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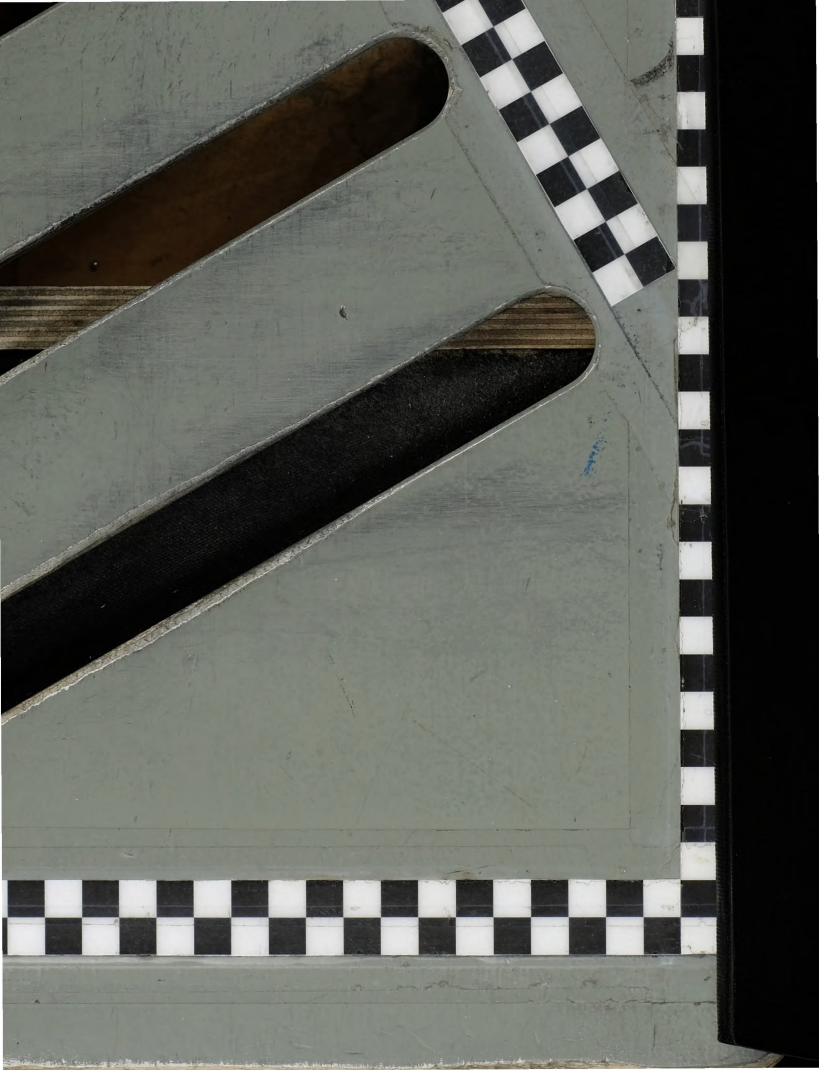
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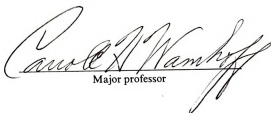
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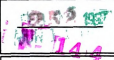
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**A COMPARATIVE STUDY OF THE EFFECTIVENESS OF AGRICULTURAL
EXTENSION WORK BY TWO AGENCIES IN THE ISLAMIC
REPUBLIC OF IRAN
(STATE OF KHORRASSAN)**

By

Hassan Aghel

A DISSERTATION

**Submitted to
Michigan State University
In partial fulfillment of the requirement
For the degree of**

DOCTOR OF PHILOSOPHY

Department of Agricultural & Extension Education

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**A COMPARATIVE STUDY OF THE EFFECTIVENESS OF AGRICULTURAL
EXTENSION WORK BY TWO AGENCIES IN THE ISLAMIC
REPUBLIC OF IRAN
(STATE OF KHORRASSAN)**

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Hassan Aghel

ABSTRACT

Agricultural extension in the Islamic Republic of Iran tend to suffer from problems of insufficient supervision and management, lack of coordinated linkages between extension agents, farmers, and researchers, and lack of communication and regular contact between extension agents and farmers.

This study compared the activities of agricultural extension workers of the Department of Agriculture in the Ministry of Agriculture (Extension Agents) and rural development workers in the Department of Jihad of the Ministry of Jihad (Rural Development Personnel). The comparison examined information regarding the organization and function of agricultural extension services in the state of Khorrassan in relation to the development of agricultural production and innovations in the State of Khorrassan in the Islamic Republic of Iran (I.R.I).

The purposes and approaches of the two organizations were dissimilar in teaching methods and clients served. Rural Development Personnel concentrated on small-holder farmers and dry land farming as a result of the Rural Development organization's philosophy and objectives. Extension Agents also concentrated on larger scale farmers and farmers dealing with vegetables and horticulture.

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Coordination of local level agencies, mobilizing extension specialists, strengthening the knowledge and skills of the extension agents and rural development personnel can be effective to strengthening extension programs in state of Khorrassan. Farmers were not satisfied with either organization and received their information from others. The extent of farmer interaction with extension agents and rural development personnel was, to a large degree, unsatisfactory.

Extension agents were divided between individual and group teaching methods. Rural development personnel gave high priority to group teaching methods. Mass media activities were the last choice for both agents. Linkages with agricultural research were minimal and too dependent on personal relationships between extensionists and researchers, rather than through the formal mechanisms used to coordinate the research and extension effort.

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HASSAN AGHEL

1991

Dedicated to cherish the loving memory of my
father, Shokrolah Aghel, to whom I stand
in debt for my education and Knowledge;
and whose last words light me to
the path of higher education.

ACKNOWLEDGEMENTS

In the name of Allah (God)

Most Gracious, Most Merciful

Knowledge is a thing that can and should soar. If knowledge does not soar and produce learning for others, it becomes insignificant. Transfer of knowledge promotes new birth, such as rain that has given growth to seeds. The question of how to give the rain in order to help the seed to grow remains with the will of All Mighty God: and God is always there who helps you, gives you direction and a straight path. This has happened in my education and in the preparation of this dissertation.

During my studies at Michigan State University, Dr. Frank Bobbitt, who directed my study at the beginning, and Dr. Carroll H. Wamhoff, who took the responsibility and directed this dissertation (due to the extended absence of Dr Bobbitt) provided inspiration throughout this project. I pay sincere gratitude to both of them.

I should gratefully mention Dr. Robert Wilkinson and Dr. Robert Hatfield who gave me encouragement and a positive attitude to finish. My thanks also to Dr. O. Donald Meaders who gave attention and guidance to the objectives of the study and proposal.

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I shall forever be grateful to my wife, Athena, and my children, Afsonah and Sabourah, for helping with typing and who sacrificed the time which I otherwise would have had for them. My special thanks go to the head of the College of Agriculture at the University of Mashhad, Mr. Abrahim Bazari, who really assisted in securing the facilities and personnel for the collection of the data through the state. I also give thanks to the management of the Extension Department, Rural Development Department, Personnel of the Agriculture Institute at the Shirvan, Rural Cooperative at Torbat, Ghahestan Sugar Factory management in Birjand, and Mr. Khajavey for their support and hospitality during the data collection.

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CHAPTER I

INTRODUCTION

Agricultural Extension has historically been perceived as a function of low status performed by poorly qualified and poorly equipped persons who deal with poor and frequently illiterate farmers in remote areas. This perception has been supported by facts: low salaries, unclear job descriptions, poor supervision of performance, and poor quality of work by Extension Personnel (World Bank 1985, p. 61)

The primary concern of this study was to compare the activities of agricultural extension workers of the Department of Agriculture in the Ministry of Agriculture (Extension Agents) and rural development workers in the Department of Jihad of the Ministry of Jihad (Rural Development Personnel). The comparison examined the development of agricultural production and innovations in the State of Khorassan in the Islamic Republic of Iran (I.R.I). According to Axinn:

The function of agricultural extension is to enhance learning among those who till the soil and tend the livestock of the world--learning those things they need to know in order to feed themselves and others (1988, p. 1).

In I.R.I at the time of the study, extension educators developed educational opportunities for those who could not attend educational centers on a regular basis. Extension workers preferred also to the transfer of knowledge and information

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from the research center or university to the general population for adoption. Extension was an educational organization for helping the people to help each other.

At the time of the study, there were two organizations involved in extension education in the Islamic Republic of Iran. It was difficult to determine which organization (i.e. Ministry of Agriculture or the Ministry of Jihad) was more responsible for the dissemination of agricultural innovations in the Islamic Republic of Iran (Kayhan International, 1987).

Issues concerning the field of agricultural extension in the Islamic Republic of Iran included:

- (1) Duplication of services and areas of responsibility in extension education between the Ministry of Agriculture and the Ministry of Jihad.
- (2) Did Extension Agents or Rural Development Personnel systematically provide a two-way flow of communication between the research station and the farm community?
- (3) Were the extension education programs of the Ministry of Agriculture and Rural Development Program of the Ministry of Jihad serving different client groups of farmers (i.e. tenant, small, or large farmers)?
- (4) Should extension program emphases such as

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distribution of supplies (e.g. new seeds, fertilizer, pesticides, seedlings, etc.) and publication of extension materials be continued or modified? What were the perceptions of farmers, Extension Agents and Rural Development Personnel toward these activities?

This study compared the performance of the Department of Agriculture in the Ministry of Agriculture with the Department of Jihad in the Ministry of Jihad in the State of Khorrassan, the Islamic Republic of Iran. The focus of the research was on how the two organizations performed their extension functions in terms of the following issues:

1. Comparison of extension approaches by the two agencies.
2. Comparison of the Jihad director's and Extension director's perceptions with respect to each agency's purposes and expectations.
3. Description and comparison of the two agencies' roles in expanding knowledge and adoption of improved farm practices among farmers.
4. Comparison of perceptions of effectiveness by farmers, Extension Agents, and Rural Development Personnel of the two agencies.

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Statement of the Problem

Due to the revolution in the Islamic Republic of Iran, the role of extension education and the organizations involved in extension education changed. Prior to the revolution, the Ministry of Agriculture was the major agency delivering extension services. After the revolution, the Ministry of Agriculture experienced significant problems in carrying out extension activities. The presence of Rural Development Personnel from another ministry (Ministry of Jihad Sazandaghi) in the same geographic areas caused an overlap of effort to serve farmers in terms of knowledge, support, resources, and credit.

The Ministry of Jihad started as a small volunteer organization with the objective of supporting rural areas in terms of agriculture and rural development. Jihad Sazandeghi was created initially by highly motivated, relatively inexperienced young men and women. Due to the demand and the great need for rural development, the Ministry of Jihad was organized from this modest beginning, and emerged in 1980.

In 1980, the two agencies began to provide extension work for rural development in the Islamic Republic of Iran, resulting in apparent duplication of services. This overlap led to competition, which reduced Extension Agents' credibility and limited their ability to disseminate appropriate innovations to the farm community. The overlap

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reduced the ability of the Ministry of Agriculture to assist in improving research and production linkages with farmers.

No reports have been written about the general performance of the two agencies. In 1987, there was a petition signed by over one hundred members of the House of Representatives to move the Department of Agricultural Extension in the Ministry of Agriculture to the Department of Rural Development in the Ministry of Jihad. However, this petition did not pass (Kayhan 1987, 12).

National oil revenues led to a lower level of importance placed on agriculture, making a comparative study of the performance of extension work by the two agencies a low priority. As a result, regions had little information about the problems and successes of agricultural extension and rural development activities. In the absence of such a comparative study, planners and policy makers continued to be uninformed regarding which extension strategies might be better suited to the State of Khorassan. The answers to the following questions were vital:

1. What were the selected personal characteristics of the survey population?
2. What were the perceptions of Extension Agents, Rural Development Personnel and the farmers regarding the appropriateness of the current activities of the two agricultural extension approaches?

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3. To what extent did each of the two agencies work with farmers, especially:
 - a) small- holder farmers?
 - b) large- holder farmers?
4. How did the Extension Agents and the Rural Development Personnel from the two agencies perceive the effectiveness of their extension work?
5. To what extent did each of the two agencies have linkages with the experiment station, input supply companies, or the universities for updating the skills and knowledge of the Extension Agents or rural development personnel?

Purpose and Objectives

The purpose of this study was to compare the activities of the extension service currently being offered by the Ministry of Agriculture and the extension service of the Ministry of Jihad in the State of Khorrassan during the ten years after the revolution in the Islamic Republic of Iran. Specifically, the objectives of this study were to:

1. Describe and compare the agricultural extension approaches of the two agencies (i.e. Department of Agriculture in the Ministry of Agriculture and the Department of Jihad in the Ministry of Jihad) in terms of:

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- a. organization and staffing.
 - b. provision of assistance to farmers.
 - c. preparation of extension workers (educational level and subject areas such as farm machinery, pest control, horticulture, crop and soil, etc.)
 - d. existing linkages with the research station, agricultural colleges, agricultural supplies and services such as the farm machinery organizations and cooperative agencies.
 - e. types of extension activities and/or teaching methods followed.
2. Compare the perceptions of the directors of Jihad and Extension with respect to their own and each others' agency purposes and expectations.
 3. Describe and compare the extent and the way in which the two agencies contribute to expanding the knowledge and adoption of improved farm practices among farmers.
 4. Compare the perceptions of the farmers, Extension Agents and Rural Development Personnel regarding their effectiveness of the extension service provided by the two agencies.

Need and Importance of the Study

Food production continues to be of major importance in

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most third world countries (particularly the poorer countries). Population growth remains as one of the main problems in the third world since population growth continually exceeds the growth of food production. Therefore, food imports in these developing countries have risen sharply. The food and agricultural situation in Sub-Saharan Africa and in Asia has deteriorated drastically. Average diets have fallen below minimum nutritional requirements. Food production has stagnated in the face of rapid growth in population. The number of hungry people in the developing countries has grown. Mellor (1988, p. 1) indicated that a half billion to one billion people in developing countries live in poverty so severe as to assault our ethical standards. He also indicated that:

We must recognize that an employment-oriented strategy of development led by agriculture has substantial risks for developing countries. It means that large portions of their population are brought into the development process, consuming more food. That of course, is highly desirable.
(p. 5)

The agricultural sector of Iran experienced low growth rates since the 1979 Revolution. This has happened despite remarkable increases in the use of inputs such as fertilizer and farm machinery, and despite the post revolutionary government's proclaimed emphasis on agricultural development and self sufficiency in food. The decline in agricultural growth rates in recent years has been mostly accompanied by low land productivity. The relatively low rainfalls

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experienced in many parts of the country in early the 1980's may partially account for the low yields in those years. The ongoing war and the uncertainty regarding the ownership status of many pieces of land after the Revolution also played a role in these low yields. (Mojtahed & Esfahani, World Development 1982, 839). While oil provided the bulk of revenue to the country, agriculture was the main source of income for the Iranian population. Iran had a population of nearly 50 million (1987 Census), and an area of 267,000 square miles (1,623,930 square kilometers). Rural incomes were still extremely low in absolute terms and were low relative to urban incomes, especially during and after the war between Iraq and Iran. Economic inequity between and within regions was, in many cases, also substantial. Unemployment existed everywhere, particularly in rural areas, especially after the cease-fire in 1368/1989.

During the war, The Islamic Republic of Iran was faced with the following problems:

- 1) A slow down in industrial and agricultural growth due to the cost of the war, estimated at 60 to 70 percent of the country's income (Amirahmadi 1990, 67).
- 2) An increased level of unemployment particularly in the rural areas.
- 3) A greater concentration of industrial activities in Tehran and other large cities, with consequent

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urban migration problems.

- 4) Low income in rural areas and a decrease of purchasing capacity due to high prices and unavailability of commodities.
- 5) Uneven income distribution between urban and rural areas.
- 6) Continued dependence on exports of unprocessed oil and minerals. (Kayhan Air Mail, October 4, 1989)

The Islamic Republic of Iran tried to solve these problems in several ways during the ten years after the revolution. Attempts were strongly being made to increase agricultural income through changes of technologies and introduction of new crops, intensification of cropping patterns through irrigation, improvements in the supply of financial and marketing services, and investment in the social infrastructure.

In addition to the above, during and after the eight year war the IRI tried to develop the industrial sector to serve the agricultural and rural areas first (Kayhan Air Mail, May 17, 1989). The value added to the agricultural sector was very small due to the expansion and capacity of the industrial sector during the war. In general, the expansion of the industrial sector in terms of value added aspects was quite impressive. Other performance measures, however, told an opposite story:

- 1) The proportion of manufacturing employment in the

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labor force remained at a small percentage of the labor force. This resulted in relatively low ability for the sector to create new employment.

