SUMMARY & CONCLUSION
Raising of agriculture from traditional level to scientific level is difficult task in Indian setting. Transformation necessitates that farmers should be enthused and motivated to accept and work for the change. They need to be prepared mentally and emotionally to accept new ideas and practices. The consideration and factors which motivate the farmers to accept and adopt or to reject and not to adopt a particular recommended practice, cannot be codified categorically, because each farmer's reaction and norms of taking decisions are different. There are several factors and forces influencing the minds of farmers individually or in cumulative way in adopting a technology.

Only few farmers are adopting the technologies recommended by scientists and extension personnel. Because agriculture is a risky business and more so in dryland farming. Hence the transfer of technology in rainfed areas is far more difficult than in irrigated areas. In dryland farming it is felt that a large part of gains from new agricultural technologies still remain to be realised due to a large number of constraints. With a view to know the adoption pattern of dryland technologies by the farmers and constraints faced by them in adopting these technologies the present study was undertaken.
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 and

5. To study the constraints in the adoption of dryland technology by farmers.

5.1. METHODOLOGY

The study was conducted in Kamarajar and V.O. Chidambaranar districts of Tamil Nadu. Two blocks were selected from each district. Twenty villages were randomly selected from the selected four blocks at the rate of 5 villages from each block. Data were gathered through interview schedule from a random sample of 200 dryland farmers drawn from 20 villages. The data collection was done by the researcher himself during March-June 1991.

The data were analysed, transferred to master table and tables were prepared. Statistical procedures used to analyse the data included a descriptive analysis to find out nature of data, Chi-square test, 't' test, correlation analysis, multiple regression analysis and path
analysis to determine the direct and indirect effect of independent variables on the dependent variables viz. awareness, knowledge and adoption.

5.2. FINDINGS

5.2.1. Characteristics of dryland farmers

1) More than 50 per cent of the respondents were middle aged, and around 65 per cent were educated upto high school education.

2) About 70 per cent of the dryland farmers were solely depend on agriculture and more than 81 per cent were having more than 20 years of experience in agriculture.

3) Around 49 per cent of the respondents were having dryland upto 10 acres and 38 per cent were having 10 to 20 acres.

4) Regarding social participation, majority of them (49 per cent) were low level participants, followed by medium and high level participants.

5) Majority of the respondents have come under medium level with regard to contact with extension agency, mass media exposure, urban contact, annual income, farm power and material possession.

6) Around 48 per cent of the respondents have favourable attitude towards dryland agriculture, 27 per cent have more favourable attitude and only 25 per cent were having less favourable attitude towards dryland technology.
7) Regarding achievement motivation, 43 per cent were come under medium level and 31 per cent under low level achievement motivation.

8) Majority of the respondents have come under medium level of risk taking behaviour, scientific orientation, alienation and level of aspiration.

5.2.2. Socio-economic status association with Psychological variables

1) The attitude of the farmers towards dryland technology is directly associated with the socio-economic status of the farmers.

2) There is a significant relationship between socio-economic status of the respondents with their achievement motivation and risk taking behaviour.

3) The socio-economic status and level of scientific orientation are having significant relations.

4) As the socio-economic status of the respondent increases the feeling of alienation decreases.

5) As the socio-economic status increases the level of aspiration of the respondents also increases.

5.2.3. socio-economic status association with dependent variables

1) There was significant association between socio-economic status and awareness.
2) Socio-economic status and knowledge have significant positive relationship.

3) As the socio-economic status increases the adoption level of the dryland farmers also increases.

5.2.4. Psychological variables association with dependent variables

1) Favourable attitude towards dryland technology increases the awareness, knowledge and adoption level of the respondents.

2) As the level of achievement motivation increases the level of awareness, knowledge and adoption were also increases.

3) The risk taking behaviour of the farmers was positively and significantly associated with their awareness, knowledge and adoption level.

4) The level of scientific orientation of the farmers having direct significant association with their level of awareness, knowledge and adoption.

5) As the level of alienation of the respondents increases the level of awareness, knowledge and adoption of dryland technology decreases.

6) The level of aspiration of the farmers was having positive significant relationship with awareness, knowledge and adoption.
5.2.5. Psychological variables association with dependent variables by correlation analysis

1) The relationship between awareness and all the psychological variables except alienation was positive and statistically significant, whereas alienation has negative significant association with awareness.

2) The dependent variable knowledge and psychological variables except alienation were having positive significant association. The relationship between knowledge and alienation was negative.

3) All psychological variables except alienation were having positive significant relationship with adoption level of the farmers whereas alienation was negatively associated with adoption.

5.2.6. Psychological variables association with dependent variables by multiple regression analysis

1) Attitude, achievement motivation, risk taking behaviour, alienation and level of aspiration have contributed positively to the awareness level.

2) Scientific orientation have negative contribution to awareness level.

3) All the psychological variables were having positive significant contribution to knowledge level, whereas scientific orientation was having positive contribution to knowledge, but not significant.
4) Attitude, achievement motivation, risk taking behaviour, alienation and level of aspiration have contributed positive and significantly to the adoption level of dryland technology. Whereas scientific orientation was not having significant contribution to adoption level.

