Extent of farmer participation in the farmer FIRST programme in Haryana, India

Manjeet and Joginder Singh Malik

Abstract
Farmer participation is critical to successful implementation of rural agricultural development programmes. This paper reports the results of a study in the farmer FIRST project in Haryana, in which, farmer participation was measured, and it was linked to various personal variable characteristics of the participants. Study was conducted in the Haryana state, in two Districts Hisar and Karnal selected purposely. From Hisar, Gurana was taken as adopted village and Datta as non-adopted village whereas from Karnal, Garhi Gujran was taken as adopted and Samora as a non-adopted village. Total 240 respondents were selected viz., 120 from each district, 60 farmers from each adopted villages and non-adopted villages were interviewed for the present study. The results showed that people’s participation was found maximum in resource analysis and planning stage followed by other stages of the programme.

Keywords: Farmer participation, agriculture, personal variable

Introduction
The low productivity of agriculture sector does not only affect the livelihood but it also influence the production capacity of natural resources base, accelerates environmental degradation and fails to address poverty and malnutrition (Ashley and Maxwell, 2011) [1]. In order to enhance the performance of agricultural sector, Government of India has introduced several programmes such as Community Development Programme, Intensive Agriculture Development (IADP) Programme, Intensive Agricultural District Programme HYV programme, Drought Prone Area programme, Desert Development Programme, Institute Village Linkage Programme, National Rural Livelihood programme were implemented to increase the food grain production and conservation of natural resources.

Participation is the most important issues in agricultural development programs. Participation is critical, in order to come up with successful and accepted programs since they facilitate the development plans. Participation mean the involvement of marginalized groups in development process, which intend to build peoples abilities to access and control of resources, benefits and opportunities towards self reliance and to better standard of living. Farmer’s participation plays a vital role in economic development and in poverty alleviation. The farmer FIRST programme as a concept of ICAR is developed as farmer in a centric role for research problem identification, prioritization and conduct of experiments and its management at farmers’ conditions. The focus is on Farmer’s Farm, Innovations, Resources, Science and Technology (FIRST). Two terms ‘enriching knowledge’ and ‘integrating technology’ qualify the meaning of Farmer FIRST in the Indian context. Enriching knowledge signifies the need of the research system as well as farmer to learn from each other in context to the existing farm environment, perception of each other and interactions with the sub-system established around. Technology integration is looked from the perspective that the scientific output coming out from the research institutions, many times does not fit as such in the farmer’s situations and thus, certain alterations and adaptations are required at field level for their acceptance, adoption and success.

Without participation there would be no program, no development. Lack of participation in decision-making to implement agricultural policies can lead to failure in agricultural development. According to Iqbal (2007) [9], most agricultural projects fail because when projects are designed, farmers or local ethics, culture and socio-economic characteristics are not
considered which lead to outside agents not being able to
depend recommend appropriate technologies that are
compatible with the target group. Douglah (1997) [5] also
added that poor adoption and failure of agricultural projects
are results of lack of participation of the target group in all
stages of the projects. He said that people are not given
chance to participate in all decisions that affects their lives
directly. Government officials and experts support the idea of
participation in principles but at ground level there is no
common agreement. While Wasihun et al., (2014) [22] studied
that farmers in Soddo-zuria Woreda in Southern Ethiopia
perceived their level of participation to be low, and had a
significant correlation with sex, educational status, wealth
status and frequency of contact with extension agents. Festo
(2003) [9] stated that the use of top- down approach is one of
the major factors causing failure of agricultural projects and
that approach builds on farmers’ experience instead of
promoting empowerment and building farmers capabilities.
Chhetri (2013) [41] found that people’s participation in decision
making, planning and evaluating policies plays a key and
supportive role in local governance leading to sustainable
rural development. The participatory approach helps to reduce
development cost, increase perceived and actual benefits and
increase awareness among the people and help in the
mobilization of local resources, facilitates smooth and easy
project implementation. Farshid (2011) [7] found in his study
that farmers’ participation in agricultural planning and
evaluation decision making was not fully considered.
Decisions making in agricultural policy were mostly done by
mainly government organizations. Thereafter, some attention
was given to farmers’ participation in project planning and
implementation. However, incentives for participation were
scarce. Various obstacles to participation exist as well as the
lack of capable organizations was an important element
contributing to limited farmers’ agricultural development.
Sangtam and Yaden (2017) [18] found that the failure of the
development strategies for the last few decades has been
widely attributed to the absence of people’s participation. In
fact, it has become a worldwide accepted notion for all the
development activities. Unless the common people of the
rural population are willing to participate to develop
themselves, the programmes of rural development cannot be
successful. As the rural development programme is for the
people, it should certainly be the programme of the people
and by the people. While Singhal and Singh (2016) [21]
reported that government is taking many steps for the rural
development, but still, there are many loopholes viz: financial,
political interferences, manpower and managerial
resources devoted to the implementation of rural development
programmes in this process. To the removal of these
drawbacks or problems will accelerate the process of rural
development in India. The farmer participation on the issue
has to go a long in shaping the agricultural development
strategies for the last few decades has been
widely attributed to the absence of farmers’ agricultural development.