- 2) A dualistic structure emerged in the country. On the one hand, there was an industrial sector and an urban area which enjoyed several types of incentives and privileges. On the other hand, there was a rural area with mostly small-scale farms with very low production, low quality, and poor income.
- 3) The industry and government offices were located in and around the capital, Tehran, and other large cities which created serious congestion, especially in Tehran.

In general, Iranian government officials were convinced that significant undertakings in rural development should be supported by efficient and effective agricultural extension services.

New information from this study would be useful to the policy makers of both ministries. The new information would include extension approaches, strengths weaknesses, the farmers' viewpoints, educational needs of the agents, the purpose of extension, and linkages with the universities and other agricultural related organizations. The findings from this study should aid in future planning and the execution of effective programs for extension activities for the

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Definition of Terms

The following definitions are utilized for terms used throughout this study. The definitions given here describe certain terms which were used in the discussion of agricultural education and agricultural extension in Iran. The defined terms will be helpful in understanding the information clearly and accurately.

Adopter: One who accepts a new idea or practice.

Adoption: The act of accepting an innovation.

Agricultural Education: A formal program of instruction of rural life and advancement of proficient farming practices.

Agricultural Extension: Organized activities for conveying (extending) technical information to farmers and others. The function of agricultural extension is to enhance learning among those who till the soil and tend the livestock, in order to feed themselves and others.

Communication: The act of generating and assigning meaning by a communicator and a receiver.

Diffusion: The process by which an innovation is communicated over time through channels among the members of a social system. This involves a sequence of events.

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Extension Agent: Personnel of the Agricultural Extension Department under the Ministry of Agriculture, with operational responsibility for providing useful and practical information to people, especially to farmers.

Rural Development Personnel: Personnel of the Rural Development Department in the Ministry of Jihad, with the operational responsibility for providing useful and practical information to rural areas and farmers.

Farmer: A person who owns and/or operates a unit of land on which he/she can plant crops like corn, sugar beets, etc.

Group: Two or more people who have special feelings of belonging together.

Input: Something that delivers and is used to achieve a purpose.

Linkage: A cluster of channels connecting one subsystem with others in a social system and/or the outside world, or permanent channels of communication and mechanisms for cooperation between the institutions.

Ministry of Agriculture: The ministry was established to solve the farmers' (education, credit, marketing, equipment for mechanization) and peoples' food needs in terms of import or export of food and

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agricultural related equipment.

Ministry of Jihad: The new ministry was established after the Islamic Revolution with the main purpose of rural development.

Norms: The rules or standards developed in group associations which define what is right and proper.

Organization: A stable social system organized for the attainment of a particular goal.

Ostan: The largest subdivision of area in Iran.

Perception: Personal inclinations to disregard some things, emphasize others, and interpret things one's own way.

Researcher: A scientist of the Institute of Agronomic Research, a university professor, a specialist in the research station.

Role: A behavior pattern that individuals may exhibit to help achieve some purpose, or may be expected to follow because of the positions they hold, such as being a researcher, an agricultural extension worker or a farmer.

Shahrestan: A subdivision of an Ostan; each shahrestan is divided into many counties.

Social System: A set of interrelated units that engage in joint problem solving to accomplish a common goal.

Village: An area in which less than 5,000 inhabitants live.

Sepah Tarvige: The Rural Development Peace Corps (Sepah

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Tarvige) which worked with the Extension Department before the revolution in 1979. Most of this group were graduates from general high school, led and supervised by college graduates from the agricultural colleges.

Rials: The currency used in The Islamic Republic of Iran.

Limitations of the Study

Though the scope and methodology gave wide coverage of the state of Khorrassan's agricultural system, the study had limitations. It covered essentially the perceptions of four population groups: organizational management personnel, field extension workers from the Ministry of Agriculture, Rural Development Personnel from the Ministry of Jihad, and the farmers.

The study focused on the comparative performance of extension work of the Department of Agriculture and the Department of Rural Development.

Other limitations of the study were:

1. It only applied to the State of Khorrassan.
2. There was variation in the number of subjects.
3. It relied upon personal interview interpretation and data collection variables.
4. Statements presented by the target clients were used in this study to describe the problem for the state of Khorrassan.

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5. The economic status of farmers were different.
6. The financial resources of both agencies varied.

Characteristics of Extension Education In the Islamic Republic of Iran

According to the 1987 census, between 50 percent and 60 percent of the Iranian population lived in rural areas. Most of them were involved in agricultural work or in agricultural related fields. Agricultural colleges and universities operated under the Ministry of Higher Education, and agricultural high schools operated under the Ministry of Agriculture and the Ministry of Education. The university prepares extension specialists and, the Agricultural high school prepares extension personnel. Extension personnel were usually high school graduates and college graduates with B.S. degrees from the college of agriculture who usually served as the supervisors or specialists in the areas. Zamanipour, 1981, indicated that:

In 1953, the present foundation and philosophy of extension work was introduced to Iran through the U.S. Point IV Program. This new program provided, for the first time, a means to extend the results for research conducted at the few existing experiment stations to the farmers in the villages (p. 23)

In terms of historical background of agricultural extension in Iran it is necessary to look at Iran after the Second World War. At that time the country was experiencing two threats: 1) the potential fear of external military aggression, and 2) the possibility of internal revolution

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growing out of subversion via a communist agrarian movement.

The U.S. wished to keep Iran in the western camp by increasing its political stability through economic aid. Since Iran was faced with a shortage of educated manpower, technical aid was provided in the form of experts, advisors, and foreign training. At that time, the majority of the Iranian people were living in the rural areas, so attention was given to rural development. Two rural programs were sponsored by the Americans. One was community development, which had been newly fashioned by American sociologists as a means of social reform. The other was agricultural extension, which was an old product of American land-grant colleges and served as a means for agricultural progress. Both were instituted in Iran. The important ideology and technology were seen as means to combat the threat of revolution and to improve the living conditions of the rural people. It was expected that the multi-disciplinary approach to comprehensive development at the grass roots level would improve the welfare and increase the productivity of the people in the villages, thereby conquering both poverty and disaffection in Iran. In connection with this policy, in January of 1949 President Harry S. Truman of the United States launched a new program for providing technical assistance to the underdeveloped countries (Zamanipour, 1981).

Iran was one of the first countries to receive the

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technical assistance under this new program. The Point IV Program, as it became known, soon established itself in every major city throughout Iran. The most significant part of the Point IV Program was agricultural extension which was indeed a unique program for Iran. The Iranian Extension Service dates from 1953 when the Point IV Program was instituted as a separate unit for extension within the Ministry of Agriculture. A team of American Extensionists arrived in Tehran in February of 1953 to begin the agricultural extension work (Zamanipour, 1981).

The Islamic government of Iran put agricultural extension and agricultural education as one of the priorities in the national development plans after the eight year war between Iraq and Iran ended in 1988. In the past, in spite of many attempts made by agricultural educators and the agricultural extensionists to improve food production, especially during the 1970s, no progress was made. Hakimian H. (1988) indicated that:

At the gates of the city, disposed of his land, deprived of his cultural identity and social framework, subjected to uncertainty and harassment for the whole of his life, he arrived, demoralized and exhausted, looking for streets paved with oil. And he was turned into a disguised beggar. This sums up the contribution of oil revenues to rural society in Iran. (pp. 218-227)

Iran shifted from a food sufficient country to a food deficient country. Many reasons, including improper and inadequate use of agricultural extension, may have caused

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this shift. The production of major crops dropped. Even though agricultural extension and agricultural education were fully financed and controlled by the government of Iran, the situation was not corrected. Another reason for the drop in food production was a growing dependency on oil revenues, which led to a greater dependency on imported agricultural products and less emphasis on agricultural production. The effect of agricultural extension and the responsibility of extension dropped to the lowest level of its time.

Effective linkages between and among the principal groups are critical elements in agricultural and rural development for Iran. Farmers must have access to a continuous supply of technology that fits their social, economic, political, cultural, religious, and physical environment if they are to increase and sustain their production. Researchers, on the other hand, must have continuous contact with producers so that they may be acquainted with their circumstances and needs. Extension agents, in this context, serve as a bridge between farmers and researchers or technology (Tchouamo, 1987).

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CHAPTER II

STUDY BACKGROUND

Location

Khorassan is the ninth state in the Islamic Republic of Iran; it is located in northeast Iran, south of the USSR, west of Afghanistan and northwest of Pakistan. Two mountain chains run from northwest to northeast (Hazarmasjed and Kapdagh) with the two highest peaks, Beenaloud and Aladagh, providing the main sources of underground water for agriculture.

Due to its geographical location, the Iranian climate is characterized as dry. Khorassan has a diverse climate because of the high elevation in the north and desert climate in the south.

Approximately 10.2 percent of the total land in Khorassan can be cultivated; 85 percent (26.6 million hectares) of the land is forest and pasture, and 4.8 percent (1.5 million hectares) is desert.

Extension Education Objectives

There were no formal, written documents available detailing objectives for agricultural extension organizations in Iran. The researcher conducted interviews

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and discussions with extension educators in Iran to develop an understanding of the objectives and mission.

Ministry of Agriculture

Discussions with the National Extension Organization Office in the Ministry of Agriculture in Tehran helped outline the following objectives for agricultural extension for that organization.

1. Develop educational linkages with the farmers in order to develop the agricultural sector and to contribute to rural society.
2. Introduce and recommend new agricultural crops and innovations to farmers for improvement of production and economic conditions of rural society.
3. Increase the efficiency of extension in reaching the farmers and disseminating the results of research work among them.
4. Encourage the implementation of soil conservation work in hilly and semi-hilly areas, the improvement of marginal land and the application of improved land use practices.
5. Improve farm crops by introduction, selection, and distribution of various

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types of varieties suited to the different agro-climatic zones. In particular, promote the expansion of crops which are strategically important such as grain and corn.

6. Pursue production optimums through planting and cultivation of high yielding crops, especially potatoes.
7. Further improvement of water use through the adoption of better irrigation practices and irrigation schedules, ensuring the maximum benefit from this scarce and very expensive resource.
8. Encourage timely and efficient protection of crop pests and diseases, either on an individual or on a collective basis.
9. Increase the credibility of the Extension Department and Extension Agents among the farmers.
10. Establish a system of agricultural education that can be adopted by the farmers in the rural areas, especially the small scale farmer.
11. Improve wheat production (tons per acre).

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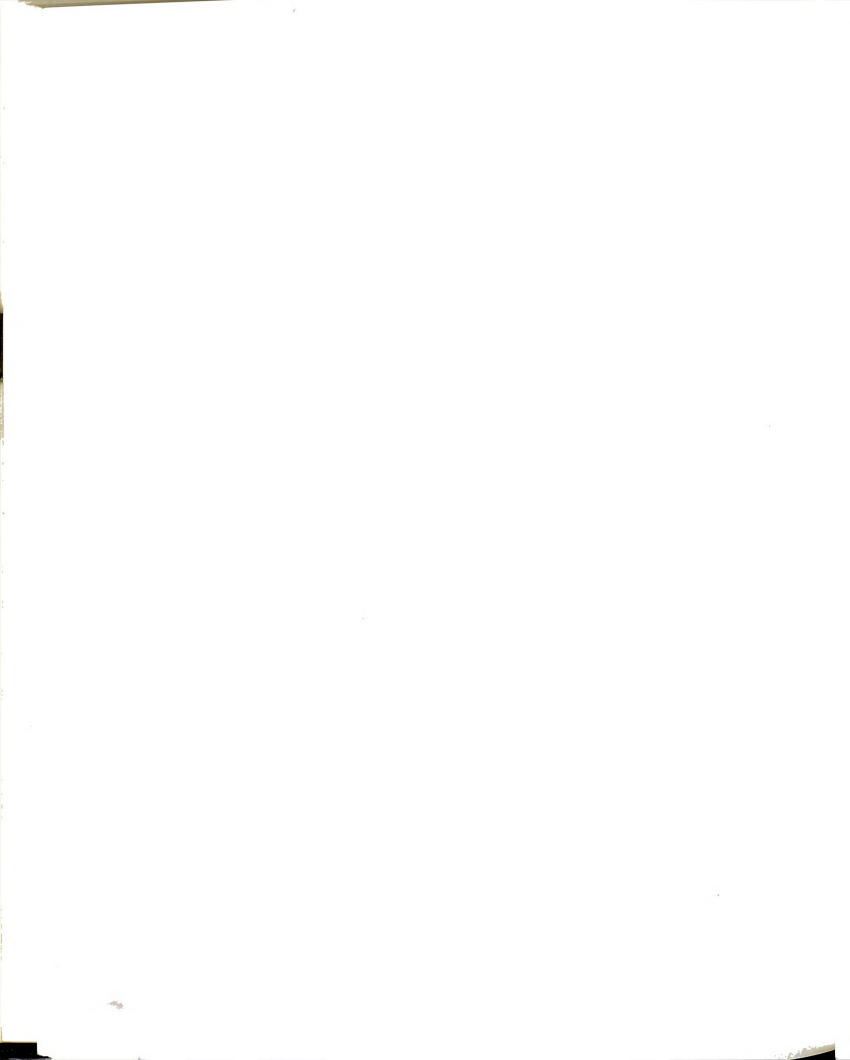
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Ministry of Jihad

The Ministry of Jihad had several sections which included both agricultural extension education and rural education. At the time of the study, agricultural extension education was considered part of rural education.

Consultation with the Director of Agriculture and Extension Education (Khorassan) revealed a continuing discussion on separating the agricultural extension education section from the rural education section. There was no written document available about the actual policies of extension education. In discussion with the Director of Agriculture in Jihad, a mission was described for the Department which included the following statements:

1. Reduce migration from the rural areas to the urban areas.
2. Develop educational linkages with farmers in terms of development of the agricultural sector.
3. Introduce new ways of cooperative work by combining the small section land holder with the larger section land holder for better farming operations and mechanization.
4. Introduce and recommend new agricultural crops and innovations to farmers for improved economic conditions of rural



society.

5. Increase the efficiency of extension in reaching the farmers and disseminating the results of research work among them.
6. Encourage the implementation of soil conservation works in hilly and semi-hilly areas.
7. Improve dry land and forage crops by introduction, selection and distribution of types of varieties suited to the different agro-climatic zones in the state.
8. Improve water supply and channels by adoption of paved channels and pipeline irrigation practices and schedules.
9. Improve timely and efficient protection of crop pest and disease, especially in forage crops.
10. Improve water resources by preparing the small dam in watershed to save the winter run off.
11. Improve linkage of research and education with the actual needs of the farmers.
12. Improve forage production.

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The Director of Extension Role

The State Extension Director is the leader of extension in the state and is responsible for the state extension program. The duties also include administration of extension funds and the approval of all publications. The position is not as important as it should be. Because of the dramatic change in the department, several state directors changed jobs which resulted in a lack of efficient management.

District Directors (Sharestan Extension Chief Administrators)

The State is divided into seventeen sharestans (districts) for the purpose of supervision. In each sharestan, the agriculture district director is responsible for the coordination of the work of all district supervisor directors in terms of extension, crops and pesticides.

The Structure of Khorrassan Agriculture

Traditionally, agriculture has been the major sector in the economy of the state of Khorrassan. According to a census done in 1361/ 1983, the area of agricultural land was 2,781,000 hectares, almost 18.5 percent of the total production land in Iran. Of these 2,781,000 hectares, about 1,905,000 hectares were under cultivation. Due to water availability, 744,000 hectares or (39.1 percent) were irrigated land and 1,161,000 hectares or 60.9 percent were

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dry land farming. The uncultivated agricultural land was used mostly as rotation land (Akbar Abdul Hossein Zadeh, 1365/1987, 24).

Crop Production

Crop production constituted the major sub-sector of agriculture as shown in Table 1. A great variety of crops were grown in the state; the main varieties were wheat, barley, sugar beets, fruit trees (especially apple, pears and peaches), cotton, potatoes, grapes, tomatoes, melons, onion, and saffron. The data in Table 1 shows the average yields of major crops achieved in the period of 1361-1362 (1983-1984).

Intensive cropping was generally associated with the availability of water for irrigation. The major non-irrigated crops were wheat, barley, and cereals. Irrigated cropping generally involved intensive use of land, labor, capital, and water, the application of mechanization and technology and management. On the other hand, dry land farming was characterized by low productivity, extensive use of land and labor, and wide fluctuations in production from year to year depending on the prevailing weather conditions and the rainfall in particular.

