METHODOLOGY

This study was planned to be conducted in six NEH states namely, Arunachal pradesh, Sikkim, Meghalaya, Manipur, Nagaland and Tripura. But due to insurgency in Nagaland and Tripura, the study was conducted only in four NEH states namely; Arunachal pradesh, Sikkim, Meghalaya and Manipur. There were two categories of the respondents; one who were selected from the ICAR project areas and the other who were selected from the non project areas. The number of respondents from the project and non project areas were equal i.e. 120. Therefore, the total number of respondents were 240 from four states (fig-2). The following table presents the total number of the respondents randomly selected from the project and non project areas.

Table 1: Distribution of respondents by their category and State:

<table>
<thead>
<tr>
<th>States</th>
<th>Categories</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project Area</td>
<td></td>
</tr>
<tr>
<td>Arunachal Prades</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Sikkim</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Manipur</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Non Project Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>240</td>
</tr>
</tbody>
</table>

In addition, 30 respondents of the KEK staff of various categories were also considered for constraint analysis and effective suggestions. The area of study is shown in the map (fig-1).
Instrumentation:

The instrument for this study was constructed in three parts. It was constructed with the help of the experts in this line. A list of variables was developed and mailed to 120 extension scientists throughout India with request to indicate dependent and independent variables for this study. Once the questionnaire were received back, the instrument was constructed considering the indicated independent and dependent variables. The Instrument was first developed in English language and then translated into local languages and finally printed in sufficient number. A sample of the instrument is appended in Appendix.

Pilot Study:

The instrument was pilot tested with the farmers around the Barapani campus. After the pilot study, required modifications were incorporated in the schedule. The purpose of the pilot study was to consider the required information in the study. The variables considered for the study and their measurement is discussed below as per the objectives.

Data Collection:

The data were collected from the project and non-project areas in order to see the significant impact of ICAR projects on both the
categories of the respondents. The equal number of respondent from each category were randomly selected from each state and face to face interview was conducted with the help of constructed instruments for this purpose. The data collection was conducted during the year 1995 in four states. Since the agro-climatic conditions of these states is almost similar, the findings will be seful for all NEH region states.

Variables and Measures:

To examine the adoption behavior of the farmers of NEH region in relation of their socio-ethnic, economic, cultural and educational characteristics profile.

Independent Variables:

Age: Age was operationalised as the completed years of a respondent and categorized the number of respondents in Table 2 by state. The age was categorized in three categories; 18-30, 31-50 and above 50 years. The descriptive statistics of the respondents' age in project area, non-project area as well as overall was computed and described.
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Education: It was operationalised as the number of years of formal education attained by a respondent. Five categories of education were made as; illiterate (no education), Primary (up to 5th), middle (6th-8th), high school (9th-10th), inter and above (12th and above). The data of education were presented in table 3 of the findings.

Occupation: Occupation is categorized in three groups; farming, farming with service and farming with business. The total respondents were accordingly categorized and presented in table 4. The descriptive statistics were used.

Caste: Caste is categorized in two groups; tribal and non-tribal. The total respondents were distributed in their respective caste groups and presented in table 5. The descriptive statistics was used.

Religion: This variable is categorized in two groups Hindu and Christian. The buddhists were also included in Hindu category. The total number of the respondents were categorized and presented in table 6. The descriptive statistics was used.
Farming Experience: It was operationalised as the number of years put in farming by a respondent. It is categorized in three categories, less than 5 year, 5-10 years, more than 10 years. The categorized data were presented in table 8 with descriptive statistics.

Size of Holding and Land Type: Farm size referred to the extent of land a respondent possess at the time of data collection. These variables were categorized in three categories. The size of holding was categorized as, less than 1 acre, 1-2.5 acre and more than 2.5 acres. The type of land is categorized as, rainfed, rainfed+jhuming and irrigated. The categorized data of these variables are presented in table 9 and 10 respectively with descriptive statistics.

Family Income: Annual income was operationalised as the net income of the respondent’s family for a year. Which includes from all sources. Actual income was presented in Indian currency i.e. Rupees (Rs.). The income was categorized in three categories, low (Rs. less than 9000, medium (Rs. 9000-15000) and high (Rs. more than 15000). The categorized data along with descriptive statistics are presented in table 11.

Farm Power: This variable was categorized in two categories,
Mass Media Exposure: This variable was categorized in three categories, low, medium and high. The respondents of project and non-project area along with the descriptive statistics are presented in table 16.

Risk Preference: A scale of Supe (1969) was used to measure the risk preference of the respondents of the project and non-project area. The data were pooled and categorized in three categories. The categorized data and descriptive statistics are presented in table 17.

Scientific Orientation: A scale of Supe (1969) was used to measure the scientific orientation of the respondents of the project and non-project area. The data were pooled and categorized in three categories. The categorized data and descriptive statistics are presented in table 18.

Attitude towards Hill Agriculture: A scale developed by Reddy and Reddy (1985) was used to measure this variable. The data are pooled and categorized in three categories as low, medium and high. The categorized data and descriptive statistics are presented in table 19.

Attitude towards Shifting cultivation: A scale was developed it was used to measure the attitudes towards shifting
cultivation. The pooled data are categorized in three categories as low, medium and high. The categorized data and descriptive statistics are presented in table 20.

2. To analyze the level of awareness, knowledge and adoption of the technologies advocated by the ICAR Research complex for NEH region among the farmers through the first line extension education.

Dependent Variables:

Awareness: To measure this variable, question related with hill agriculture were asked from the respondents of project and non-project area. The responses received were categorized and presented in the findings. The correlation and multiple regression are computed for this variable.

Adoption: To measure this variable, question related with hill agriculture were asked from the respondents of project and non-project area. The responses received were categorized and presented in the findings. The correlation and multiple regression are computed for this variable.
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Knowledge: To measure the knowledge of hill agriculture, 19 questions were asked from the respondents of project as well as from non-project area. The pooled responses are categorized and presented in findings. The correlation and multiple regression were computed for this variable.

To study the first line extension activities in detail including feedback mechanism.

In this objective, direct questions related with ICAR programmes were asked from the farmers which are already mentioned in the questionnaire. The responses are processed and analyzed. The result of the information is presented in the findings.

To identify the constraints in implementing the first line extension activities at scientists and farmers level and seek suggestions for improvement.

In order to get the responses of this objective, direct questions related with hill Agricultural technologies and ICAR programmes were asked from the farmers and KVK staff. The questions are already included in the questionnaire. The responses received were analyzed and presented in the findings.
Definitions:

Project Area: Project area is denoted as the area where ICAR projects are under operation.

Non-Project Area: Non-project area is denoted as the area where no ICAR project is under operation.

Abbreviations:

HQ: Head Quarter.

ICAR: Indian Council of Agricultural Research.

IPM: Integrated pest management.

KVVK: Krishi Vigyan Kendra.

NEH: North Eastern Hill.

NGO: Non Governmental organisation.

NPA: Non-project Area.

PA: Project Area.

SAU: State Agricultural University.

T&V: Training and visit.

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