

## SUMMARY

The agricultural sector in Egypt is suffering from the immigration of the agricultural trained workers to other economic sectors, therefore the agricultural mechanization has been considered the most suitable alternative to face the lacking of agricultural labour.

However inspite of using some of the agricultural machines in the Egyptian villages since more than 50 years, but a great number of the farmers have not yet used them.

For the researcher belaeife in the necessity of shortening the period between the avaiiability of agricultural mechanization technology and its adoption , therefore it was necessary to study the factors affecting the adoption of mechanization in some agricultural processes.

Accordingly, the objectives of the study were stated as follows:-

- 1) Studying the relation between the adoption of the mechanical ploughing, irrigation and threshing processes and the following factors :- age, educational status, profession, family type, family size, educational status of the family members, participation in organization exposure to general mass media, the cosmopoliteness, innovativeness, mechanization inclination, knowledge of agriculutral

tractors and machines, contact with change agents, fatalism, aspirations levels, opinion leadership, size of holdings type of holdings, farm livestock holdings, farm family employment, average costs of the three agricultural processes accomplishment, and average production of wheat and hourse bean crops.

2) Studying the differences between adopters and non adopters for mechanization in ploughing, irrigation and threshing according to the following factors :-

age, educational status, profession, family type, family size, educational status of the family members, participation in organization, exposure to general mass media, the cosmpolitness, innovativness, mechanization tendency knowledge of agricultural tractors and machines, contact with change agents, fatalism, aspiration levels, opinion leadership, size of holdings, type of holdings, farm livestock holdings, farm family employment, average costs of the three agricultural processes accomplishment and average production of wheat and hourse bean crops.

3) Studying of the most important difficulties facing the mechanizations of the three agricultural processes and the possible ways to overcome them from the farmer's point of view.

To achieve these objectives two theoretical hypotheses were determined and stated into two null hypotheses .

This study was conducted at 10 villages in Fayuom district at Fayuom Governorate, which were Kohafa , Sanofer, El Hamidia El Gidida, Menshate Feteih, El Alam, Nozlet Bashier, El Nassria, Demshkine, El Hadaka and Manshat Bagdad.

A controlled sample of 100 land holders (farmers) was selected from both adopters and non adopters of mechanized ploughing, irrigation and threshing processes, (10 adopters and 10 non adopters from each village were selected randomly).

Data were collected through personal interviews based on a priviously prepared questionnaire.

Befor putting the questionnaire in its final form it was pretested. Percentages were used in the presentations of the research sample in the difficulties facing the diffusion of the mechanization of the three agricultural processes mentioned above and in the suggestions of the farmers for facing these difficulties. chi-square, & Bi Serial correlation were used to recognize the relationship between the adoption of the mechanizations in the three agricultural processes and the independant factors under the study, while 'T' test was used to recognize the differences between adopters and non

adopters of mechanization in the three agricultural processes according to the factors under the study.

The following results were obtained :-

I. The results of testing the hypothesis

A) The results of testing the first hypothesis:

1- There is no significant relation at 0,05 level between the adoption for the mechanization of ploughing, irrigation and threshing processes and both of farmer's age and type of farm holding.

2- There is a positive significant relation of level of 0.05 between the adoption of mechanizing in the three processes mentioned above and Family Type.

3- There is a positive significant relation at level of 0.01 between the adoption of mechanizing in the three processes mentioned above and each of: educational status, Profession, educational status of the family members, degree of participation in organizations, degree of exposure to general mass media, degree of cosmopolitness, degree of innovativeness, degree of mechanization tendency, degree of knowledge of tractors and agricultural machines, frequent contact with changes agents, aspiration level, size of farm holding, farm animals stock, average production, and degree of opinion leadership.

4- There is a negative significant relation at 0,01 level between adopting mechanization in the three processes and the following factors.

Family size, degree of fatalism, agricultural working animals holding, size of agricultural family employment and average costs of accomplishment of the three agricultural processes.

B) The results of testing the second hypothesis were:-

1- There is no significant differences at 0.05 level between adopters and non adopters for the mechanization in ploughing, irrigation and threshing processes concerning both of farmer's age and type of farm holding.

2- There is a significant difference at 0.05 level between adopters and non adopters for the agricultural three processes mentioned above concerning the family type.

3- There is a significant differences at 0.01 level between adopters and non adopters for the agricultural processes concerning each of the following factors :-

Educational status, family size, profession, educational status of the family members, degree of participation in organization, degree of exposure to general mass media, degree of cosmopolitness, degree of Innovativeness, degree of mechanization tendency, degree of knowledge of tractors and agricultural machines, Frequent contact with the change agents, aspiration level, size of farm holding, farm animals stock, average production and degree of opinion leadership.

II. The most important difficulties of mechanizing the three agricultural processes and the suggested solutions for facing them according to the farmer's point of view were as follows :-

A. The reasons of not using the mechanization of the three agricultural processes in a descending order were :

Farmer's holding of primitive tools and farm animals, disadvantages of machines efficiency, high costs, family farm labour availability, small farm size, lack of machines in the co-operatives, unpaved ways through farms the existing of hinderances in farm roads and having various crops in the same area.

B. The reasons of non - possession agricultural machines arranged in descending order were as follows :  
Unavailability of funds, high costs of operation and conservation of machines, lack of experience in

utilizing machines, availability of renting machines, small size of farm and unavailability of technical labour and accessories.

C. The most important difficulties facing the diffusion of mechanization from the view points of the respondent's; it has been arranged in a descending order as follows: farmer's lack of money, small farm size, unpaved ways through farms and the predominance of rough and narrow farm roads, farmer's adherence to primitive tools, disadvantage of machine's efficiency, having variable crops in same area. Small farmers exploitation by drivers and machine's holders, high costs of utilizing machines, lack of experience and advantage in utilizing machines, the co-operatives get rid of tractors and machines by selling lack of machines for facing farmers needs, low prices of crops, companionship among farmers and availability of family labour, holders of machines dislike to serve small areas, availability of holding alternative primitive tools, work in villages were only in agriculture, using tractors in non-farm activities, lack of capital for buying machines, farmers adoption of planting methods related to their primitive tools and lack of technical labour and accessories.

III. The important suggestions of the respondents for facing the difficulties mentioned above were found to be as follows:-

Constructing mechanical service centers, raising prices of agricultural crops , applying suitable land consolidation measures , informing farmers about the advantages of mechanization, instalment mechanical services must be available, also tractors and machines must be available in co-operatives, tractors and machines must be increased to meet farmers needs, caring of agricultural roads and removing hinders from roads, minimise the mechanical service costs, encourage regeareat the holding system for tractors and machines by instalment, having a new opportunities for employment availability of technical laborers, accessories and conservative centers, constructing training centers, developing the primitive tools and Generalizing of tile drainage and longtudinal lines irrigation method.