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*Table 1. Total Irrigated and Non-Irrigated Crops Area with Average Yields in the State of Khorrassan 1361-62 (1983)

Crop	Area/Production Irrigated /in (Hectares)/tons	Area/Production Dry land/in (Hectares)/ton
Grains (Wheat, Barley, Rice)	633,670/1,194,526	667,870 /277,228
Cereal	9,436/ 10,990	20,895 / 9,798
Industrial Crops (Sugar Beet, Cotton, Oil Seed)	122,922/2,157,221	4,214 / 730
Vegetables	106,200/1,593,410	84,117 /476,642
Potato & Onion	16,172/ 259,978	00,000 /000,000
Forage Crops	48,496/ 465,382	600 / 1,694
Fruit trees & Forests	86,368/ 467,582	18,137 / 27,100
Other Crop Production	17,962/ 3,353	3,220 / 769

* First Extension Bulletin of Khorrassan Agricultural
Extension Department (1366)1989

Geography and Climate

Khorrassan, the largest state in the Islamic Republic of Iran is located in the eastern part of Iran between 30", 21' to 38", 17' north and 55", 28' to 51", 14' east of Greenwich (see APPENDIX B for map). It has an area of 352,500 square kilometers; average length north to south is 750 kilometers and its average width (east to west) is 470 kilometers. The area of the state is 31.3 million hectares, 1/5 of the total of Iran (Khorrassan First Extension Bulletin, 1989).

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Soil and Land

Almost 9.2 million hectares (29 percent) are classified as good agricultural land, 4 million hectares (13 percent) are classified as average and 58 percent are classified as poor agricultural land. Uncultivated land accounts for 3.2 million hectares (10.2 percent). Almost 26.6 million hectares (85 percent are forests, pastures and mountains, and 1.5 million hectares (4.8%) are desert and sand.

Organization and Staffing of the Two Agricultural Extension Departments in the State of Khorrassan (IRI)

Extension Department

To carry out the activities of extension in the state of Khorrassan, the Department of Agriculture's central headquarters consisted of a section of specialists (agronomy and seed production, soil, horticulture, plant protection, forestry, rural cooperative, veterinary, extension, program planning, mechanization, animal husbandry), and seventeen sharestan (District) offices.

All State Extension Directors and chief administrators were directly responsible to the State Agriculture Director. Their main job was to provide technical and scientific support to the field extension staff for the implementation of the agricultural extension program. Specialists and directors were expected to link between research and extension, but in reality there was little

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linkage. Each section in the central extension had a team of people including specialists in crops, animal production, pest control, fertilizer, forage, etc.

The Sharestan Extension Chief Administrator represented the Department of Extension Education at the sharestan level along administrative boundaries and had the overall responsibility for all field extension activities. His main function was to accommodate the department's field extension service in the area of their responsibility and maintain close contact with the farming population, providing training, guidance and advice to them on a day to day basis.

The staff of each sharestan (District) agricultural office consisted of subject matter specialists and extension agents. The Directors or chief administrators of the extension office of the sharestan was also a specialist, usually in extension or another agriculturally related area. Because of strong beet production in the state, agricultural beet officers carried out special project work with the help of sugar beet factories. The subject matter specialists were not actually under the management of the Extension Directors, but they operated under their own specialist department. The subject matter specialists received technical support from the specialist sections at headquarters in Mashhad, the capital of the state. The subject matter specialists and supporting technicians operated on a district wide basis, and sometimes they also

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acted in a liaison capacity between the front line extension and the specialist section at the headquarters.

Extension specialists and the chief administrator of the Extension Department in the sharestan devoted most of their time to extension, covering the coordination of planning and implementing the national extension programs and the activities of the extension personnel posted at the district level. The major extension activities for the year of 1988-89 were increasing irrigated wheat production by adopting new varieties of seeds, the use of fertilizer, practicing land preparation and practicing weed control by use of herbicides. The headquarters section was also actively involved in the preparation of Extension bulletins and radio and television programs about the production of wheat.

It must be pointed out, however, that despite the new movement in the Extension Department, the coordination of planning and the implementation of the national extension programs in the sharestans were left to the agricultural directors who carried the main responsibility for implementing the extension program and were responsible to the Director of the State.

Extension Personnel in the State of Khorassan

Extension Department

The Department of Extension in 1988 was staffed by 94

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Extension Agents and 36 specialists. Their distribution, according to the list that was provided to the researcher, is presented in Table 2. The data in Table 2 shows 16 of the Extension Specialists (43.2 percent) and 17 of the Extension Agents (18 %) were working in the central office.

Table 2. Deployment of Staff of the Department of Agricultural Extension in 1988 in the State of Khorrassan

Location	Professional		Extension Agents	
	Male	Female	Male	Female
1. Asfraean	1	-	4	-
2. Birjand	2	-	14	-
3. Bojnord	2	-	7	-
4. Dargaz	1	-	7	-
5. Ferdos	1	-	5	-
6. Kashmar	1	-	5	-
7. Konabad	1	-	2	-
8. Mashhad	16	1	17	-
9. Nishaboor	1	-	5	-
10. Ghenat	1	-	4	-
11. Guchan	1	-	4	-
12. Sabzevar	2	-	7	-
13. Shirvan	1	-	2	-
14. Tabas	1	-	2	-
15. Torbat Haydariyh	1	-	3	-
16. Torbat Jam	2	-	6	-
17. Tyyebat		-	-	-
Total	36	1	94	-

Rural Development Department

The Rural Development Department in Jihad contained several sub-departments, such as Construction of Rural Areas, Education, Rural Education, Health, Handcrafts, Animal and Fisheries, Irrigation & Water. Agricultural Rural Extension in Jihad contained 74 Extension Agents and

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11 specialists. Data in Table 3 shows the distribution of agents and specialists on the state. It should be mentioned that all of the directors and district directors in the sharestan were also specialists.

Table 3. Deployment of Staff of the Department of Rural Development in 1988 in the State of Khorrassan

Location	Professional		Extension Agents	
	Male	Female	Male	Female
1. Asfraean	0	-	5	-
2. Birjand	0	-	5	-
3. Bojnord	1	-	9	-
4. Dargaz	2	-	1	-
5. Ferdos	0	-	4	-
6. Kashmar	0	-	4	-
7. Konabad	0	-	7	-
8. Mashhad	2	-	14	-
9. Nishaboore	1	-	4	-
10. Ghaenat	1	-	2	-
11. Guchan	1	-	4	-
12. Sabzevar	0	-	2	-
13. Shirvan	1	-	3	-
14. Tabas	0	-	2	-
15. Torbat Haydariyeh	0	-	7	-
16. Torbat Jam	1	-	0	-
17. Tytebat	1	-	1	-
Total	11	-	74	-

The number of staff varied from sharestan to sharestan (district to district) depending on the nature of agriculture and the number of farmers, the development of the district in terms of social and environment, the intensity of production, etc.

The program objectives were highly influenced by agricultural policy under government control from the

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capital. Extension program planning was centrally done and the state had little effect in the planning.

Virtually all administrative staff, subject matter specialists, and agricultural sharestan directors (chief administrators) in the Extension Department held university degrees in extension or agriculturally related areas, while most of the agricultural Extension Agents had high school diplomas in agriculture or had attended training courses in major areas of management, pesticides, beekeeping, crops, fertilizers, and other agriculturally related areas during the year of 1988-89.

Constraints of Extension Work

The high ratio of farmers per field extension worker and the increased demand for extension advice imposed a great strain on the limited number of field extension agents as the farmers adopted new information or techniques. A study conducted in one part of Iran by Dr. Hoshang Irvany (1364/1986) showed the number of extension agents per farm household in the area of Baloochestan was 1/372 to 1/4,336. The average for the area was 1/2356. (1986, p. 106)

Financial Resources and Salary Level of Extension and Rural Development Department

A common concern was that the salary of the Extension Agents and Rural Development Personnel was too low to attract and hold well trained, competent individuals. Budget

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allocations for the Department of Extension were made in both the regular (ordinary) cost of operation and program budget. The salaries in the Department of Extension for extension agents ranged from 35,000 rials to 76,700 rials (\$ = 75 rials). The salaries for professional staff (specialists and directors) ranged from 47,000 rials to 84,600 rials. The salaries in the Rural Development Department for Rural Development Personnel ranged from 45,000 rials to 69,500 rials. The salaries for professional staff (specialists and directors) ranged from 64,000 to 110,000 rials. It should be mentioned that there was opportunity for extra income for the Extension Agents in the form of overtime. This sometimes reached an additional one-half of his/her salary per month. Thus, the income of Extension Agents could have been as much as 50 percent higher than that of Rural Development Personnel Personnel.

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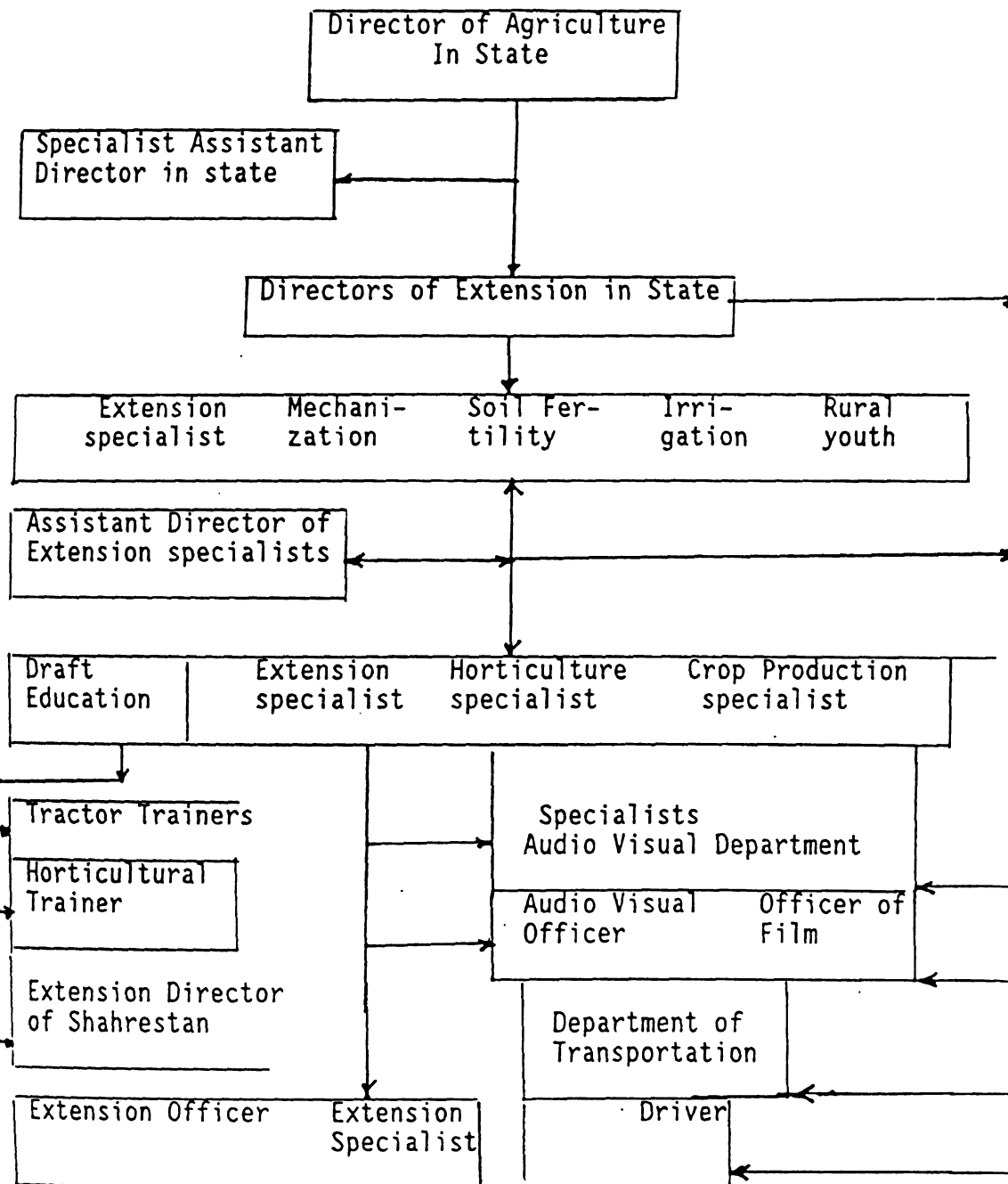
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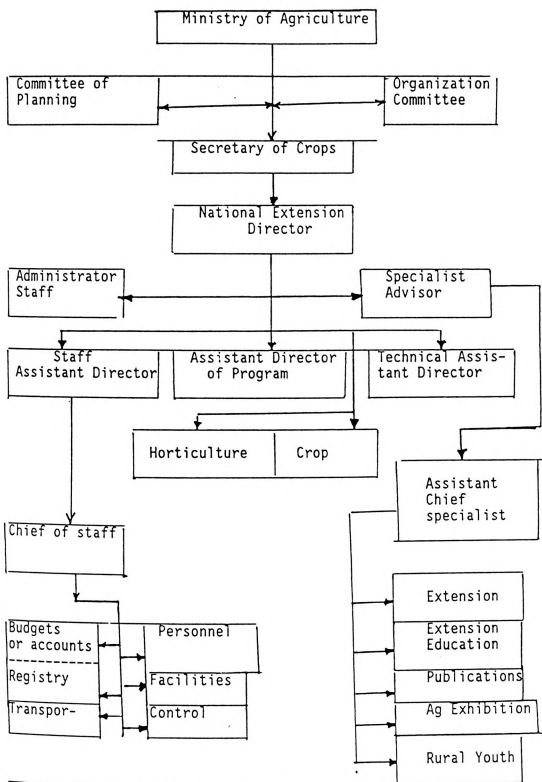
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Fig-1 Organization Chart of the Extension Department



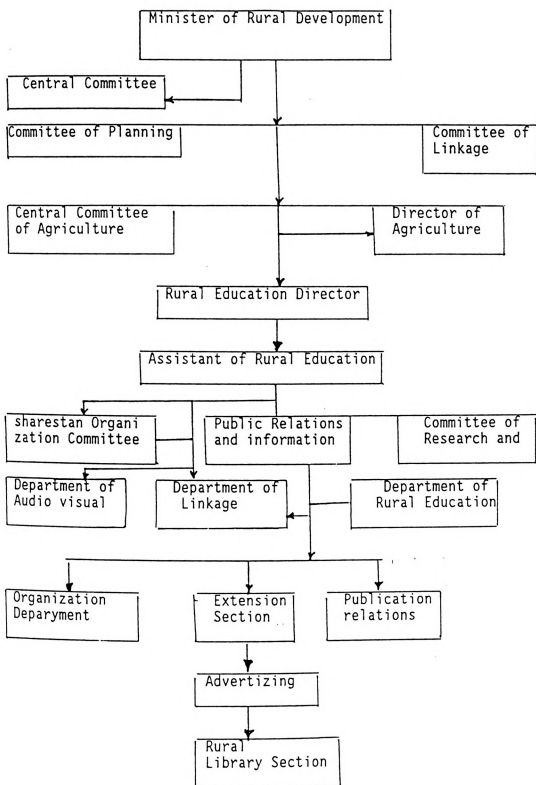
* From the actual chart that was available in the extension department

Fig-2 Organization Chart in National Level of Extension



* Maleck Mohammady, Iran 1983 P. 272 (Principle of Extension)