Materials and Methods
Study was conducted in the Haryana state, in two Districts
Hisar and Karnal selected purposely. From Hisar, Gurana was
taken as adopted village and Datta as non-adopted village
whereas from Karnal, Garhi Gujran was taken as adopted and
Samora as a non-adopted village. Total 240 respondents were
selected viz., 120 from each district, 60 farmers from each
adopted villages and non-adopted villages were interviewed
for the present study. For exploring the extent of participation
only 120 beneficiaries farmers selected from the adopted
villages.

Haryana is one of the 29 states in India, located in northern
part of the country. It was carved out of the former state of
East Punjab on 1 November 1966 on linguistic as well as
on cultural basis. It is ranked 22nd in terms of area with less
than 1.4% (44,212 km² (17,070 sq mi)) of India’s land area.
Hisar is located at 29.09°N 75.43°E in western Haryana. It
has an average elevation of 215 m (705 ft) above mean sea
level. The region is part of the alluvial Ghaggar-Yamuna plain
and its southern and western portions mark a gradual
transition to the desert. Gurana is selected adopted village
because farmer FIRST programme implemented in this.
Garhi Gujran is a village situated in Karnal district with geographical
coordinate of the Gurana. Whereas, Datta is the
adjacent village of Gurana with same climatic and
geographical profile.

Karnal district lies on the western bank of the river Yamuna,
which forms its eastern boundary and separates Haryana from
Uttar Pradesh. Karnal District, including Panipat, lies between
29 09’ 50” and 29 50’ North and 76 31’ 15” and 77 12’ 45”
East; its height above sea level is around 240 meters. The
district has an area of 1,967 km². Garhi Gujran is a village
situated in Karnal district with geographical coordinates i.e.
latitude and longitude of Garhi Gujran is 29.704025 and
76.994237 respectively. Samora is the adjoining village
with same geographical area. From each adopted village 60
beneficiaries farmers were selected for the study in relation to
participation in programme.

Each of the selected respondents was interviewed personally.
Interview for data collection with the help of an interview
schedule was generally conducted at the farmers’ houses and
occasionally also at their farms when they were free to talk to
the researcher. The researcher had to make repeated visits to
the study area with a view to develop sufficient rapport with
the farmer.

The responses to each question were marked in the interview
schedule itself and then respondent-wise tabulation sheet was
prepared. Tables were prepared according to the objectives.
Following statistical tools were used to analyze the data.
Frequency and percentage and correlation coefficient Karl
Pearson’s Correlation Coefficient (r) was used in order to
know the nature of relationship between the dependent and
independent variables. The values of the correlation
coefficients were then tested for statistical significance. It was
calculated by employing the following formula suggested by
Snedecor and Cochran (1968) [20].

\[
\begin{align*}
        r &= \frac{\sum x_i y_i - \bar{x}_i \sum y_i}{\sqrt{\left(\sum x_i^2 - \bar{x}_i^2\right) \cdot \left(\sum y_i^2 - \bar{y}_i^2\right)}} \\
        \bar{x} &= \frac{\sum x_i}{n} \\
        \bar{y} &= \frac{\sum y_i}{n} \\
        \Sigma xy &= \text{sum of product of } X \text{ and } Y \\
    \end{align*}
\]

