etc. (Tonts and Siddique, 2011). In the current Indian agricultural scenario where there is a wide variation exists in the socio-economic strata of farmers live in the same locality treating agricultural extension as a simple medium to communicate those technologies that have performed well in the research fields to farmer's fields may not work well. Because, performance of any innovative technology in farmer fields will be affected by a number of factors like the differences in social, economic, and ecological features within farming community (Nhongonhema, 2010). Since farmers receive most of the technical know-how from agricultural extension system it is high time to look beyond to a more inclusive 'livelihood extension' (Farrington et al., 2002).

Reforms in the extension system are common worldwide phenomenon and many countries including India are on the way of reorienting its agricultural extension service system (Planning Commission, 2007; World Bank, 2012). There is



no doubt that a decentralized and demand-driven extension approach helps the farmers to set their targets and also to demand for their extension and research priorities (Babu et al., 2013). Market-led extension is one of the new dimensions of agricultural extension that envisages farming as an enterprise with diversified options of technology packages to suit different farming situations (Reddy and Chandrashekhara, 2002). The approach is a perfect combination of agriculture, economics and extension equipped enough to reach the door steps of common man with the help of appropriate technology packages (Kaleel et al., 2007). In India, market-led extension initiatives mostly implemented through self-help group (SHG) approach and most of SHGs are supported by different Non-governmental Organizations (NGOs) working in the rural areas. As these organizations remain close to the producer group they are responding quickly to direct needs of farmers compared to the public extension system (Kalra et al., 2013). In this way, Market-led extension through self-help group approach facilitate the decision making of farming community by lessening their uncertainties related to “what to produce, when to produce, how much to produce, when and where to sell, at what price”. The present study was carried out to analyze the impact of market-led extension activities through self help groups (SHGs) in improving the livelihood of small and marginal farmers of southern India.

## 2. Materials and Methods

### 2.1. Sampling

Kerala, a southern State of India was selected as the study area because of the predominance of SHGs in the state from the late 1990s as a micro-credit initiative. SHGs formed under two agencies viz., *Kudumbasree* and Vegetable and Fruit Promotion Council Keralam (VFPC) were selected for the study. *Kudumbasree* (a Malayalam word means *prosperity of the family*) is a Government of Kerala initiated SHG movement for poverty reduction in the year 1998 and it is one of the major women's movement in Asia that covered a membership of 3.9 million families in the last fifteen year (<http://www.kudumbashree.org>). Group farming is one of the major activities of these small neighbourhood groups since its beginning. VFPC is a company registered in the year 2001 under section 25 of Indian Companies Act 1956. Fifty percent shares of VFPC owned by the member farmers, 30% by the government of Kerala and 20% by the related institutions. Being a successor of Kerala Horticulture Development Programme (KHDP) funded by European Union VFPC is also working in the horticulture domain. Six SHGs formed under *Kudumbasree* and VFPC, operating at Thrissur and Kasaragod districts of Kerala were selected for the study. Ten respondents were selected randomly from each unit that constituted a total sample size of sixty SHG respondents. Another sixty farmers of similar socio-economic background with no SHG backup were selected from the same localities as the control group.

### 2.2. Data collection and analysis

Data collection was carried out in two phases from the same

group of respondents; firstly in the year 2007 and further in the year 2013 as a follow-up study. This approach of data collection had been used purposively to reduce error in data due to the high activity of SHGs in the initial years and a lag phase in the following years. We analyzed these two groups for their 1) Socio-economic profile 2) Production and marketing pattern 3) Techno-economic and socio-psychological empowerment level through personal interview and group discussion. A semi-structured interview schedule was developed for this purpose. Data on the proximity and use of different marketing channels by the SHG and non-SHG farmers were also collected and the concept of Venn diagrams was used to depict the results. To assess the empowerment status of the two groups of farmers eight indicators (social participation, social recognition, innovativeness, communication ability, knowledge about the new agriculture technologies, market awareness, income generation, credit utilization) were used under four dimensions viz., social, personal, technological, and economic. These indicators were selected through judges rating methodology. Respondents were asked to rate five statements for each indicator on a four point scale. Since the data collection was carried out in two phases mean of the two years' scores of each statement was considered for the data analysis. The criteria used to check the empowerment status of the two groups of respondent farmers was percentage analysis. For the study, a farmer was operationally defined as empowered if his/her mean score was  $\geq 75\%$  (three-fourths) of the maximum attainable score. Further, to test the statistical significance of the differences in the empowerment status between the two groups Mann-Whitney U test was used. Also, to assess the contribution of each variable toward the total empowerment within each group Friedman test was used.