Fig-3 National Organizational Chart of Rural Development



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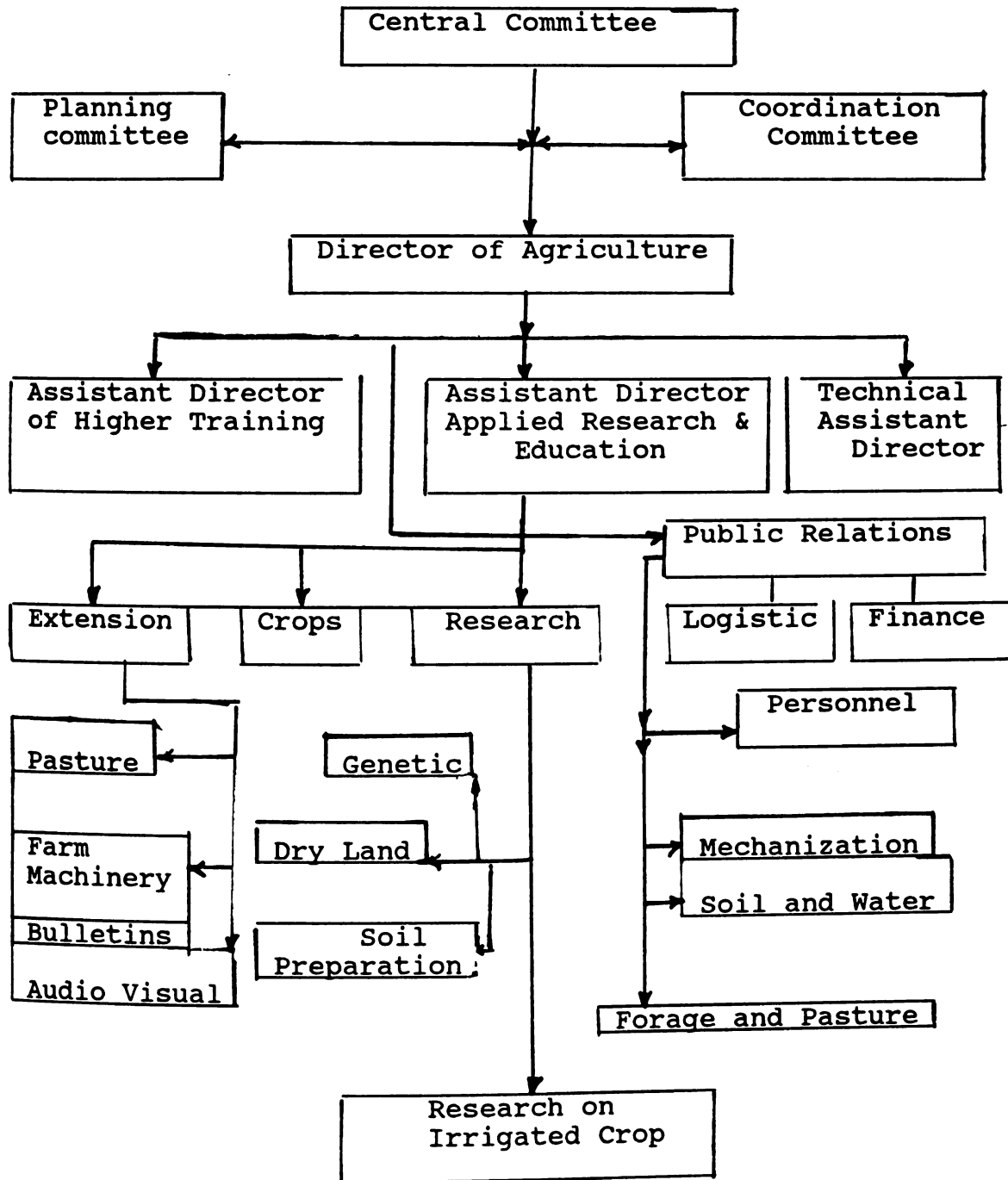
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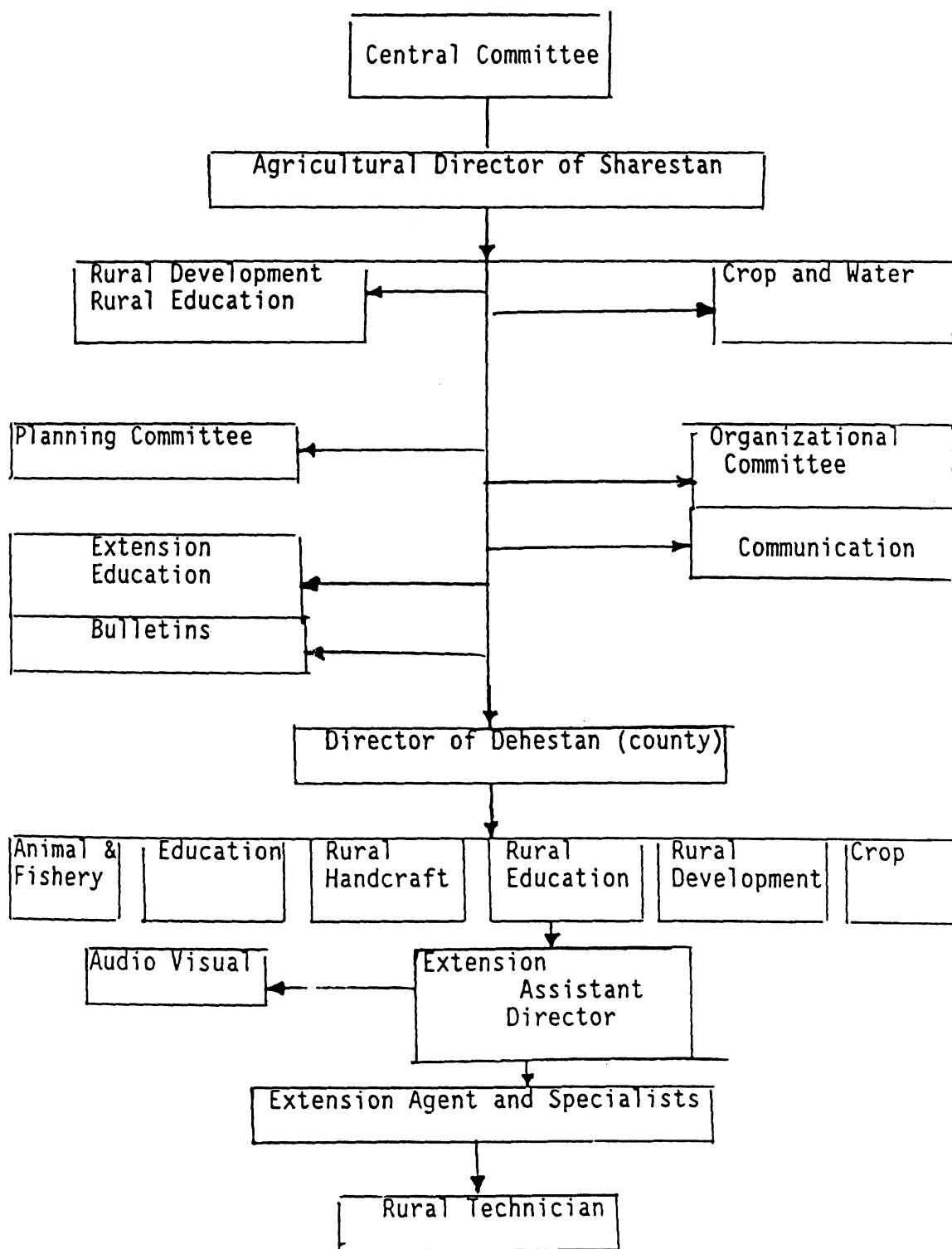
**Fig-4 Rural Development Organization in Ostan (State)
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Fig-5 Jihad Agricultural Organization in Sharestan (District)



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CHAPTER III

REVIEW OF THE LITERATURE

This chapter contains a synthesis of selected research and literature that is applicable to the study. The theoretical foundation for this study emerged from the literature and research in agricultural extension education and adult education. In addition, information concerning previous studies was obtained by reviewing Dissertation Abstract International, the Current Index of Journals in Agricultural and Extension Education, the Education Index, Agricultural Extension Education Seminar/Conference proceedings, and Education Resources Information Center (ERIC) documents.

The literature review is presented in the following sections:

1. Theoretical and conceptual framework for understanding the perception of extension and rural development.
2. Theories and concepts of social systems.
3. Philosophy and objectives of agricultural extension.
4. Historical background of extension education and the Iran extension system.
5. Adoption and diffusion of agricultural innovations.
6. Training and teaching methods of agricultural

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7. Communication and linkages of extension and rural development service.

Theoretical and Conceptual Framework

The theoretical framework of this study built upon the perceptions of Extension Agents and Rural Development Personnel as well as farmers. The primary objectives of agricultural extension work have been the dissemination of innovations to increase productivity through new methods of cultivation and mechanization, through the introduction of varieties of crops, fertilizer applications, method of irrigation, pesticide application, etc. The goal has been to move from the traditional type of farming, characterized by small volume land and trade (limited purchase of products outside the agricultural sector), to a new type of agriculture with strong links to the economy as a whole.

With the introduction of this extension system into the Islamic Republic of Iran (IRI) during the last ten years, there was much disagreement among the organizations in terms of how and who should be supported.

It is very important to understand how extension has been perceived by farmers. Decision-makers need to understand how other researchers perceive the process of adopting and diffusing innovations. Rivera, Seepersad and Pletsch (1988, p. 5) indicated that the usefulness of comparing agricultural extension systems has at least the

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following four criteria: (a) the academic value of such comparisons, (b) their value in administrative decision making, (c) their relevance to policy makers, and (d) their ultimate benefit for farmers and the rural community. Ban and Hawkins (1988) also stated that:

Interpret perception as the process by which we receive information or stimuli from our environment and transform its psychological awareness. Extension Agents cannot be expected to understand the complex psychology of human perceptions, but they should appreciate why people interpret their surroundings differently, and how these different perceptions influence their communication behavior. (p. 62)

In general, people behave differently because they have grown up in different environments, received different types of education and have come from different economic and social backgrounds. When a person looks at his/her own hand, he/she can easily see that the ten fingers are not identical. There is a reason behind this; different fingers have different levels of responsibilities, based on their support and position, to accomplish their overall role. From this simple example, it is easily understood that people play different roles in different environments with different cultures and beliefs. Achievement requires comparison; if everything is the same, the comparison of good or bad cannot be explored. Researchers believe wrong exists in order for right to be perceived. Ban and Hawkins (1988) further identified general principles of perception as a process of five elements:

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1. People's perception is relative rather than

absolute:

It is true that we may not be able to judge the exact weight or surface area of an object. We may be able to tell whether it is heavier or lighter, or larger or smaller than another similar object.... Perception of message will also be influenced by its surroundings. A circle surrounded by larger circles will look smaller than a circle of the same size which is surrounded by smaller circles. (p. 61)

Similarly, extension activities are perceived by farmers differently based on their level of socio-economic status in the society.

2. People's perception is selective:

Our senses may, at any time, receive a veritable flood of stimuli from the environment around us. Hence an individual pays attention only to a selection of these stimuli. Several physical and psychological factors influence what he or she selects. Past experience also influences our selectivity as a way of providing an organized and structured set of experiences to influence our perceptions. (p. 61)

3. People's perceptions are organized:

We tend to structure our sensory experiences in ways which make sense to us. We try to convert the blooming, buzzing, and confusion into some meaningful order. One form of organization is into figure and ground. In a fraction of seconds our senses sort out visual and oral stimuli into figures which stand out from a background. Our interpretation of "figure" will often be determined by "ground". (P. 61)

Hence, a picture of a man with a dirty face and hands standing in old clothes can be interpreted one way; yet when a farmyard is added to the background the picture could be interpreted in another way that the man is a hard-working

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4. People perceive what they want or are set to perceive:

We perceive what we expect to perceive. Our mental expectations influence what we select and how we organize and interpret it. Expectation is an important perceptual concept that can be used by the person designing the communication to reduce the number of alternative interpretation given to stimulus. For example, the extension bulletin writer who states with a brief summary of his article will 'set' the reader to seek the key points in it. (p. 61)

5. Because of cognitive domain people's perceptions differ:

One's individual perceptions will differ markedly from another's in the same situation because of different cognitive styles. Our individual styles, our individual mental processes work in distinctly different ways depending on personality factors such as our tolerance for ambiguity, degree of open-and closed-mindedness, and authoritarianism. (p. 61)

Extension Education and Community Development

There have been many arguments between the researchers and educators about the description of extension and rural development. Extension in 1989 referred to more than agricultural extension. It was now a broad based concept which was also applicable to other sectors.

In the Islamic Republic of Iran (IRI), and in most of the developing countries, people often perceive extension as rural development. Rural development was related to the adoption of improved technologies by the farmers. The

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extension agents has a constant role to transfer those technologies to the final users in the rural areas through educational activities. In general, the higher standard of living of the rural community depends on agricultural development. DiFranco (1966, p.5) endorsed the differences between extension and community development. He said that throughout the world, in recent years, two distinct approaches to rural development have emerged: extension and community development. People everywhere were taking sides and promoting one over the other. They claimed that one was better than the other, depending on the one with which they were more familiar. This argument was disturbing to those in rural education; too much energy might be drained away from the real job of helping people to help themselves. Perhaps it is time to look at the two approaches to make a realistic comparison.

There have been differences about the priorities for rural development and their definitions between the educator and officials in extension and in rural development. On the other hand, there are similarities and dissimilarities between the two organizations in the view of researchers and educators. To the researcher, Khorassan agricultural extension education and rural development have some distinct differences, especially in their objectives and philosophy. It is difficult to ascertain these differences easily.

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Similarities and Dissimilarities

The Iranian extension services and Rural Development organization were created for the purpose of improving agricultural and community development through economic and social progress. In general, both organizations were educational; they organized activities based on the needs of rural people and used technical and research information on agriculture in an effort to help people help themselves.

DiFranco 1966 (p. 19) indicated extension was perceived as an educational organization which dealt solely with agriculture and placed the emphasis on the individual for improving rural conditions for all people. Rural development was perceived as having multiple responsibilities for rural people in the rural areas. Extension Agents placed more emphasis on production and paid attention to the larger farmers. On the other hand Rural Development Personnel placed emphasis on the economic and social aspects of the community with broad integrated programs for the poor and small farmers.

According to DiFranco (1966 19-20) Analyzing the differences and similarities between the principles of extension education and rural development was a hard task. The major and obvious similarity was that both approaches were interdisciplinary in nature. In both approaches the basic effort was educational, bringing desired change to the people.

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In accordance with the description, rural development strategies emphasized agricultural extension, community development, and credit programs. Extension research generally involved comparisons of alternate communication forms with which to extend the message, e.g., individual and group meetings, demonstrations, radio, and so on. The community development programs used village level generalists to stimulate self-help projects and to facilitate the provision of social services according to the felt needs of local people.

Theories and Concepts of Social Systems

A system is an organized and complex whole. System models play a major role in today's social activity. Social scientists increasingly tend to use a system model in theorizing about the relationship of one section or part to other sections and to the function of the whole. Many scientists today believe that the systems approach will help them understand the organization as a subsystem. For example, a systems approach can be used to examine how agricultural extension in Iran functions as a subsystem of the total agricultural system. Hicks (1972, p. 46) defined system as a set of interrelated, interdependent, and interactive elements. This definition describes the complexity of the whole system and all the relationships within it. Parsons (1964) pointed out that:

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System is the concept that refers both to a complex of interdependencies between parts, component, and processes that involve discernable regularities of relationships, and to a similar type of interdependency between such a complex and its surrounding environment. (p. 177)

Loomis and Beegle (1957) described the social systems

on two different levels.

In the first place, 'social system may be considered a concrete or cooperative social structure such as a farm cooperative, an extension service, an agricultural research organization and agricultural training center..... these organizations are composed of persons who interact more with members than with nonmembers when operating to attain their objectives.

second place, 'Social systems may be viewed as a more abstract unit, or one in which patterns of relationships prevail from generation to generation and from region to region. Viewed in this way, social systems consisting of elements or patterns that persist do not require that specific persons be considered as parts of the system.(p.4)

Social Change

There are several kind of changes, one of which is social change. Zaltman & Duncan 1977 indicated that:

The most difficult conceptual issue in studying change is to adequately define social change. This definitional problem becomes apparent when we attempt to differentiate between change and non-change. Many things, perhaps all things, are always in some state of fluctuation; thus in some absolute sense " things are always changing." certainly when talking about human behavior one can make the case that most behavior fluctuates. (p. 6)

Usually when people want to adopt new things or new ideas, they change their behavior. Behavior depends on the

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vision of each individual and his or her experiences in society. According to Loomis and Beegle (1958):

What is conceived as a social change depends upon the observation point (more correctly called the point of reference), and the scope of ones vision. This may be illustrated by differences in conception of what is going on when a fire fighting crew deploys to get a large and fast moving forest fire under control. The view of the superintendent directing the fight from a helicopter is different from that of the individual fighter working on the ground near the fire. (p. 30)

Social changes are viewed differently. Development has different meanings for each view. In the past Marx saw social changes much differently than did the capitalist nations. In the Islamic point of view, social changes are different from both of these doctrines. Some societies are rich in their social behavior but illiterate in their technological development or vice versa.