Where

- \( r \) = Correlation Coefficient between variables X and Y
- \( n \) = number of respondents
- \( \Sigma xy \) = sum of product of X and Y
X and Y = dependent and independent variables correlated.
\[ \sum x = \text{summation of overall dependent variables} \]
\[ \sum y = \text{summation of overall independent variables} \]
\[ \sum x^2 = \text{Sum of all squared values of dependent variables} \]
\[ \sum y^2 = \text{Sum of all squared values of independent variables} \]

Significance of observed correlation coefficient was tested by using
\[ t_{cal} = \frac{r}{\sqrt{N-2}} \]

If \( |t_{cal}| > t \) then observed correlation coefficient is significant to 5 per cent value of \( t \) for \( N-2 \) d.f.

Results and Discussion

Table 1 shows age distribution of farmers in the study area. 43.33% of farmers belong to middle age categories and only (21.67%) of farmers were found to be above 50 years of age. Often middle age group of the farmers are zealous and have more workability as well as efficiency than younger and older. Along with this, they have more family and social accountability. This might be an important reason for the noticed majority of farmers belong to the middle age category. The results are in agreement with the observation of Kharatmol (2006) [11], Rajanna et al., (2012) [15], Sathish et al., (2012) [17]. According to Table 1, 39.16% of respondents had medium level of education. Education makes human beings enable to empower along with it also helps in understanding the problem but also makes aware to find a solution to get rid of an undesirable situation. The similar findings were reported by Dhaka and Sharma (2002) [6]. Analysis of the data presented in Table 1 revealed that in majority of farmers had 49 and 38.33 percentage medium and low level of socio-economic status respectively. This was mainly due that beneficiaries were selected by projects staff from medium and low economic status as well as resource poor. Results are in line with the findings of Prasad et al., (2017) [18]. Majority of farmers were found to have canal and tube well as source of irrigation from FFP villages. This was probably due to well irrigation resources as well as good quality of underground water in the study area. The results are in conformity with the findings of Sani (2017) [10]. The results from Table 1 indicate that 46.67 and 41.67 per cent farmers had high to medium level of extension contact. The probable reason of above finding was due to frequently visit of project staff in adopted villages, interest of farmers in extension activities; this directly helped them to catch the information about latest innovation and technologies which helped them to keep in touch with extension experts, subject matter specialists, etc. This helps to improve their knowledge and adoption level about a particular technology. The similar results were obtained by Mali (2013) [13]. It is evident from the results that mass media exposure among the farmers was 57.50 and 25 percentage had medium to high respectively. Large majority (72.50%) of the respondents were found a high level of scientific orientation capabilities, economic motivation (65.84%) and risk orientation (64.16%). This might be due to the reason that be regular and occasionally listener, viewers and readers of the radio, T.V. and Newspaper, frequently training of farmers about scientific cultivation and exposure visit of farmers as well as a technology demonstration in adopted villages by project staff. Similar results were reported by Kharatmol (2006) [12], Binkadakatti (2008) [2] and Kumar (2013) [22].