## 3. Results and Discussion

### 3.1. Socio-economic profile of SHG and non-SHG farmers

The results of the study revealed that most of the farmers of the SHG group were young and belonged to below 50 years (60%) compared to the non-SHG farmers (47%). But, in literacy level both group of farmers were more or less in the similar state as majority of them (62% of both groups) completed high school education. More than half of the farmers of both groups belonged to the small farmer category (56% of SHG and 78% of non-SHG) with average land holding of less than 1 acre. Mostly the farmers of both groups belonged to the below the average income group (83% of SHG and 93% of non-SHG) with an average net annual income of less than ₹ 50000 and rest of the SHG and non-SHG farmers belonged to the ₹ 50000–100000 net annual income group. Net annual income of SHG farmers ranged between of ₹ 40000–50000 in most of the cases whereas the net annual income of non-SHG farmers ranged between ₹ 30000–40000. Other than SHG membership more than half of the SHG farmers (58%) had membership in other community organizations whereas only a few (28%) non-SHG farmers had membership in any

community based grass root organization.

### 3.2. Production and marketing pattern of SHG and non-SHG farmers

Farmers of both groups were mainly engaged with vegetable cultivation. In the SHG group, some of the small category farmers (48.3%) had been doing vegetable cultivation in leased lands because the owned land was not sufficient to do commercial vegetable cultivation for these farmers. It was also observed that farmers of *kudumbasree* SHGs were mostly doing group farming on leased lands that enabled them to share the land rent and also undertake all farming activities from land preparation to marketing as a group. However, the tendency of farming in leased lands found too less (7.2%) among the small category farmers of non-SHG. Less than half of both groups (43% of SHG and 33% of non-SHG) had farmland with irrigation potential throughout the year, and rest of the farmers were mainly seasonal vegetable growers. It was observed that both SHG and non-SHG farmers were cultivating more or less similar types of vegetable. But, more leased area under vegetable cultivation helped the SHG farmers to produce more marketable surplus (after meeting all the family needs) of about 50–60% more than that of non-SHG farmers.

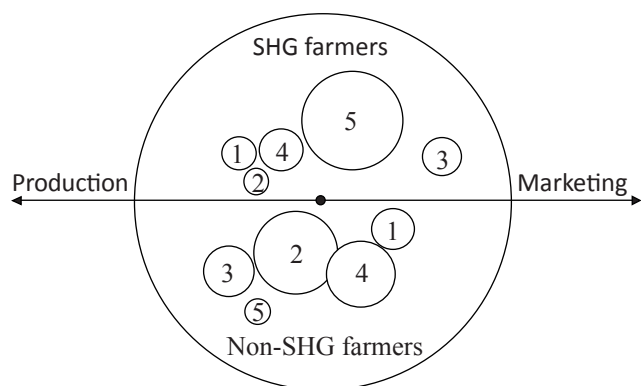
For the marketing of farm produce, both SHG and non-SHG farmers were depending on five types of marketing channels 1) direct selling to the consumers at the farm gate 2) commission agents 3) wholesale markets 4) retail shops and 5) farmers markets. However, frequency of use of those channels by the farmers was mainly based on factors like volume of the marketable surplus, proximity of the channel to the farm fields, and also the ease in accessing the channel. For these reasons, there were several dissimilarities between the SHG and non-SHG farmers in the use of the five marketing channels. The Venn diagram (Figure 1) shows the proximity and frequency of use of different marketing channels by the farmers of two groups. The size of the rounds describes the frequency of

use of the channel and the distance of the small circles from the centre of the main circle represents the proximity of the channel to the farmer.

The results show that SHG farmers were mostly depending on the farmers' markets to sell their farm produce whereas non-SHG farmers were primarily depending on the commission agents and retail shops to sell the farm produce. The farmers' markets where the SHG farmers sold their produce were under the supervision of the promoting agencies. The farmers' markets of *Kudumbasree* SHGs were mostly seasonal (August–September for *Onam* festival and April–May for *Vishu* festival) and retail in nature. But, they offered best prices to farmers because of the high demand of vegetables during the festival time. The farmers' markets of VFPC were permanent in nature providing the market place to the member farmers throughout the year. Further, they were of wholesale type and the selling price of different vegetables found to be around ₹ 1.50 to 2.00 more kg<sup>-1</sup> of vegetable than the nearby wholesale markets. This was mainly because of the grading of the produce at the VFPC sale centre after collecting from member farmers. Generally the officials of the promoting agency and farmers' representative had fixed the best possible price for all vegetables after bargaining with two or more traders.

Marketing is the last link in the production process chain but, only an efficient marketing system ensures reasonable return to the producers. One of the major thrust areas of market-led extension is to enable farmers in marketing the whole marketable surplus for a better price. In India the traditional marketing system for agricultural produce involves a substantial cost that reduces the farmer's margin in the consumer's rupee (Ojha et al., 1983). Mostly middlemen take away a lion share of the price paid by the consumer (Trebbin, 2014). Results of the present study is in agreement with these findings as most of the non-SHG farmers marketed their farm produce through commission agents and retail shops for a low price than the market price. There might be several reasons for this marketing pattern of non-SHG farmers. However, high marketing cost involved in transporting the farm produce to distant markets and perishable nature of vegetables might be the major factors motivated them to depend on the easily accessible marketing channels. The possible reduction in the value of the farm produces due to the damage while transporting also poses another risk to the small and marginal vegetable farmers.