Illiteracy has several meanings such as reading or writing, skills, social, moral, agriculture, etc). For example, the objective of a mechanic is to possess skills which are needed to fix or repair the tractor. There is a possibility that the good mechanic has skills to repair the machinery without having the skills to read or write. He obtained these skills over a period of time with continuous involvement with the machinery and tools needed for repair. This is a very common situation in developing and third world nations. Farmers may have the skill needed to raise crops, yet they may lack the ability to read and write. In

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general, the objectives of farming is to increase production. This can be achieved over a period of time. However the farmer cannot visualize the content of the soil nutrient, the effects of irrigation and/or the germination of the seeds. It is very difficult for farmers to conceptualize all of the necessary activities which are required to raise crops over a short period of time as the mechanic can do. Farming is a process which has taken years of experience to perfect. For a farmer, the time needed to reach higher production can be reduced if he or she has the ability to read and write, as well as the skills needed to operate the farm machinery.

Changes take place over time, especially in the farming community, because farmers may be illiterate in reading and lack the ability to understand information in newsletters, magazines, bulletins, and books. In addition they may lack the skills needed to apply the new methods of planting and operating the tractor. The slow rate of change may be the result of the fear of the farmers to adopt new innovations; they prefer to follow the old ways which produced anticipated and proven results.

Farmers may have positive feelings toward the Extension Agents or Rural Development Personnel, but these feeling may change negatively or positively during different interactions. Lippitt (1973) defined change as:

any planned or unplanned alteration in the status quo in an organism, situation, or process. He

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further distinguished between planned change and organizational change in which the former is any 'intended, designed, or purposive attempt by an individual, group, organization, or larger social system to influence directly the status quo of itself, another organism or a situation'. (p. 37)

Zaltman and Duncan (1977, pp. 7-8) indicated that social scientists noted two types of social change. The one is transmitted social change or "evolutionary change that occurs without deliberate guidance"; the other is transformed social change, which "occurs when individual groups or organizations change themselves or others through conscious actions or decisions.

Structure of the Social System

From the time the social scientist understands that several components of the social system play a significant role in a system, they try to find out the effect of each component and its importance in the system. The structure of a system contains boundaries, linkages, outputs and inputs. Today, it is expected that the electrical engineer will talk about the electrical system and its components and will understand precisely the effect of each component in the system. But in agricultural development, the complicated structure is not as easy to understand as the electrical system because the agricultural system deals with the human being. Development of agriculture in any area or in the state of Khorassan is related to the linkages of several organizational components and their inputs.

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Parsons (1964, p. 3) mentioned that the distribution of role-types within the social system and rules are from the point of view or the functioning of the social system, the primary mechanisms through which the essential functional prerequisites of the system are met. There is the same order of relationship between roles and functions relative to the system in a social system as there is between organs and functions in the organism. Anderson and Carter (1978, p. 10) indicated that a social system is a special order of system. It is a model of social organization that possesses a distinctive total unity beyond its component parts. That is, distinguished from its environment by a clearly defined boundary, and whose sub units are at least partially interrelated within relatively stable pattern of social order. Put even more simply, a social system is a bounded set of interrelated activities that together constitute a single entity.

So, by definition of the social system, a system cannot be understood unless one has the complete perception about it. All the program planners and development personnel need to understand the agricultural system properly in order to improve the whole system. In order to understand the agricultural system, concerned individuals (administrators, researchers and extension educators, etc.) need a clear vision about the existing social, cultural, economic, political and religious environment of the nation.

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To understand the agricultural system, it is necessary to understand the subsystems and how they link together. The subsystems include research, extension education and activities, government policies, supplies and marketing, and others. The subject of this research was not about the system, but to gain a better understanding of the purpose of the two departments. The system will not develop by itself, and the organization does not exist without a system. The organization will be affected by its environmental factors which affect the way in which goals are met. If there are such factors, there is interaction between the organization and the environment around it. The interaction and activities between the organization and its environment is not a one way action. Both have effects on each other, but the amount of effect differs from one another, as in the case of extension and farmers.

Agricultural development also depends upon other subsystems of the rural system, such as the social or the cultural. Axinn and Thorat (1972) and Axinn (1978) indicated that

Any social system can be said to have six major functional components: Production, supply, marketing, governance, research and extension/education. Each component has subsystem(s) within it, with its own set of sub-component(s) and linkages. Each component also has linkages with outside systems. These outside linkages are with other units that are related in some way to that component's function (p. 9 and p. 17).

In fact, in any social system, especially in rural

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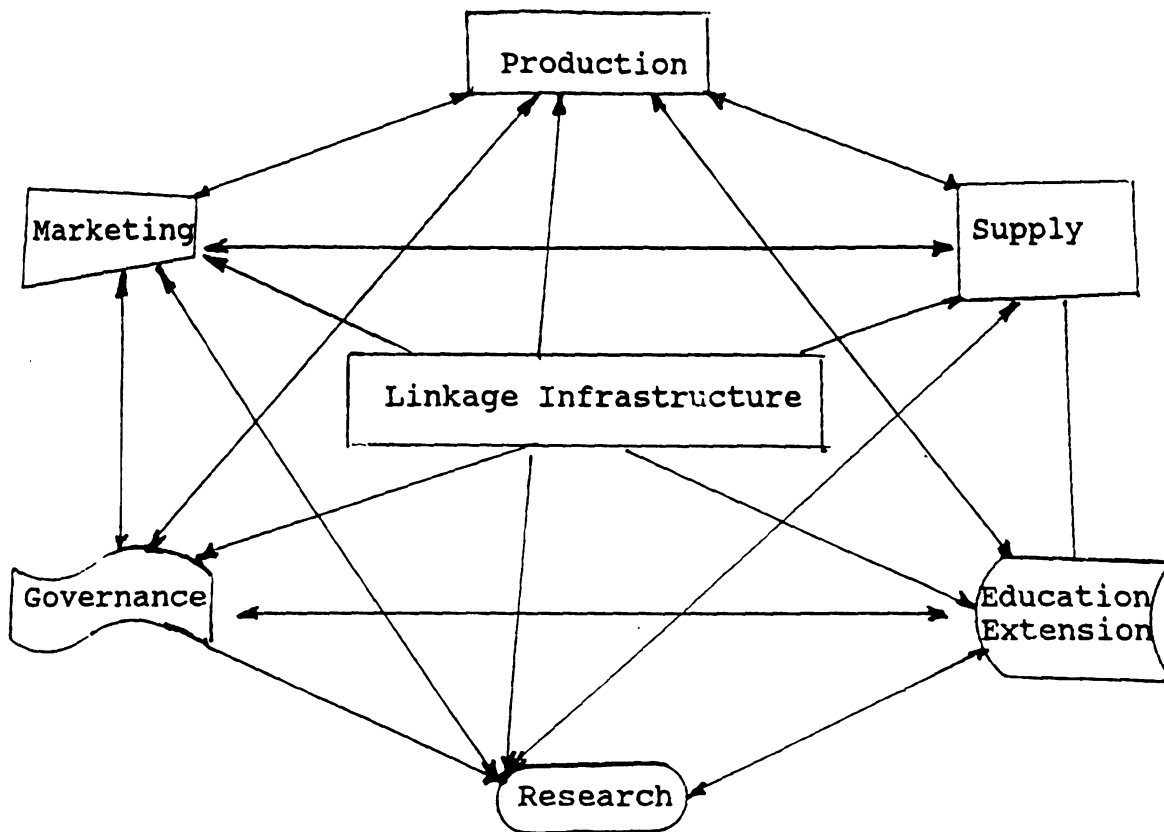
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social systems, the effectiveness of any one component has been related to the effectiveness of all other components; the effectiveness of the linkages between and among components can affect the activities of each component which, in turn, will affect higher production and better living in rural areas. In terms of agricultural development, for example, the two components of research and extension can affect the other and, as a result, affect the overall system of agriculture. Axinn (1978, p. 177) indicated that if the linkage between the extension/education component and the production component is such that information about agricultural innovations does not flow with sufficient efficiency and effectiveness, then the chances are that the production component will not take advantage of these innovations. Again, if researchers in the research component discover a high yielding variety, resistance to diseases and do not have sufficient linkage with the production component - either through an extension/education component or directly to pass on to the production component the information they have produced, than their contribution to the effectiveness of the total system is lessened. Figure 6 illustrates the agricultural social system in its environment according to Axinn and Thorat (1972) and Axinn (1978).



Social, Political, Economic, Cultural, Physical and Religious Environment

Figure. 6: Agricultural system in its environment (Adapted from Axinn and Thorat, 1972, p. 9 and Axinn, 1978, p.17)

Philosophy and Objectives of Agricultural Extension

The philosophy of extension is to help people identify their own problems, to provide practical research-based information that will help them overcome these problems, and to help people create and take advantage of their opportunities. Zamanipour (1981) endorsed the idea that

Extension, usually described as non-formal education, is an out of school system of education which adults and young people learn by doing.

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Extension service is a link between the people and the ever changing discoveries in the laboratories or in the field. To be more specific, it is a 'school of experience' without classrooms or prescribed courses of study. Its curriculum is based on the need of the people it serves. Its students are people in the school of life. Its goal is to help the people attain a more satisfying farm, home, and/or community life. (pp. 35-36)

The Technical Advisory Division Bureau for Programme Policy and Evaluation of United Nations Development Programme, (UNDP 1991, p.1) indicated that agricultural extension is primarily concerned with human resource development and technology transfer to rural households. These two elements are the basic building blocks of agricultural development. Improvements in one element cannot progress very far without improvements in the other.

The entire extension process is fundamentally structured to bring about change. This educational process is predicated upon helping people improve their situation, based on their needs. Axinn (1988, p.1) indicated that extension is a service or system which farm people, through educational procedures, can improve methods and techniques of farming, increase the efficiency of production as well as income, better their levels of living, and lift the social and educational standards of rural life. The function of agricultural extension is to enhance learning among those who till the soil and tend the livestock of the world, learning those things they need to know in order to feed themselves and others.

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Effectiveness of Extension Services

In general, the attitude of the farming community toward extension activities and its effectiveness in the developing countries has been negative. Until now the extension agents has not had a significant influence over the rural development and economic growth of the farmers in Iran. (Rezwanfar, 1366/1988, p. 116) Rezwanfar's evaluations claim that the extension services have had a poor performance in helping the majority of the population of the country (Minot 1984. p, 21); extension services have served only a small proportion of farmers, those being the farmers who were already better off. Because of its objectives, the extension services have provided little help to the agricultural population as a whole. This view has grown among the Iranian policy makers and has led to a radically reduced extension budget after the Islamic Revolution.

Rajabian (1363/1985, p.132) endorsed the negative effect of the budget reduction in extension activities. He compared the extension budget to the total budget; the extension budget was 1/100,000 of 700 billion tomans of the total budget. Shayesteh (1364/1986) also stated that the extension budget was reduced from 156 million to eight million toman in Iran during the years 1363-64 (1985-86). Needless to say, this decision by the government created dissatisfaction and annoyance among the existing staff and

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officers of the extension department in the Ministry of Agriculture.

After 1364 (1986) the acute demand on agricultural production in Iran become more important to the Ministry, and it increased the budget sufficiently to reconstruct the extension program in the country. By adopting specialized crop production programs with achievable targets, the planners and the extension educators created a different environment for the extension department. Various activities such as distribution of fertilizers, plant protection measures, etc. were undertaken through the rural cooperative organizations in the rural community. All these efforts demonstrated that the extension system had the capability to rebuild its image. According to Swanson, 1990:

Inadequate level of investment in public agricultural extension in many developing countries effectively limits agricultural development to the higher resources, commercial farmers who are more aggressive in accessing extension services. The consequence tends to be an increasing gap between rich and poor farmers, increased levels of poverty among many farm household, and more rapid rural to urban migration, even if employment opportunities are not readily available. Adequate financial support to public sector agricultural extension is indispensable in developing countries if the majority of small-scale farmers are to be brought into the development process. (p.25)

Evaluating the impact of extension on agricultural development is difficult. Rutton and Hayami (1973, 120) indicated that evaluation of extension programs is

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complicated by the fact that extension agents are not the only source of knowledge for the farmers; frequently they are only a marginal source. Farmers get information from friends and relatives, from skilled local farmers, etc., and this information is often very efficient in some social environments.

The ultimate function of extension is to bring about desired change. Changes are expected to appear in a person's mind first, before visible changes occurred. Changes in this person's knowledge, changes in habits and attitudes, and changes in skills are basic to further change.

Role of the Extension Agent

In general, the role of the extension agents in developing countries and in IRI has been to teach people in rural areas how to raise their standard of living by their own efforts, using their own resources, manpower and materials, with minimum assistance from the government.

Work with the rural farmers has been regarded as of first-rate importance in Extension and Rural Development in IRI. The Extension service in the state of Khorassan has been an educational and technical organization. Agricultural extension services act by disseminating information among the rural people which was presumed to be of use in increasing agricultural productivity. Farmers

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should understand the extension services and their function of disseminating information. The extension agent can be an effective link to connect the farmers and the research services.

Increasing agricultural production requires that the farmer have access to the skill and knowledge to use what science has discovered about soils, plants, animals and mechanization. When modern material inputs are produced and distributed among the farmers at reasonable prices and investment in agriculture becomes profitable, farmers are likely to be willing to use them. However, farmers must learn how to use the new materials and practices; this has been the responsibility of extension. Zamanipour (1981, pp. 35-36) indicated that most of the farmers in the rural area in Iran were illiterate; thus agricultural extension as non-formal education can play a vital role in teaching modern methods of agriculture to the farmers.

Motivation of the Extension Agent

Effective extension agents are needed. Many observers report that wages were frequently low; this provided an explanation for the lack of motivation and the apathy of many agents. There are several ways of motivating the extension agents. Zaltman and Duncan (1977, 207-209) indicated that direct financial incentives, indirect financial incentives, and nonfinancial incentives motivated

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the Extension Agents to work closely and effectively with the clientele. Providing fixed compensation, commissions, rewards and bonuses were the most common practices used by management. Ban and Hawkins (1985) indicated that:

Each extension agent to be motivated fully must know clearly what his task is, and must consider it to be important for his farmers and realistic for himself. He is likely to lose this motivation if he is unable to complete a task in the time allotted or with the transport available. (p. 253)

They also indicated that:

It is logical for each extension agent to have his own opinion about the direction agricultural development should follow in his area. He will be strongly motivated to assist this development if the extension program works in the same direction. (p. 253)

According to Minot (1984), quoted from Kabure (1979, 146) who evaluated the agricultural extension systems in six West African countries (Benin, Mali, Niger, Senegal, Togo, and Upper Volta), the under-compensation of the extension agents and the failure to provide them with a means of transportation were the main causes of their lack of motivation and the rapid turnover of agents.

Historical Background of Extension Education

According to the report of the Global Consultation on Agricultural Extension of the Food and Agriculture Organization of the United Nations edited by Swanson (1990), the historical roots of extension can be traced back to the Renaissance when there was a movement to relate education to

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human life and the application of science to practical affairs. Different types of institutions have emerged to accomplish these goals. For example, agricultural societies can be traced to the early eighteenth century, followed by the formation of agricultural schools and colleges.

The publication of agricultural books and periodicals can also be traced back to the same period, when farmers first began to organize and share ideas about improving agriculture. Ad hoc efforts to organize extension began in the mid-nineteenth century. These early efforts gradually evolved into several formal extension organizations which became established in the late 1800's.

In the past 100 years most countries in the world have established some type of extension system. These systems are dynamic organizations that reflect national goals, institutional arrangements, and changing needs of clients. In most countries, these extension organizations have the same basic function and purpose: apply practical knowledge to improve agricultural productivity and the quality of life of farm families. Swanson (1990) indicated in the FAO report that:

In reflection of this historical development of extension, the success of public agricultural extension organizations can be attributed to several closely related factors. First, all systems need a continuing flow of practical knowledge and useful information that can be transmitted to farmers through appropriate educational programs. Second, extension performs best when working with organized groups of farmers who participate actively in extension programs and

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their development and provide continuing public support for extension. If major groups of farmers are not well organized, extension can play an instrumental role in the organizational development of these client groups and thereby increase their access to extension services. Third, a strong, public organization is generally built on formally enacted legislation, which provides the legal basis and mandate for extension and a continuing source of financial support. This perspective of the historical development of extension provides a useful background when considering extension's current role in agricultural development. (p. 9)

History of Extension Education in Iran

Sayed Ali Reza (1984) quoted from Nahjul Balagha; Imam Ali Iban Abu Talib indicated that God does not ask those people who don't know but asks those who are educated and have understanding for not educating those uneducated people. Malek Mmohammady 1362 (1983) quoted from Khajehnoory 1305 (1926) that in Iran thought should be given as to how the people can be educated about science and technology and reduce the emphasis on philosophy and literature. Today the roots of civilization, especially economic civilization, is based on the opportunity to gain knowledge in science and technology. So the people of Iran must be introduced to the modern science and technology in a tedious way. Malek-Mohammady 1362 (1983) reported that, in 1297 (1918), Falahat (Agriculture Department) was established. This did not have any extension role at the primary stage, but later on it introduced the new ways of agriculture and taught the farmers through establishing a

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demonstration plot. He indicated that agricultural extension in Iran gained tremendous progress during the years 1297 and 1326 (1918-1947).

