INTRODUCTION
Several developmental programmes have been launched in India since independence to help and improve the farming community. An investigation to assess the behavioural changes among farmers and social systems caused due to the technological change would provide research-based data on where do we stand in development of farm families and their social systems. There has been tremendous development in technological innovations during the recent past. The technology has brought a number of benefits to the farmers such as maximization of opportunities, employment, net gains, social securities and status. The farm scientists have to create an awareness on the adoption of appropriate technology and its consequences. The benefits that flow from the adoption of technology are indeed many and varied.

The transfer of technology serves as a shortcut to secure the benefits of well planned research and development to the farmers. In the context of modernising the traditional sector the importance of the impact of adoption of technology is keenly felt. It helps to narrow down the gap between the technological requirements of development plans and the domestic stock of technology.

The pace of agricultural development in India has been rather impressive, with increase in yearly food
production from 56.8 million tons to 172 million tons during the last four decades. The agricultural development in the country has so far been made mostly in the irrigated areas, but the vast dryland/rainfed areas, which account for nearly 70 per cent of the net cultivated area, still remained underutilised. Rainfed farming is being practised in over 100 million hectares. The growth in production and productivity of important rainfed crops have been much slower than irrigated crops.

The word rainfed generally refers to agriculture which solely depend on rain water. In India, rainfed agriculture is practised in widely varying situations ranging from near arid to highly humid conditions. The extent of rainfed wetland area is relatively larger than rainfed dryland area (Table 1).

Table 1. Extent of rainfed area-India

<table>
<thead>
<tr>
<th>Class</th>
<th>Area (m²)</th>
<th>Percentage to total arable area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total arable area</td>
<td>143.8</td>
<td></td>
</tr>
<tr>
<td>Rainfed dryland area</td>
<td>34.5</td>
<td>24.0</td>
</tr>
<tr>
<td>Rainfed wetland area</td>
<td>65.5</td>
<td>45.5</td>
</tr>
<tr>
<td>Non-irrigated area</td>
<td>100.0</td>
<td>69.5</td>
</tr>
<tr>
<td>Irrigated area</td>
<td>43.8</td>
<td>30.5</td>
</tr>
</tbody>
</table>

The rainfed wetland area generally has conditions where rains are adequate and relatively well distributed during the crop season. On the other hand the rainfed drylands are generally those areas which receive low rainfall, erratic in nature and generally concentrated during the short period of the year. Even when the rainfall is excessive, the excess water goes as waste for want of ways and means to conserve the same. The unpredictable nature of rainfall, delayed on-set of rains, occurrence of long dry spells and early withdrawal of rains contribute to low production levels of crops in dry farming areas.

Due to the vast area under dryland farming, its importance can not be ignored. The dryland farming has caught the attention of policy makers and agricultural scientists, and ways and means to improve and stabilize the production in these areas are being thought of. Scientists have developed improved soil, water and crop management practices for the use of farmers in dryfarming. The adoption of this dryland technology was found to be useful in increasing agricultural productivity (Kampan 1979). It is reasoned that with increase in production, the farmers will have excess produce to sell, thus providing more income which will lead, subsequently to better living for the farmers. But there are some factors that come in the way of adoption of the dryland technology. The poor economic conditions and small size of holding are the major factors influencing the adoption of dryland technology (Patal et.al. 1989).
In practice, few farmers are using the technologies recommended by researchers and extension workers. Why this phenomenon occurs is the subject of a large body of literature. This present study will generally determine what factors, other than those already identified in previous researches are associated with the acceptance of selected farm practices recommended by the Research stations for dryland farming.

In agricultural extension programmes, the extension workers are engaged in activities of communicating the new ideas or improved technologies to farmers for their adoption.

According to Roling, et.al. (1976), the pro-innovation bias is a drawback of diffusion process which implies that all innovations are 'good' and should be adopted by every one.

Agricultural Research Stations often develop their recommendations about innovation with only a vague perception of the farmers for whom the recommendations are intended. Research Stations concentrates on developing innovations which benefit large and more educated farmers. The result is that farmers with a smaller resource base cannot apply the recommended innovations and research becomes inappropriate to their conditions.

Another false assumption of the diffusion model as observed by Ariffin (1975) is that the new
technologies and other essential resources to facilitate their acceptance are readily available to the farmers. This may be tried in developed countries where research and extension systems are well established. However in most developing countries where research and extension are also in a developing stage, such assumptions may not be true. Even if new agricultural technologies are made available through research, other resources needed, such as credit and supplies to make possible their acceptance, may not be readily available. Even if available, they may not be made available in time or farmers may not be able to afford them.