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variable</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age</td>
<td>Young (up to 30 yrs.)</td>
<td>42 (35.00)</td>
<td>35.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Middle (31-50 yrs.)</td>
<td>52 (43.33)</td>
<td>43.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Old (above 50 yrs.)</td>
<td>26 (21.67)</td>
<td>21.67</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>Low (up to 3)</td>
<td>37 (30.83)</td>
<td>30.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (4-5)</td>
<td>47 (39.16)</td>
<td>39.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 5)</td>
<td>21 (17.50)</td>
<td>17.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 12)</td>
<td>15 (12.50)</td>
<td>12.50</td>
</tr>
<tr>
<td>3.</td>
<td>Socio-economic status (SES)</td>
<td>Low (up to 30)</td>
<td>46 (38.33)</td>
<td>38.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (31-37)</td>
<td>59 (49.17)</td>
<td>49.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 37)</td>
<td>15 (12.50)</td>
<td>12.50</td>
</tr>
<tr>
<td>4.</td>
<td>Source of irrigation</td>
<td>Canal</td>
<td>67 (55.83)</td>
<td>55.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tube well</td>
<td>36 (30.00)</td>
<td>30.00</td>
</tr>
<tr>
<td>5.</td>
<td>Extension contacts</td>
<td>Submersible pump</td>
<td>17 (14.17)</td>
<td>14.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low (up to 6)</td>
<td>14 (11.66)</td>
<td>11.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (7-10)</td>
<td>56 (46.67)</td>
<td>46.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 10)</td>
<td>50 (41.67)</td>
<td>41.67</td>
</tr>
<tr>
<td>6.</td>
<td>Mass media Exposure (MME)</td>
<td>Low (up to 7)</td>
<td>21 (17.50)</td>
<td>17.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (8-11)</td>
<td>69 (57.50)</td>
<td>57.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 11)</td>
<td>30 (25.00)</td>
<td>25.00</td>
</tr>
<tr>
<td>7.</td>
<td>Scientific orientation/ Scienticism</td>
<td>Low (up to 16)</td>
<td>13 (10.83)</td>
<td>10.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (16-18)</td>
<td>20 (16.67)</td>
<td>16.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 18)</td>
<td>87 (72.50)</td>
<td>72.50</td>
</tr>
<tr>
<td>8.</td>
<td>Economic motivation</td>
<td>Low (up to 23)</td>
<td>13 (10.83)</td>
<td>10.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (24-28)</td>
<td>28 (23.33)</td>
<td>23.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 28)</td>
<td>79 (65.84)</td>
<td>65.84</td>
</tr>
<tr>
<td>9.</td>
<td>Risk orientation</td>
<td>Low (up to 15)</td>
<td>12 (10.00)</td>
<td>10.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (16-18)</td>
<td>77 (64.16)</td>
<td>64.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 18)</td>
<td>31 (25.84)</td>
<td>25.84</td>
</tr>
</tbody>
</table>

Table 1: Personal characteristic of farmers N=120

The results showed from table 2 that people’s participation was found maximum (50.00%) in resource analysis. This implies that majority of respondents were more interested and had more knowledge about their natural resources existed in.
village. In the planning stage high and medium (30.84%) and (58.34) This implies that most farmers are aware of benefits that they can get by participating in agricultural projects such as capacity building, exposure to new techniques and empowerment which may help them increase their production. In the progress evaluation and reconsideration stage high (25.83%), medium (46.66%) level of participation. Whereas at the executive stage (13.33%) of high and (60.00%) medium level of participation the programme was found. The overall participation in the programme was medium (52.50%) and (30.00%) high level. The reason for low participation in executive stage may be due to the bureaucratic nature of the program. The results of the study get support from the findings of Samah and Fariborz (2009) (9), Bagdi and Kurothe, (2014) (10) and Jamilu et al., (2015) (10).

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Project stage</th>
<th>Category</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Planning stage</td>
<td>Low (up to 11)</td>
<td>19</td>
<td>15.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (12 to14)</td>
<td>70</td>
<td>58.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 14)</td>
<td>37</td>
<td>30.84</td>
</tr>
<tr>
<td>2.</td>
<td>Resource analysis</td>
<td>Low (up to 3)</td>
<td>15</td>
<td>12.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (4 to 5)</td>
<td>45</td>
<td>37.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 5)</td>
<td>60</td>
<td>50.00</td>
</tr>
<tr>
<td>3.</td>
<td>Executive stage</td>
<td>Low (up to 3)</td>
<td>32</td>
<td>26.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (4-5)</td>
<td>72</td>
<td>60.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 5)</td>
<td>16</td>
<td>13.33</td>
</tr>
<tr>
<td>4.</td>
<td>Progress evaluation and reconsideration stage</td>
<td>Low (up to 20)</td>
<td>27</td>
<td>22.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (21-30)</td>
<td>56</td>
<td>46.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 30)</td>
<td>31</td>
<td>25.83</td>
</tr>
<tr>
<td>5.</td>
<td>Overall</td>
<td>Low (up to 20)</td>
<td>21</td>
<td>17.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (21-30)</td>
<td>63</td>
<td>52.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (above 30)</td>
<td>36</td>
<td>30.00</td>
</tr>
</tbody>
</table>