Until 1331/1953, extension approaches were conventional and did not introduce improved seed varieties, chemical fertilizers, or plant protection measures. Extension agents and farmers during the time mentioned did not actually look at pest problems or pest control. Vaccination of animals was unacceptable, and new planting practices did not take place. The farmers did as their fathers had done.

From the year 1331 to 1342 (1953 to 1964), extension personnel actually contacted the farmers and transferred information and knowledge to them. The reaction of the farmers to Extension Personnel was very positive because the information prepared for the farmers was very modern.

In 1964, the Shah's revolution disturbed the farmers' management operation. During 1963, the Extension Department was getting help from the Rural Development Peace Corps (Sepah Tarvige). Most of this group were graduates from general high school, led and supervised by college graduates from the agricultural colleges who did not have adequate knowledge of agriculture. This created unhappiness for existing agricultural extension personnel. Job quality was reduced. Extension Agents were issuing coupons for farmers to get farm supplies such as fertilizers and pesticides or to participate in the distribution of land, then doing the

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actual job of education as they should be doing. Malak-Mohammady (1988) stated that at this time, 1964, Iran, which until that time was self-sufficient in food production for its 20 million population, began to import. Also during these years, 1964 to 1978, the Extension Agents became weaker and weaker, and farmers did not accept extension ideas. During the revolution, this situation continued and became more visible than before. Najafy 1362(1985) indicated that "Over fifty percent of the Iranian population worked in rural areas, but they were not able to produce food for the other half of the population." From the points mentioned, Njafy also indicated that agricultural development in the near future in Iran did not have a bright view.

Agriculture in Iran, with all the facilities and attention, has not played an efficient role for Iran. Farmers without a knowledge of the techniques and education misuse production equipment and facilities. Human forces in the agricultural sector create an agricultural production of low efficiency. Too many organizations with different responsibilities and with unclear programs and objectives have been working in the rural areas. Najafy (1983) indicated the agriculture sector can be categorized as:

- Having low efficiency of the labor force in the rural areas.

- Individuals doing the organizational activities on their own.

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- Many organizations doing the same job.
- Duplicating work at high cost
- Having low linkage for rural program planning. (p.43)

During the Islamic Revolution of Iran, the people of Iran worked with the members of Jihad for rural development to help farmers increase their agricultural production. Partially due to this participation by the people, and partially due to the above mentioned weaknesses of the Extension Department and other government organizations, the Jihad Organization became the Ministry of Jihad with the responsibility of rural development through the improvement of agricultural production, infra structural development and socio-economic development.

In 1990 the State Extension Director was the leader of extension in the state, and he was responsible for the state extension program. His position was not as important as it should have been because of the structure of the system. Major decisions were made by the central government rather than at the state level. The director's duties also included administration of extension funds and the approval of all publications. Because of the dramatic change in the department, the positions of the state directors have changed several times during the past ten years which affected the efficient management of the organization. The State has been divided into seventeen Sharestan (districts) for the purpose of supervision. In each sharestan, the agriculture district director has been responsible for the

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coordination of all work in the district in terms of extension activities such as crops production, pesticides management, etc.

Adoption and Diffusion of Agricultural Innovations

Over the past decade a number of criticisms of the traditional adoption/diffusion model have emerged. The primary objectives of agricultural extension is dissemination of innovations to increase agricultural production and productivity. Lamble (1984) expressed it in the following way:

The major function of most extension practitioners is to facilitate the adoption of new ideas and practices by their clients. In order to be most effective in this role, we need an understanding of the processes and factors involved in the diffusion and adoption of innovations, of how new ideas and practices are communicated among members of our client systems, and how they decide to adopt or reject these innovations of new ideas and predict the rate of adoption of new ideas and provides a basis for developing effective strategies and planning successful extension programs. (p. 32)

Lamble (1984) also indicated that the rate of adoption of innovations is influenced by at least five factors such as: 1) the type of communication or discussion involved in the adoption of the innovation; 2) the perceived attributes of the innovation; 3) the use of the client system; 4) the nature of communication channels used; and 5) the extent of the extension practitioner's effort.

In Iran most of the innovations have been developed at

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the research stations or imported from developed nations. Because research stations develop innovations in a controlled environment which can be very different from the actual situation, these innovations may not be suitable for adoption without further research in the actual field. Ban and Hawkins (1988) indicated that:

Most agricultural research starts in a research station under carefully controlled conditions. The problems chosen for study can originate from scientific development, from a diagnosis of farmers problems or from a combination of both. It is seldom possible to apply research station findings directly onto farms because of differences in circumstances, capital and manpower. Therefore, adaptive research on experimental farms and in farmers' fields is also required in different regions to see if results differ significantly under varying conditions. (p. 29)

Adoption and diffusion of agricultural innovations in the rural community depend to some degree on change, that is, introducing a new way of doing things that may complement, supplement or replace the old traditional way of getting things done. This new way of doing things -- new ideas or innovations -- may be a new practice such as using a new variety of wheat instead of the local variety or it may be a new technology such as hybrid seed variety.

Much research has been done to determine the factors that are related to the acceptance of the innovations. Innovation is an idea perceived as new by the individual in the social system. Using the innovation requires a change in basic principles from the old practice or technology, and

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it also requires a change in basic beliefs on the part of the users. A good example of an innovation is weed-killers which were not used by the farmers in Iran until they were introduced by the extension agents.

Adoption of an innovation depends upon its characteristics as perceived by the ultimate users. According to Rogers (1984), Lionberger (1982), Brown (1981), Rogers and Shoemaker (1971), an innovation has a number of characteristics. Below some of these characteristics are listed.

Relative advantage: An innovation must be perceived as better than the idea it supersedes. For example, if gas/fuel is expensive and not readily available or if there are no roads to take tractors or machinery to the field, using equipment pulled by animal power has the relative advantage.

Compatibility: The degree to which an innovation is perceived as consistent with the existing technologies, values, experiences, and needs of the potential adopters. For example, Iranian farmers prefer small engine sprayers to the larger sprayers used by tractors.

Complexity: The degree to which an innovation is perceived as relatively difficult to understand and use. One of the

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reasons the combine harvester was not readily adopted in developing countries is the difficulty and complexity of the machine.

Trialability: The degree to which an innovation may be tried a limited basis. For example, fertilizers can be tried on a small plot without risking the entire harvest.

Observability: The degree to which the results of an innovation are visible to others. The effects of using fertilizers in sugarbeet can easily be seen on its vegetative growth.

Accessibility/Availability: The degree to which an innovation is readily available with minimum effort. There is little need for an extension agents to advise farmers to use fertilizer if that fertilizer is not available in the market.

Adoption

According to Rogers (1984) adoption is a mental process an individual passes from first hearing about an innovation to its final adoption. Lionberger and Gwin (1982, p. 62) indicate that there is no disagreement among researchers that thought-out adoption decisions are the product of a sequence of influences operating through time, rather than something that happens instantaneously. But there are arguments about just what the process is like-- what stages occur and in what order. Lionberger (1982) also indicated that :

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At this stage the individual decides that the new practice is good enough for full scale use. It is reasoned that he is likely to continue full use until something new starts the cycle again. (1982, p. 62)

Stages of Adoption

Stages in the adoption process according to Rogers

(1983) Linberger (1982), and Brown (1981) are:

Awareness Stage The Awareness Stage begins at the point in time when the individual first finds out about some new practice or technology. At this stage, the individual lacks details concerning the way it works, how to use it, its costs and benefits. He/she knows little more than its name and the fact that it can be had. Many people become aware of new ideas without much actual conscious effort on their part. They are 'bombarded' by the idea via radio, television, farm magazines or conversations where the idea is mentioned by others.

Interest Stage At the Interest Stage, the individual is actively seeking additional facts about the practice or technology. He/she wants to know what it is, how it works and what its potentialities are. Interest is in the cost factors and the time it will take to get one's investment back if adopted.

Evaluation Stage At the Evaluation Stage, the individual puts the new practice or technology through a mental trial. He/she applies all of the information gathered to his/her own situation. Questions are asked such as, 'Can I do it?' 'Do I have the type of farm, the capital, the labor resources, the management skills to use this?' 'If I do use it, will I be better off than with what I am now doing?' After people have answered the above questions, many take into consideration the importance of this practice to themselves and/or their families and they weigh the capital outlay against what else they might do with the same amount of money and the satisfactions they would get from these alternatives.

Trial Stage An individual finishes the evaluation

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stage by making the decision either to reject or accept the practice or technology. The majority of those who decide to accept any idea usually go through a Trial Stage where the individual can try out the practice in an experimental way to determine the answers to such questions as: 'How do I do it?' 'How much do I use?' 'How do I operate?' 'How can I make it work best for me?'.

Adoption Stage The final stage in the process is the Adoption Stage. This is characterized by a large scale and continued use of the idea and, most of all, by satisfaction on the part of the user. This doesn't mean that an adopter will use a practice or technology forever, but he/she will tend to use it until something newer comes along to make him/her dissatisfied with it. It does mean that the user thinks he/she has a good thing and will make it a part of the ongoing program. (pp. 61-62)

Farm Information Dissemination

To understand how information is disseminated among the farmers, several issues which are related to innovation development and its understanding need to be studied.

Figure 7 shows the four elements of the information dissemination system (Lionberger & Gwi, 1982)

1. The function that must be performed in the total operations.
2. The theory to practice continuum of development that must take place from the time that the basic science knowledge is developed until a portion of that is turned into a usable invention and put into use.
3. The social subsystems that must be developed and that must become properly linked to sustain the flow of information to potential users.
4. The basic concepts that prescribe how the system should run and for whom. (PP. 31-32).

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A Model to Generate and Disseminate Agricultural Innovation.

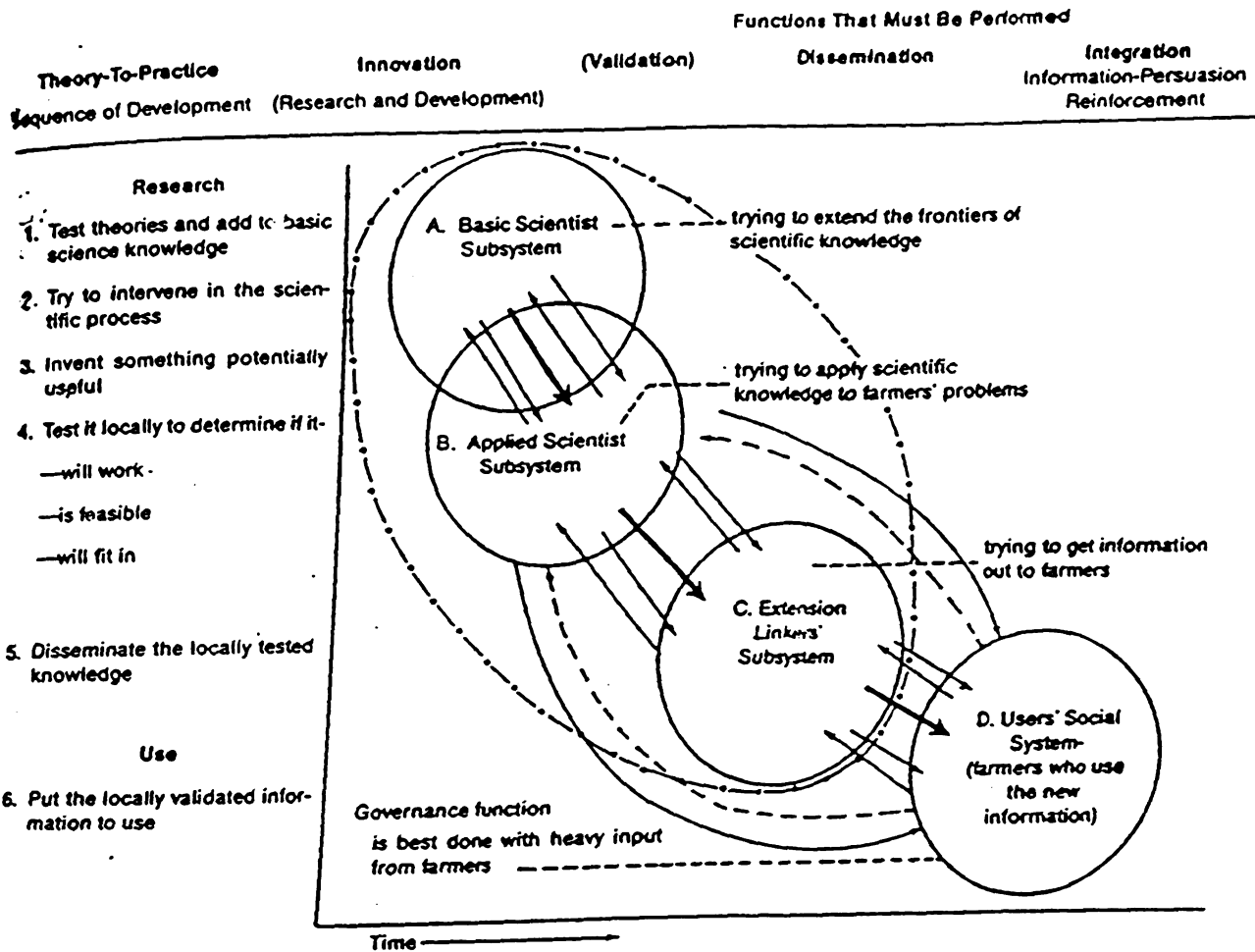


Figure 7. A model to generate and distribute farm information. (Adapted from Lionberger & Gwin, 1982, 31).

Figure 8 also gives a somewhat simplified picture of the role of agricultural extension. The extension organization obtains information from agricultural research and other related organizations. This information is used by management and extension specialists to instruct the extension agents on what they should tell farmers.

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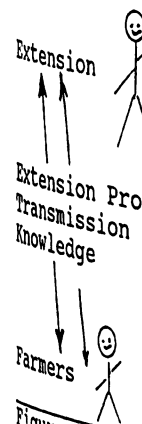


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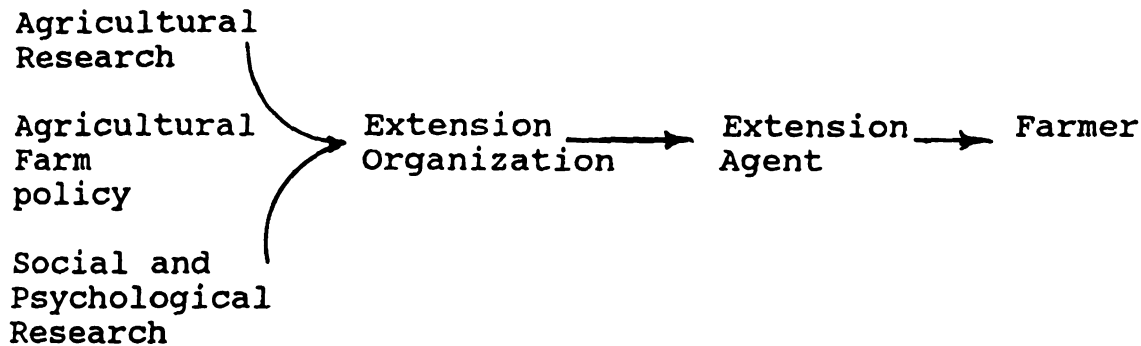


Figure 8. Information flow in agricultural extension (Ban & Hawkins 1988, 16)

Lionberger and Gwin also have similar views in relation to the role of the agricultural extension agent. Figure 9 gives a somewhat simplified picture of the role of agricultural extension. Farmers receive information not only from the agricultural extension organizations but also from other important sources. The extension organization should study the farmers' information environment very carefully to identify the gaps in the information received.