Evolution of dryland farming technology is as important as its diffusion among the farmers. The transfer of technology involves the generation, dissemination and accomplishment by three different systems namely a) agricultural research, b) agricultural extension and c) Clientele. These systems should function effectively. It is only in recent years that the research and development institutions have started realising the fact that without a continuous feedback relation, research will not be socially relevant and no development programme would lead to the desired socio-economic objectives. Commenting on the drawbacks of the diffusion model, Ariffin (1975) again states that the relevance of the new technology to the farmers situation (social, economic, psychological, etc.) is another factor which the diffusion model does not adequately consider. It assumes that all technologies developed by
research are relevant to the farmers' situation and are consistent with their needs. However, the technology is usually developed in isolation from the farmers and their environment, probably, no effort is being made in the first place to determine the farmers needs, problems and concerns before the technology is developed.

Studies conducted on diffusion of agricultural innovations in India usually focus on the farmers and their economic, social, and physical environment. Seldom, considered are such variables as the role of the change agents or their innovation itself as a possible explanation of why farmers accept or reject a new agricultural practice. There is sporacity of reported studies (Byrnes, 1966) in which scientists have tried to measure the state or extent of practice adopted in relation to the technical adequacy of the change agents or the technical appropriateness of the practice advocated. Perhaps social scientists have avoided such studies because of the attendant difficulties of measurement, or they may have assumed that satisfactory level of adequacy and appropriateness existed.

Agriculture is a risky business and particularly it is more so in dry farming. According to Binswanger et.al. (1979) risk aversion is associated with climatic variations, prices, cost factors, socio-cultural conditions and governmental famine prevention policies.
Because of high risk, the transfer of technology in rainfed areas is far more different than in irrigated or assured rainfed areas. This difficulty is compounded by the inadequacy of infrastructural facilities such as credit, inputs, storage, marketing and the weakness of extension agencies. The technology can be transferable only if it is low-cost, high-paying and properly suited to the physical and social environment. Veerabhadraiah and Rao (1991) stated that there are quite a few low-cost and no-cost technologies which farmers can easily adopt, since they do not involve risk unlike high-cost technologies.

1.1. OBJECTIVES

In dryland farming, it is felt that a large part of gains from new farm technologies still remain to be realised due to large number of constraints in areas such as environmental, physical, economical, social and cultural. It will be useful to answer the specific questions, such as why the dryland farmers accepted some of the dryland technologies? and why certain technologies were rejected by them?. With a view to know the adoption pattern and constraints in use of dryland technology, the present study was undertaken with the following objectives:

1. To study the adoption pattern of new dryland technology by the dryland farmers.

2. To study the attitude of the farmers towards new dryland technology.
3. To study the socio-cultural variables that influence adoption.
4. To study the psychological variables that influence adoption.
5. To study the constraints in adoption of dryland technology by the farmers.

1.2. SIGNIFICANCE OF THE STUDY

This study aims to select some appropriate psychological variables viz., a) attitude, b) achievement motivation c) risk taking behaviour d) scientific orientation e) alienation and f) level of aspiration of the farmers and to test for their influence of each of these variables on adoption of farmers practices. It was hoped that the study would yield valuable knowledge to help understand the dryland farmers' behaviour in terms of accepting or rejecting the new dryland technologies recommended by the Research Stations. It would also add to what is already known about the adoption behaviour of the dryland farmers in general. Knowledge gained from this study should be particularly useful to the development planners and extension personnel for a better understanding of the strengths and weaknesses of their change strategies.

1.3. LIMITATIONS

One of the major limitations of this study is its dependence on the respondents memory. He had to recall
data from his knowledge gained about new dryland technologies through different media. Essentially the respondent has to reflect back and reconstruct his past history and often his ability to recall is likely to be less than completely accurate.

The use of structured interview schedule provides further limitation to the study. Although it helps simplify analysis of the data, a structured interview schedule limits the depth of interview and this precludes important discriminating details from the materials to be analysed. There is a tendency for structured questions to have different meanings for different people and even for the same people over time.

Efforts were made to interview the respondents individually. But this was not always possible and the presence of other members of the family or neighbours or friends might have influenced the response. It is quite possible that some respondents might have tried to confirm to the group norms instead of giving their frank opinions, heretical or otherwise.

1.4. DEFINITIONS OF TERMS USED IN THIS STUDY

Achievement motivation:

It is referred to as the need for achievement. It is an important determinant of aspiration, effort and persistence when an individual expects that his performance will be evaluated in relation to some standard of excellence.
Adoption:
Continued full scale use of the practice.

Attitude:
The degree of positive or negative effect associated with some psychological objects.

Compatibility:
The degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters.

Diffusion:
The spread of a new idea from its source of invention or creation to its ultimate users or adopters.

Dryland farming:
It consists of making the best use of limited water supply by storing in the soil as much of the rainfall as is possible and by growing suitable crop plants by methods that makes the best use of this moisture.

Innovation:
Something new and novel in human knowledge and experience. It has a point of origin in place and time.

Observability:
It is the degree to which the results of an innovation are visible to others.
Risk taking behaviour:

The degree to which an individual is oriented towards encountering risk or uncertainty in adoption of any new practice.

Trialability:

It is the degree to which an innovation may be experimented with a limited basis.