Table 2: Extent of people’s participation at various stages of farmer FIRST programme in different categories n = 120

Table 3 shows that irrigation, mass media exposure, scienticism and risk orientation of farmers were not significantly correlated but showed positive relation with participation. Table further shows that education, socio-economic status (SES), extension contact, economic motivation and farming system had a positive and significant correlation with the participation with their respective ‘r’ values of 0.208, 0.189, 0.212, 0.186 and 0.183 respectively. But only age showed a negative and significant correlation. Similarly, the regression coefficient of variables education, extension contact, mass media exposure, economic motivation and risk orientation was found positively significant, whereas age, socio-economic status, irrigation source, scienticism and farming system were found negatively significant with participation in the programme. Generally, it is well-established fact that respondent that is having higher education, high socio-economic status, extension contacts, farming system and economic motivation has a high level of participation in the process of farmer FIRST programme. These findings are in conformity with the findings of Rajput et al. (2012).

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variables</th>
<th>Correlation coefficient (r)</th>
<th>Regression coefficients ‘t’ values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.192*</td>
<td>-0.126</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.208*</td>
<td>0.702</td>
</tr>
<tr>
<td>3.</td>
<td>Socio-economic status</td>
<td>0.189*</td>
<td>-0.089</td>
</tr>
<tr>
<td>4.</td>
<td>Irrigation source</td>
<td>-0.046 ns</td>
<td>-0.288</td>
</tr>
<tr>
<td>5.</td>
<td>Extension contact</td>
<td>0.212*</td>
<td>0.588</td>
</tr>
<tr>
<td>6.</td>
<td>Mass media exposure</td>
<td>0.088 ns</td>
<td>0.120</td>
</tr>
<tr>
<td>7.</td>
<td>Scienticism</td>
<td>0.103 ns</td>
<td>-0.051</td>
</tr>
<tr>
<td>8.</td>
<td>Economic motivation</td>
<td>0.186*</td>
<td>0.051</td>
</tr>
<tr>
<td>9.</td>
<td>Risk orientation</td>
<td>0.038 ns</td>
<td>0.017</td>
</tr>
<tr>
<td>10.</td>
<td>Farming system</td>
<td>0.183*</td>
<td>-0.126</td>
</tr>
</tbody>
</table>

*Significant at 5% level of significance.  
NS- non significant.  
R²= 0.1425

Conclusion and recommendation
To increase farmers’ participation in government agricultural programme is one way to measure the acceptable and workability of government policies in agriculture. This can be one reliable way of successfully implementation and managing the programme for achieving the ultimate goal of development in the farmer community. The policy maker body needs a drastic policy reformation in agriculture in order to change the current top down approaches to bottom up approaches in which maximum involvement of local stockholder can be achieved.

This will require a holistic policy package that will focus on issues related to the local need of farmers, political environments and socio-economic factors of farmers.

Based on findings of the research, the following recommendations were proposed
Government should as a matter of policy reclaim for marginal and small farmer create a policy that will increase resource poor farmers in the area. Farmers should be encouraged to form social groups, while government, communities; should collaboratively strengthen
and empowered theses groups for efficient implementation, monitoring and evaluation of the programme. Effective awareness campaign should be organised by concerned government agencies, media outfit and other organs of government to sensitize farmers on government agricultural programmes in the state.

Agricultural programme should be based on input supply based; this will increase the participation and adoption of new technology and practice to improve the crop production. Agricultural programmes in the region should be design with ideology of political neutrality. We suggest that, such programme should be self-sustaining and not hinge on the political framework of the ruling party. This will eliminate interference in selection and implementation.

As a way to encourage farmers’ participation in government agricultural programmes in the state, we suggest that agricultural extension services should be strengthen and appropriate attention given.

Government agricultural programme should be simple void of unnecessary drudgery and long administrative network. This will help to attain the desired goal of the programme.

References