Further, the middle men took the advantage of poverty of the farmers in most cases by fixing the price for the entire farm produce much before harvest and advance payment of the full amount. Since, they had been paid in advance farmers did not have any scope for bargaining even in cases where the production was more than expected while fixing the selling price. But, the situation turned to the other way round for farmers with similar livelihood status when they became a part of an active farmers' self help group. Through group



- 1) Direct selling to consumer 2) Commission agents
- 3) Wholesales 4) Retail shops 5) Farmers' Markets

Figure 1: Proximity and frequency of use of marketing channels by SHG and non-SHG farmers



marketing SHG farmers pooled different kinds of vegetables at one place that attracted more no. of traders to the farmers' markets compared to other wholesale markets. Pujara (2016) also mentioned the same as the advantage of farmers' groups and cooperatives. Ensured, safe, and quick transportation facility to the farmers' markets arranged mostly in an around 2–3 kilometers from their farm is the starting point of the successful marketing strategy. This is followed by selling of the vegetables in farmers' markets with better pricing opportunities; owing to collective bargaining power helped the farmers to have a control over the market prices. The reduction in transportation cost is another benefit leading to better income. The potential of farmers' markets to increase the producers' share in the consumer rupee is reported by Hughes et al. (2008) earlier and the improved farm economics of the SHG farmers who marketed their produce mainly through farmers' markets also proves the same.

### 3.3. Empowerment of SHG and non-SHG farmers

The results of percentage analysis carried out in order to assess the proportion of farmers cleared the criteria fixed (mean total score of  $\geq 75\%$  of the maximum attainable score) conveyed that about 62% of the SHG farmers belonged to the empowered category whereas only 2% of the non-SHG farmers could cross the fixed empowerment criteria. Mean scores of SHG and non-SHG farmers for the four empowerment dimensions (Table 1) showed that the SHG farmers got empowered mainly at three levels viz., social, personal and economic dimensions but not at technological dimension. Also, economic empowerment found

Table 1: Mean score and percentage score of the SHG and non-SHG farmers

Empowerment category	Maximum score	SHG (n=60)		Non-SHG (n=60)	
		mean score	% score	mean score	% score
Social	40	31	77	21	52
Personal	40	32	80	28	69
Technological	40	26	65	20	49
Economic	40	33	82	16	41
Total	160	122	76	84	53

to be in the first position (% score 82) followed by personal empowerment (% score 80). In the case of non-SHG farmers, the mean scores found below 75% of the maximum attainable score for the four empowerment dimensions as well as the total empowerment. However, among the four dimensions personal empowerment was found on the top position (% score 69) for non-SHG farmers. The nonparticipation of these farmers in farmers' SHGs might be the prime reason for their low empowerment since farmers with similar livelihood status from their society showed more empowerment being a part of different SHGs.

We used Mann-Whitney U test to compare the empowerment status of SHG and non-SHG farmers since the test is a non-parametric alternative to t-test to compare two population means that comes from the same population. The results (Table 2) confirmed that there were significant differences between them in the empowerment status (the  $p$  values are less than 0.05). Moreover, the higher mean ranks of SHG farmers in the social, personal, technological, and economic

Table 2: Comparison of the empowerment status of the SHG and non-SHG farmers

Empowerment dimensions	Mean rank		Mann-whitney U	Z	p
	SHG (n=60)	Non-SHG (n=60)			
Social	83.00	38.00	438.000	-7.160	<0.0001
Personal	79.00	41.90	684.000	-5.893	<0.0001
Technological	78.14	42.86	741.500	-5.579	<0.0001
Economic	86.57	34.43	236.000	-8.255	<0.0001
Total	86.57	34.43	236.000	-8.255	<0.0001

empowerment dimensions of empowerment compared to the non-SHG farmers indicate the edge of SHGs in empowering the rural farmers.

Though the results showed more empowerment for the SHG farmers than the non-SHG farmers it was essential to explore the contribution of each variable used for the study in the making up of total empowerment scores of SHG and non-SHG farmers. In order to accomplish this Friedman test was used and the test was performed separately for both groups. The results (Table 3) showed significant differences in the contribution pattern of the eight variables to build up the total empowerment scores of SHG and non-SHG farmers. For instance, social recognition (mean rank 6.18) and income generation (mean rank 5.67 occupied the first two positions in the case of SHG farmers whereas, social recognition (mean rank 6.57), and innovativeness (mean rank 6.02) owned the first two positions in the case of non-SHG farmers. It was also evident that both groups of farmers had insufficient knowledge about new agricultural technologies.