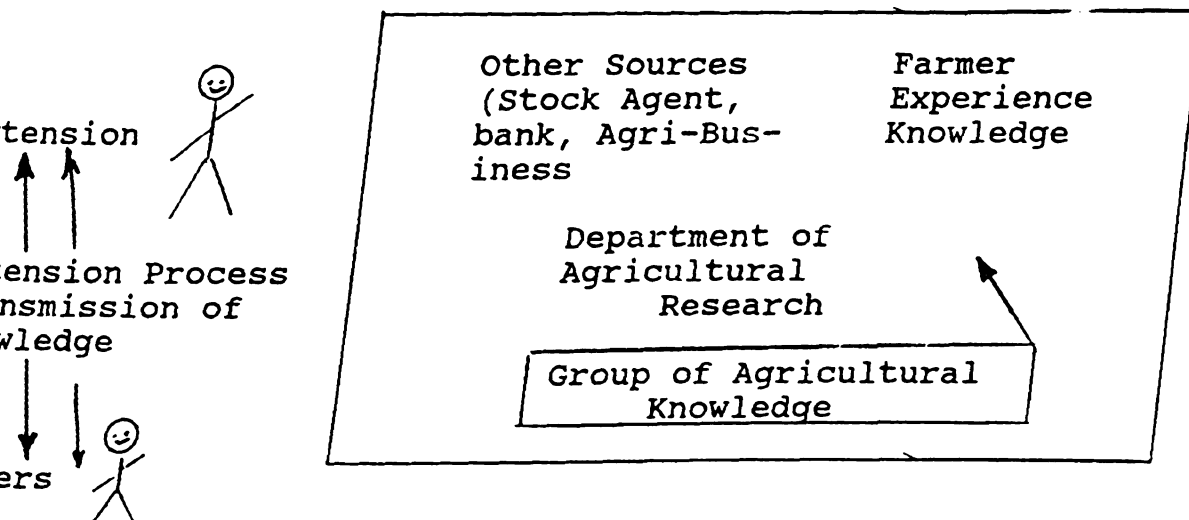


Figure 9. Role of agricultural extension (Ban and Hawkins, 1988, 31).

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According to Rivera and Scharm (1987):

There must be increased emphasis upon farm research, with special attention to socio-economic studies and feedback from extension staff and farmers, this increased emphasis must, if it is to be effective, be accompanied by greater interdisciplinary collaboration among researchers, farmers and extension agents working in the field, whether at the village or district level, or as subject matter specialists (p.73).

Training and Teaching Methods of Agricultural Extension

Development of agriculture is an integral part of economic development. Very few countries have experienced sustained economic development without growth of the agriculture sector. It is obvious that the countries having experienced significant growth in agriculture have also achieved a more rapidly growing economy. To achieve this growth required knowledge and experience. Accumulation of knowledge and development of understanding are important aspects of receiving extension advice. Knowledge accumulates through the five physical senses, sight, sound, touch, taste, and smell. For example, a blind person cannot appreciate the beauty of flowers, but his/her appreciation with the other four physical senses may be highly developed with training and practice. Thus, he/she learns to read by touching, or he/she learns to distinguish food and beverages by their flavor and smell without the need to see them.

Savile (1965) indicated that:

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is most readily acquired when it is received through several of senses. People learn most quickly when, (a) They want to learn--if they have some interest or desire for learning and if this interest is retained throughout the lesson. (b) They like and trust the teacher--when they recognize the value of this teaching and sincerity of his purpose, and develop an affection for him. (c) They understand what is being taught--when the teacher teaches at a speed that they can follow and in language they can understand, the lesson is presented a variety of ways--making use of all the senses possible, and they actively take part in the lesson by questions and discussions and they practice until they acquire the necessary degree of skill. (pp. 46-47)

Extension agents, especially those in developing countries, should have skills in several teaching methods, because they work with rural people of whom a large percentage are illiterate or have very little education. Savile (1965, pp 56-57) indicated that extension teaching methods can be classified into three groups: mass media methods, groups methods and the individual method.

Mass Media: These methods can be applied through broadcasting and using news articles in the press. The mass communication channels are used to communicate with the people not seen and generally not personally known. They include television, radio, newspapers, bulletins, pamphlets, etc.

Group Methods: These methods are generally used to advance people from awareness and interest to desire and the trial stages of accepting a new practice. They include general meetings, group discussions, result and demonstrations, method demonstrations, farm visits, conducted tours, and

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Individual Teaching Methods: Although a great deal of extension teaching is done in groups, learning is always an individual process. Frequently, individual meetings are needed to persuade a farmer to adopt a new practice. The extension agents must know the farmer and his situation well and obtain his confidence before he can convince him of the need to adopt a new practice. These individual methods include farm and home visits, office call, personal contact and telephone calls.

Developmental Role of Extension Education and Rural Development:

The essential function of the extension agents is to create situations and an environment in which others develop educationally. Learning is an active process on the part of the learner. Unless he becomes interested to the point of putting forth mental and physical effort to learn, nothing is accomplished. It is the task of the extension worker to provide people with an opportunity to learn and to stimulate mental and physical activity that produces the desired learning.

During the 1950s developed and developing countries viewed rural development as "modernization" consisting of the change in individual attitudes from "traditional" to "progressive". In Iran the farmers are not usually responsive to economic incentives and the changes required for increasing agricultural production.

While agricultural productivity, extended through encouraging Hawkins (1988) agents have been to change farmers. The fertilizers, animal to change farmers v their farms. Many process of changing in the communication tell farmers, but n farmers become more situation is an imp

Farmers are al subjects; if agents can deliver the inf understand, farmers have proved in Iran positive way of tra educated farmers. Development Persons increasingly go fun must help the client Communication is no implementation of

While agricultural research focuses on how to improve productivity, extensionists must accomplish their objectives through encouraging people to adopt innovations. Ban and Hawkins (1988) asserted that most agricultural extension agents have been trained by schools of agriculture in how to change farmers. They have learned about plant varieties, fertilizers, animal nutrition, etc. However, their task is to change farmers who subsequently may decide to change their farms. Many agents have not been trained in the process of changing farmers, that is, in adult education and in the communication process. They have been taught what to tell farmers, but not how to tell it to them so that the farmers become more capable farm managers. Changing this situation is an important goal of extension education.

Farmers are always interested in talking about farming subjects; if agents and specialists have been prepared and can deliver the information in a way the farmers can understand, farmers can be benefitted. Demonstration plots have proved in Iran and in other parts of the world to be a positive way of transferring information to the poorly educated farmers. Extension educators' and Rural Development Personals' educational orientation in Iran must increasingly go further than presenting just the facts; it must help the client learn how to apply the new knowledge. Communication is not enough; the farmer needs help on implementation of the useful research knowledge within his

system. This as

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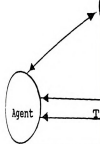


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system. This aspect of an extensionist's role is shown in Figure 10.

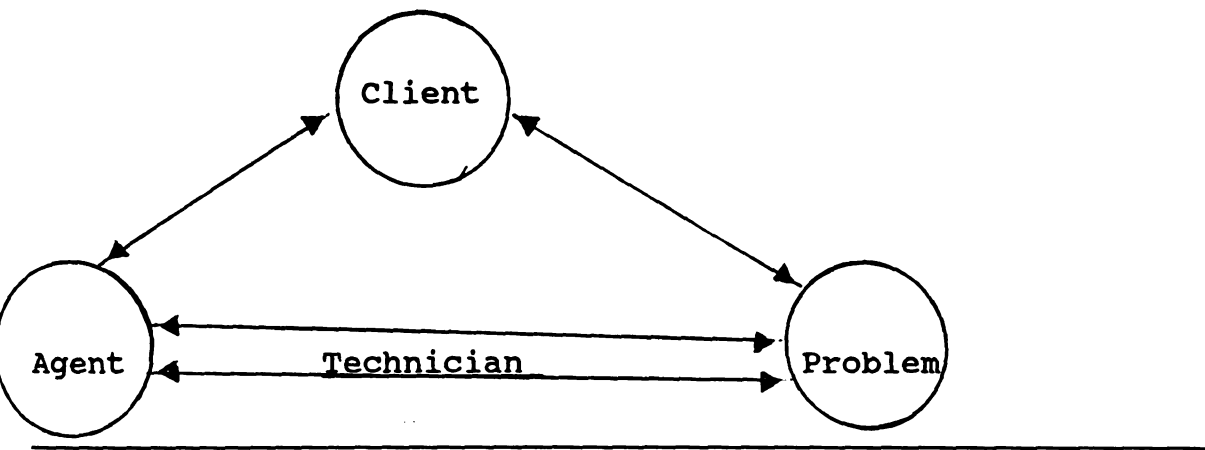


Figure 10. Extensionists' Role (Carter, 1985).

Carter indicated that as a technician, the agent solves the client's problems. As an extension agent, he teaches the client to solve his own problems. An extensionist's role behavior is influenced by his ability and willingness to work and also by the climate inside the extension system (Westermarck, 1987, p. 254). This can be either supportive, suppressive, or it can be ignored (see Figure 11).

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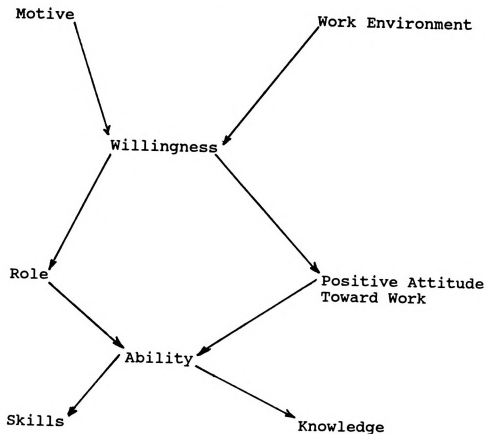


Figure 11. Components of Extensionists' Role Behavior Components (Westermarck, 1984).

To talk about training is to talk about learning for better living and understanding for discovering and working together in such a way that goals are accomplished and goods are produced in an efficient way without damaging the environment. Axinn (1972) indicates that:

Extension/education and research services, input supply and credit arrangement, marketing structures and price systems, as well as communication and transport networks, are the basic features of infrastructure required for agricultural development. Although the private sector often has an important role in the development of such facilities, policy guidelines on infrastructural development and operation are the responsibility of the governance. (p. 3)

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Communication and Linkages of Extension and Rural Development Services

Minot (1984, p. 1) indicated that research without the use of agricultural extension is not of much use, and can even be a waste of resources. Often no dissemination or training occurs. In reality, the generation and diffusion of agricultural technology in many developing countries is not a "seamless process", but rather consists of a research system and a separate extension service with insufficient communication and interaction between them.

The primary objectives of the agricultural extension agents has, historically, been dissemination of innovation and transfer of technology to increase productivity. This will not happen unless there is a linkage between the scientific organization and disseminating organization.

Minot (1984) asserted that:

The word "linkage" will refer to permanent channels of communications and mechanisms for cooperation between institutions in agricultural development, especially in developing nations. Linkage research institutions (ie. Michigan State University) and extension agencies (cooperative extension) facilitate the flow of technical and scientific information and recommendations from research to extension, as well as the flow of information from extension to research concerning farmer practices, constraints, and response to previous recommendations. (p. 12)

In developing countries there is a weakness of linkages between agricultural research and extension. The effects of the research subsystem on the Iranian agricultural system have not been observed for the past decade. The evidence of

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weak linkages between the organizations is indicated by the decrease in production of major crops (i.e. sugarbeets and cotton), and the slow down in agricultural development in general. Mojtahed and Esfahani (1987) indicated that Iranian investment in agricultural research and development has been significantly cut. These shortcomings impeded agricultural growth in the early 1980s. (p. 839)

Axinn (1978) also stated the importance of linkages between and among the concerned organizations. He indicated that:

The absence of adequate linkages among related but separate services often renders ineffective the independent service of each; and coordinated integrated programs are necessary to support rapid agricultural development. (p. 178)

Lewis (1982) supported the need of strong linkages between the researcher and the extension agents. He indicated that:

As we approach a new century with increased demand for new agricultural technology, research and extension needs to be recognized as a partnership working for a common goal, as envisioned by those who had the foresight to provide for this unique system. (p. 2)

The researcher had the opportunity to speak with the research and extension directors in Iran about the nature of linkages they were maintaining with each other. Both the directors (research and extension) expressed that they had negligible linkages between them. They emphasized the need for linkages for the development of the country. Iranian extension history has shown the relationship between extension and research directors have gone through

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different steps since the existence of the two departments; both were within the Department of Agriculture and separated with different administrative units. The Research Department in the State has high linkages with the Assistant Ministers of Research and deals exclusively with research directed by the Ministry, not by local needs.

The cut of extension activity from the research unit after 1979 added to the uncertainty of how the results of the research were to reach the farmers. Because the extension and research subsystems were in separate administrative units, the amount of communication between them decreased, and it was more difficult than ever to establish linkages between the subsystems.

There has been a willingness between the researcher to share the research results with the extension agents and the rural development personnel. This could take place if some changes were to occur between the organization policy and willingness of the Extension and Rural Development departments.

Farmers' Needs and Research

The transfer of information and the adoption of commended new practices by farmers are strongly related to each other. The improvement of productivity of agriculture in any agricultural society and in the state of Khorassan requires the transfer of information and the adoption of

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recommended new practices by farmers. The demand for extension activities has grown both qualitatively and quantitatively, but there is strong evidence that the existing extension and research services cannot meet the needs of farmers. Interaction between extension and research shows certain weaknesses related to their organization and functioning between their linkages. It is very clear and important that the lack of effective linkage between the key organizations such as the agricultural research center, farmers, and social psychological research with the extension organization will affect the productivity of farmers.

Research and Extension

Development strategies in the field of agricultural research and extension have reflected the prevailing ideas about the process of social economic development. According to The United Nation Development Program (1991):

Agricultural extension is primarily concerned with human resource development and technology transfer to rural households. These two elements are basic building blocks of Agricultural development. Improvement in one element cannot progress very far without improvement in the other. As economic research has shown, investment in agricultural research that is , technological change yields high returns on investment, comparable research on basic education and on extension has documented very positive returns on both types of educational investment. (p. 1)

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research in developing countries is that it does not produce recommendations which are useful to the farmer, especially the small scale farmer. This criticism comes both from extension personnel who often feel unfairly blamed for the failure of farmers to adopt "improved" methods and crop varieties as well as from outside evaluators of agricultural institutions. According to Fernandes (1982):

Eighty two percent (82%) of research scientists felt that extension personnel made too little effort to learn about and transfer the technologies, and 75% of the extension agents felt that the new technology was not acceptable to small holders. (p. 62)

Extension:

Better communication between researchers and extension personnel is useful to the extent that it improves the relevance of research results or the diffusion of those results to farmers. According to the study by Lakoh and Akinbode (1981) in which they surveyed farmers, extension agents, and researchers in Sierra Leone, they found that the extension agents were a relatively minor source of ideas for researchers and that researchers seemed more concerned with scientific recognition than in working with the agents on practical problems. Actual communication between researchers and extension personnel was most frequently done through research reports and pamphlets, while face to face contact was generally at the request of the researcher. Researchers confirmed, at least verbally, the importance of

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communication with feedback from extension personnel, but they felt that this was hindered by the absence of a formal coordinating body and poor means of communication.

According to Rogers (1983):

Farmers still develop agricultural innovations that are worthy of trial and used by others, it is often assumed that most of these innovations are developed in experiment stations. At this stage it is difficult to predict the kind of fruits they will yield. If the adopter of an innovation is faced with a degree of uncertainty, the inventor, developer of a new idea must cope with even greater uncertainty. She/he must understand and adjust her/his own problems (as an innovation adopter must do), but also the problems of various other individuals and organizations who will be the ultimate adopter of the innovation that she/he is creating (p. 140).

In an organization such as agricultural research, the desire is to move toward greater rationality rather than away from it. What should be taken into consideration here is the amount and quality of information available to the decision making process and the direct involvement of farmers in all phases of the technology innovation process (TIP). This really requires the active participation, rather than education, of farmers.