5.2.7. Direct and indirect effect of psychological variables on dependent variables.

1) Direct and indirect effect of psychological variables on awareness level were ranked as follows.
   - Level of aspiration
   - Achievement motivation
   - Alienation
   - Risk taking behaviour
   - Scientific orientation and
   - Attitude.

2) The psychological variables were placed in the order of rank based on direct and indirect effect on knowledge level as follows
   - Level of aspiration
   - Risk taking behaviour
   - Achievement motivation
   - Scientific orientation
   - Attitude and
   - Alienation

3) Based on direct and indirect effect of
psychological variables on adoption level the variables were ranked as follows.

- Level of aspiration
- Achievement motivation
- Scientific orientation
- Risk taking behaviour
- Alienation and
- Attitude.

4) The level of aspiration had more emphasis on awareness, knowledge and adoption level of dryland technologies followed by achievement motivation and risk taking behaviour.

5.2.8 Constraints in adoption

The various constraints viz., non-availability of institutional credit, complex procedure of loaning, high hire cost of disc plough, lack of knowledge of different dryland technologies, non-availability of specific implements and non-availability of inputs were mentioned by the farmers in order of importance for adoption of dryland technologies. Lack of skill, non-availability of inputs intime, failure of monsoon rain and long spell of drought were also mentioned as constraints in adoption of technologies.

1) Farmers those who followed summer ploughing with country plough expressed that the high hire cost of disc plough, non-availability at the time of requirement and
the economic position which does not permit the farmers to hire out disc plough during the season.

2) Lack of knowledge was the major constraint in adoption of ploughing across slope.

3) Farmers felt that it is difficult to form the broadbed and furrow system as per the recommendation due to non-availability of specific implement.

4) Non-adopters of pre-monsoon sowing felt that the dry sown seed may be spoiled due to insufficient rainfall and non-receipt of monsoon rainfall for a long time.

5) Lack of knowledge was the main constraint in adoption of seed hardening technique for cotton, millets and pulses.

6) The reason for non-adoption of Gorru showing being non-availability and lack of experience of using Gorru for sowing.

7) Lack of knowledge, skill, non-availability and ineffective were the constraints for adoption of pheromone trap.

5.3. CONCLUSIONS OF THE STUDY

The main conclusions reached are:

1) Half of the respondents were middle aged and three-fourth were educated more than primary education.
2) Majority of the respondents were solely depend on agriculture with more than 20 years experience in agriculture.

3) More than three-fourth of the respondents were small and marginal farmers and only one fourth was big farmers.

4) The respondents were having low level of social participation and medium level with regard to contact with extension agency, mass media exposure, urban contact, income, farm power and material possession.

5) Greater proportion of the respondents were having favourable attitude towards dryland technology.

6) Medium level of achievement motivation, risk taking behaviour, scientific orientation, alienation and level of aspiration was found among the respondents.

7) Socio-economic status and psychological characteristics of the respondents were having significant association with each other.

8) Socio-economic status and psychological characters of the respondents were significantly associated with dependent variables.

9) Correlation analysis proved that psychological variables, except alienation were having positive significant association with dependent variables.
whereas alienation was having significant negative association with dependent variables.

10) Multiple regression analysis clearly shows that all psychological variables have contributed positively to the dependent variables, whereas scientific orientation have negative contribution to awareness and non-significant positive contribution to knowledge and adoption.

11) Level of aspiration had more direct and indirect emphasis on awareness, knowledge, adoption level of dryland technologies followed by achievement motivation and risk taking behaviour.

12) Non-availability of institutional credit complex procedure of loaning, high hire cost of disc plough, lack of knowledge of different technologies, non-availability of specific implements and non-availability of inputs were various constraints in order of importance for adoption of dryland technologies.

5.4. IMPLICATIONS

The results of this study lead to certain implications. Some of the dryland technologies were neither suit to the local condition nor possible to adopt without suitable implements. Hence farmers participatory research is necessary to develop appropriate technologies for dryland farmers.
Some of the dryland technologies were not adopted by the farmers due to lack of knowledge about different technologies. It is better to work through groups in villages, instead of individuals. The contact farmers and progressive farmers may be given periodical training on new development in dryland agriculture.

Farmers' level of aspiration was found to be an important component in determining the adoption of dryland technologies. The extension activities have to be organised and conducted in such a way to increase the level of aspiration of the farmers, so that it may act as a self sustaining motivating factor for increasing the adoption level of dryland agricultural technologies.

Dryland agriculture is seasonal and uncertainty in production because of unpredictable monsoon rain. To overcome these factors, agro-horticultural system will be more helpful to the farmers of dryland. Alternate land use by planting with perennial crops would go a long way in the wake of annual crop failures due to drought.

5.5. FUTURE RESEARCH

1) This study was confirmed to two districts of Tamil Nadu. There is need to extend the research in other districts of Tamil Nadu, where more than 50 per cent of cultivable lands were come under dryland farming.
2) Identifying methods for effective transfer of dryland technology.

3) Training programmes aimed at the development of the major psychological characteristics required for adoption behaviour can be imparted to the farming community. For example

a) Development of achievement motivation
b) Development of creativity and problem solving
c) Assertive training
d) Personal growth programmes/individual development programme/self development programme.