While analyzing the results of the empowerment of SHG and non-SHG farmers it is unambiguous that the SHGs could bring more empowerment to its member farmers in the social, personal and economic dimensions. Still, their technological empowerment is not promising. However, it is also evident in the results that though the SHG farmers were not empowered technologically their exposure to agriculture technologies are better compared to the non-SHG farmers. In fact, access to the new information always enables the group members to come out with the best decision (Gianatti and Carmody, 2007) and performance of SHGs also depends upon the managerial and technical skills of the members (Parida and



Table 3: Response pattern by the SHG and non-SHG farmers to the contribution of independent variables to empowerment

Variables	SHG		Non- SHG	
	Mean rank	Ranking	Mean rank	Ranking
Social participation	3.25	7	2.63	7
Social recognition	6.18	1	6.57	1
Innovativeness	5.00	4	6.02	2
Communication ability	4.33	6	5.42	4
Knowledge about new agriculture technologies	1.22	8	2.28	8
Market awareness	5.52	3	5.93	3
Income generation	5.67	2	2.81	6
Credit utilisation	4.84	5	4.37	5
Chi-Square	183.379		210.000	
df	7		7	
p value	<0.0001		<0.0001	

Sinha, 2010). So, if these farmers groups are trained with appropriate technical know-how that may motivate them to adopt those technologies suitable to their farmland and that help them to improve the farm economics. The improved financial security will definitely transform their risk taking ability in farming and marketing. Hence, the promoters of the SHGs need to emphasize on the skill development of farmers through relevant information and proper training regarding relevant farming technologies. Also, it is necessary to motivate other member farmers of the society to be a part of the group through organizing farmers' meets or agri-clinics in the village. These activities not only give opportunities to the non-member farmers to gain information about the innovative agricultural technologies but also interact with the information sources and clarify their queries regarding farming.

In the study, SHG farmers pointed out social recognition and income generation as the prime contributors of their empowerment and this reaffirms the research report of Kalra et al. (2013) that group participation and socio-economic benefits are mutually dependent. However, it should be also noted that not only SHG group (mostly consisted of empowered farmers) but the non-SHG group (only a few empowered farmers) also perceived social recognition as the chief contributor to make up their empowerment score. This is in agreement with the research report of Dobre (2013) that social recognition is a non-financial factor of motivation as it enables the person to perceive himself as a competent in the society he/she lives. Though social participation is another variable of equal importance in the social empowerment process both the SHG and non-SHG farmers perceived

it as a low contributor to the empowerment process. However, according to Reid (as cited by Laah, 2014) an active community participation is the key to building an empowered community. In fact, social interactions act as the vehicle for the transmission of cultural factors in any community (Reis et al., 2000) and social recognition mostly comes as the aftermath of these social interaction/participation. Hence, it could be argued here that the level of perceived social recognition by the farmers of the present study is definitely an indirect representation of their active participation in the society or social groups.

Further, the results explicitly say that communication ability played a significant role in making the empowerment score of non SHG farmers though they could not attain the empowerment criteria. In reality, farmers with no support of any agricultural agency or information sources needs to do everything themselves starting from planting till marketing. To gain necessary information as well as to have a good acceptability in the society they need to communicate more with other members of the society. Also, to get a reasonable price for their farm produce they need to bargain with the traders at their individual level. However, in case of SHG farmers, collective bargaining trivializes the importance of communication skill at individual level. This might be one of the reasons why non-SHG farmers perceived communication ability as important but not the SHG farmers. For an SHG farmer since he/she is a part of the group the group leaders and the officials of the promoting agency will take care of the matters regarding marketing aspects. So, here both the active and passive member may get more or less similar economic benefits. Earlier some researchers (Conroy, 2003; Lyon, 2003) pointed out that accessibility to affordable credit is a facilitating factor to make the empowerment of rural poor farmers possible. The credit utilization of the SHG and non-SHG farmers found to have less influence on their empowerment here. Because, lending of microcredit is an inherent feature of SHGs but, like the non-SHG farmer the SHG farmers also rated the credit utilization as a low contributor to their empowerment. Either, they didn't make use of the available credit appropriately or the SHG farmers' economic empowerment made them capable to meet the credit requirement of each crop season.

#### 4. Conclusion

Market-led extension activities through SHGs have great potential to improve the livelihood standards of Indian farmers as group activities bring more socio-personal and techno-economic empowerment. For that, bridging the broken linkages of technology dissemination system through the establishment of an effective network of various stakeholders (public/private) and a bottom-up approach in the policy decisions are essential. Further, all those grass root level organizations working effectively among the rural farming community should be identified and incorporated into the



system.

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