Communication

Instructional methods by extension agents should be compatible with the audience's skills and should be presented in a way that the audience will understand and learn. The extension message is useless to farmers if it is not received and understood by them. There are ways to make

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something complicated and there are ways to make a complicated thing easy to understand. Extension Agents are the people who transfer the research results to the farmers in a way that they will understand. This is an important point for the Khorrassan Extension Agents and Rural Development Personnel who are working with a group of farmers who have little or no education. Extension Agents in I.R.I., as well as elsewhere, are faced with this problem. It is the role of the Extension Agents to interpret the message or idea in several ways such as through the use of symbols or wording which can be understood by the farmers. According to Loomis and Beagle (1957):

Communication refers to the manner in which information passes through social systems and the manner in which opinions and attitudes concerning information are formed or modified. Obviously, communication is related to all the elements such as research and experience. We know that the attitudes of individuals are shaped from interaction in social systems. (p. 47)

Communication is essential to agricultural development; it is the vital bridge that carries the results of research from the laboratory or experiment station to the field. An agricultural extension agent has the responsibility of getting helpful information to the people. Extension is the connecting link between the sources of knowledge and the receivers of knowledge. To fulfill this, extension must

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- Interpret the knowledge so people will understand it and 3)

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The role of communication in IRI, the State of Khorassan and in developing countries differs from that of developed countries because the clients are not the same. There is often a distortion of the message between the extension agent and farmers in the developing countries because of an educational gap between the agents and the farmers. Axinn (1988) noted the importance of communication and stated that:

The main function of the extension agent is to communicate agricultural research findings and recommendations to farm people or bring farm people into contact with sources of practical and useful information through organized group action.
(p. 1)

Communication is the process by which information, decisions, and directives are transmitted among participants and the ways in which knowledge, opinions, and attitudes are formed or modified by interaction.

Ennis (1961) argued that any communication activity should be viewed as a social system. He also maintained that the information flow could be analyzed as a system.

There is no doubt that understanding the dynamics of any given social system calls for a knowledge of the communication media, channels, and barriers within the system. Communication is said to be the primary process basic to the articulations of each of the elements of a social system and to the unity of the whole.

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Linkage

Development of agriculture in the U.S.A and other developed nations was not established without communication between research and the extension service. During the 1950s many researchers did some extension work, while the extension and the information services provided the main channels for the flow of the research to rural families and for the flow of new farm problems to the research workers. Universities and higher education centers provided courses for farmers. Khorassan Extension education could look at these kinds of activities to assist its development too. Loomis (1965) stated that:

Linkage is the process whereby the elements of at least two social systems come to be articulated so that in some ways and on some occasions they may be viewed as a single system. (p. 16)

Also Lionberger and Gwin (1982, p. 222) defined linkage as "Establishment of a connection between persons or agencies, such as between agricultural research and the farmers who can use their information". According to the World Bank, 1981:

The process of one system establishing a bond or tie with another system may result in the formation of larger systems through such linkages. Linkage is in many respects a corollary of boundary maintenance. Whereas the process of boundary maintenance refers to the limits set upon inter-system contact, the process of systemic linkage refers to the organizational arrangements for (sub) system inter-dependencies.

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Training and visit. Extension is the development of a dynamic link between farmers, extension staff and research workers.(p. 8)

In terms of frequent and systematic contact between farmers and visit extension workers (VEWs) system world bank also indicated:

Direct, frequent and repeated contact between farmers and VEWs forces the extension service to focus on technically and financially feasible recommendations for improving farm production; the VEWs' regular contact with research through the SMS gives them the opportunity to raise immediate production problems, and to respond effectively to such questions. SMS needs to work with researchers to resolve field problems. Through this sequence, pressure is placed upon researchers to concentrate on the practical field problems of the average farmer. There are signs that such a linkage is emerging.(p. 8)

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CHAPTER IV

METHODS AND PROCEDURES

This study could be categorized as a descriptive survey. According to Babbie (1983):

Survey research is the best method available to the social scientist interested in collecting original data for describing a population too large to observe directly (p. 209).

Mailed questionnaires to the Extension Agents, the Rural Development Agents, and the Directors of the two departments were used to collect data. Data on the farmers were collected through personal interviews according to a schedule established by the researcher.

Instrument Development

Development of the research instrument was largely influenced by several researchers who conducted similar studies in the area or in related areas (FAO 1989) study in Cyprus and Turkey.

Three different instruments were developed for this study: one for farmers, one for Extension and Rural Development agents, and one for the administrators of both organizations.

The three instruments were developed and presented to a

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panel of experts consisting of professionals in the Department of Agricultural and Extension Education at Michigan State University. Two faculty members from the College of Agriculture at the University of Mashhad in Iran and the directors of the Department of Extension and Rural Development were also consulted.

Farmer Questionnaire

The interview schedule for farmers was divided into five parts.

Part I requested data on personal and situational characteristics selected for the study.

Part II was designed to reflect farmers' perceptions related to the visits of Extension and Rural Development personnel indicative of activities with the farmers. The respondents expressed their opinions on a five point scale. Scale scoring was 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree for positively stated items. The scoring was reversed for negatively stated items.

Part III was developed to reflect the respondents' perceptions of extension purposes, and their perceptions of the effectiveness of collaboration between the agents and the farmers. The respondents expressed their opinions using a five point scale which was scored as described in Part II.

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Agent Questionnaire
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Part IV was developed to reflect the respondents' perceptions toward increases in knowledge and skill and the adoption of information provided by the two agencies. Conditions were measured on a three point scale (1=yes, 2=no, 3=not sure). Directions were given at the beginning of each part of the questionnaire by the interviewers (local persons, staff from College of Agriculture and Researcher). Most respondents were not used to such an approach to research, but visits with the researcher and other personnel who were helping the researcher helped to ease the situation. Directions were explained and sometimes followed by a lengthy discussion. Often the respondent was convinced by the usefulness of the directions for the research instrument. Interview schedule instructions were also provided throughout, with the intent to encourage the interviewer to give or write comments, which most of them did. Part IV also was developed to reflect the respondents' perceptions toward the extension program in the future. Part V was developed to reflect the respondents' perception toward the participation in extension programs. On the last page and at the end of each interview schedule, blank space was provided for comments and situational characteristics of elements selected for the study.

Agent Questionnaire

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Development Personnel was divided into six parts.

Part I requested data on personal characteristics, indication of the subject areas in which they were most comfortable, extension activities, extension teaching methods, linkages and areas of teaching. This part was designed mainly so that respondents reflected on their perceptions toward a set of statements related to subject areas skills, teaching methods, and areas of teaching.

The respondents expressed their opinions on three types of scales:

1. A scale for comfortability in the area of teaching, in which the respondents expressed their opinions on a five point scale; (5=very comfortable, 4=comfortable, 3=neutral, 2=slightly uncomfortable, 1=uncomfortable).
2. Those who responded on teaching methods and extension activities, expressed their opinions on a 5 point scale; a range of 1-5, in which 1 was not important, and 5 was very important.
3. On the scale for subject areas taught, the respondents expressed their opinions with yes or no answers.

Part II was designed so that the respondents recorded their perceptions toward a set of statements that were related to linkages between the two agencies as well as perceptions related to the future of the two departments.

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Those who responded expressed their opinions on a five point scale (SD=Strongly Disagree, D=Mainly Disagree but somewhat agree, N=Neutral, A=Somewhat disagree but mainly agree, SA=Strongly Agree).

Part III was designed so that the respondents reflected their perceptions relating to extension planning activities. Those who responded expressed their opinions on a five point scale (0=none, 1=little, 2=some, 3=much, 4=very much).

Part IV was designed so that the respondents gave their perceptions on knowledge and training needs. Those who responded expressed their opinions on a five point scale of (0=none, 1=little, 2=some, 3=much, 4=very much). Part V was designed so that the respondents reflected their perceptions on linkages with other organizations such as agricultural colleges, research stations, agricultural banks and other credit institutions, rural development research station, farm machinery organizations, fertilizer organizations, animal research station, soil, forestry, dry land farming research station, and others. Those who responded expressed their opinions on a scale of (0=none, 1=little, 2=some, 3=much, 4=very much).

Part VI was designed so that the respondents reflected their opinions and perceptions related to the effectiveness of their work.

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Administrator Questionnaire

The questionnaire for the director and managers was divided in six parts. Part I requested data on personal situation and the number of extension activities. Part II was designed so that the respondents gave their perceptions on the expectations of the department in 1) the purpose and objectives of extension activities; and 2) the clientele served. Respondents expressed their opinions for the first section on a five point scale (SD=Strongly Disagree, D=Mainly disagree but somewhat agree, N=Neutral, A=Mainly Agree but somewhat disagree, SA=Strongly Agree). Respondents expressed their opinions for the second section on a scale of one to five (1=not very important to 5=great importance).

Part III was designed in two parts to reflect respondents' perceptions toward the time spent on the activities such as administrative work, educational activities, and non-educational and non-program planning and teaching activities that were used by their extension personnel. Respondents expressed their opinions on a scale of one to five (1=not very important-5=great importance).

Part IV was developed to learn the respondents' perception toward the importance of each teaching methods. Those who responded expressed their opinions on a five point scale (1 = not important to 5 = very important).

Part V was designed to learn the respondents' perception toward the provision of assistance to farmers and

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perception related to effectiveness of their services. Those who responded expressed their opinions on a five point scale (0=none, 1=very little, 2=little, 3=much, 4=very much).

Part VI was designed to learn the directors perception toward the subject areas covered. Those who responded expressed their opinions on a five point scale (1 = not important 5 = very important. The last page of the questionnaire and interview schedule instruments contained blank space to provide respondents an opportunity to make final comments.

Part VI requested data on activities related to strengthening extension activities, those who responded expressed their perception on two types of scales:

1. A scale for departmental programs for strengthening extension activities in which the respondents expressed their opinions on a yes and no scale.
2. Those who responded on perception related to the planning activities, expressed their opinions on a 5 point scale; a range of

SA = Strongly agree A = Agree N = Neutral
 D = Mainly disagree
 SD = Strongly disagree

Instrument Validity

According to L.R. Gay (1987):

Validity is the degree to which a test measures what it is supposed to measure." Three types of validity were considered during the development of the instrument, such as construct, content validity and fact validity.

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The questionnaires and interview schedule were developed before leaving for Iran. They were first prepared in English and then translated into Farsi. The final Farsi translation of the instruments was reviewed by a number of the staff in the College of Agriculture at the University of Mashhad in Iran and assessed for appropriateness, clarity and content validity. Content validity for the English version was established at Michigan State University by a panel of experts (graduate committee members), professors from the Department of Agricultural and Extension Education and graduate students in the Department (seminar format). The appropriate changes were made to increase the validity of the instrument.

Instrument Reliability

According to Babbi 1989;

Reliability refers to the likelihood that a given measurement procedure will yield the same description of a given phenomenon, if the measurement is repeated. For example, estimating age by asking his or her friends would be less reliable, than asking the person or checking the birth certificate. (p. 127)

Also Babbie (1983) mentioned that there are several ways of checking or creating reliable instruments such as -asking only for information relevant to the research. According to L.R. Gay (1987):

The term means essentially the same thing with respect to measurement. Basically, reliability is the degree to which a test consistently measures whatever it measures. (p. 135)

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According to Gay:

Reliability is the degree to which a test consistently measures whatever it measures. The more reliable a test is, the more confidence we can have that the scores obtained from the administration of the test are essentially the same scores that would be obtained if the test were re-administered (p. 135).

The following factors were taken into consideration for the reliability of the instruments. The final instruments were field tested to obtain reliability of the responses. Five extension agents, five rural development personnel and ten farmers were used as a check on reliability. Two groups were similar to the population to be studied. The reliability for the instruments using Cronbachs' reliability coefficient for each section of instrument and average result was 0.80 for Extension Agents and Rural Development Personnel. For farmers, the average reliability coefficient for the instrument was 0.86.

The instrument for directors was not field tested due to the small population and the fact that the researcher did not want to jeopardize the loss of respondents through a pretest-post-test effect. The reliability was checked after the collection and the reliability coefficient were 0.75, 0.86, 0.91, and 0.95 and the average, 0.87.

On the basis of the test and the results of some minor revisions in the area of activities and the subject areas, revisions in wording and item arrangement were made to the instrument. Overall, the results of the responses indicated

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that the questionnaire items were clear. The questionnaire and interview schedule were divided into different parts in relation to the objectives established.

Data Collection Procedures

Data were collected in Iran from January 15 to April 20, 1990, using the personal interview method and questionnaires. The questionnaire and interview schedule were approved by the advisory committee, the university Committee on Research Involving Human Subjects (UCRIHC) at Michigan State University, and the College of Agriculture in the University of Mashhad.

The researcher traveled to Mashhad, Iran on November 29, 1989. Upon arriving in Iran, the researcher discussed the purpose of the study with the head of the Agricultural College and the Extension Director in the Department of Agriculture and the Rural Development Department. The purpose of the meetings was to secure their assistance, to discuss the purpose of the research and its objectives as well as the content of the questionnaires. Copies were made for distribution. Forty-seven questionnaires were mailed to extension agents and forty seven questionnaires were mailed to rural development personnel.

The main offices of the Extension Department and Rural Development in Mashhad helped in this distribution. All questionnaires were accompanied by cover letters and return

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Thirty-four questionnaires (72.3%) from extension agents and twenty-eight questionnaires (77.7%) from the rural development personnel were received by March 19, 1991. A follow up letter was mailed to those who did not return the questionnaires which requested that they complete and return their questionnaires. Another ten (21.3 %) questionnaires were received from the Extension Agents and three (8.3 %) from Rural Development Personnel before the researcher left Iran for the United States on April 29, 1990.

Forty-four out of 47 and 31 out of 37 responses were received from the extension and Rural Development Personnel respectively for a total return rate of 90.4%. There was little concern about the 8.5% non-respondents. Borg and Gall (1983) noted:

If only a small percentage of your subjects failed to respond, this question is not critical. If more than 20 percent are missing, however, it is very likely that most of the findings of the study could have been altered considerably if the non-responding group had returned the questionnaire and in a markedly different manner than the responding group (p. 434).

Population and Sampling

There were five distinct populations for the study: farmers, extension agents in department of Agricultural Extension, rural development personnel in rural Education

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department, rural development directors and extension directors. The procedures used to establish trust and the sample within each of the populations are outlined in Table 4 page 109.

Farmers

The State was divided into four regions. A list of all bakhshes (local political units) was prepared from the state office for each region, asking both agencies for their activities in each bakhsh. The bakhshes that did not have activities with both departments were deleted from the list. Four bakhshes that were representative of the region were selected, then the total villages of the four bakhshes were listed. One fourth of the villages of each bakhsh were randomly selected. A total of 36 villages from the four bakhshes were listed. The total households that were engaged in agriculture in the 36 villages (10007) were listed. A sample of four hundred twenty six (426) was proportionately selected using a random sampling chart.

In the case of the contact farmers, several sampling techniques were studied to select a sample of farmers in the State of Khorrassan that would be representative of the actual population. The farmers were spread out over a large geographic area and the data collection methods were face to face interviews and direct observation of the farmers. A multi-stage sampling technique was utilized to minimize the

number of areas

the sample would

Four hundred

four regions. E

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Borg and Gall (1

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extent, tha

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group being

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Agents

A list of a

Agents was colle

percent of the p

seven out of 93

Extension and Ru

the sample was c

Administrators.

The target

Directors and f

administrators :

number of areas that had to be visited and to insure that the sample would be representative of the farmer population.

Four hundred and four farmers were interviewed from the four regions. For those villages for which lists were not available, the farmers were interviewed randomly according to their availability in the area. The size of the sample was determined on a basis of a standard recommendation of Borg and Gall (1983) who stressed that larger samples were necessary among other things under the following conditions:

When many uncontrolled variables are present as in the study under such conditions, the larger sample is the best solution since it insures to some extent, that the uncontrolled variables will themselves be operating randomly for the different group being studied and therefore will not have a systematic effect upon the results.

Agents

A list of all Extension Agents and Rural Development Agents was collected from the two departments. Fifty percent of the population was randomly selected. Forty-seven out of 93 and 36 out of 72 were selected from Extension and Rural Development respectively. The size of the sample was determined before starting the sampling.

Administrators, Directors and Specialists

The target population for the study were all State Directors and four Assistant Directors. Thirty-nine chief administrators in Shahrestan (county) for both departments.

Collected
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deviation were
characteristics
the Rural Devel

Data were
analysis packag
social sciences

In order to
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them, t-test and
alpha level of
differences.

Data Analysis Procedures

Collected data was compiled, tabulated, and analyzed in accordance with the objectives of the study. Such statistical measures as number, percentage, mean, standard deviation were calculated for use in describing the characteristics of the farmers, the Extension Agents, and the Rural Development Personnel.

Data were analyzed using STAT-PAC (statistical analysis package) and SPSS/PC+(statistical package for social sciences) computer software programs.

In order to compare similarities and differences of perception and attitude of two agencies and linkages between them, t-test and ANOVA were used throughout the study. An alpha level of 0.05 was used as the basis for finding differences.

The research
hypothesis made
research question
between two groups
personnel; and
Rural Development

Research Question

What were
survey population

Research Question

Was there
perception
Directors
Education?

Research Question

Was there
perception
Directors

Research Question

Was there
perception
Directors
and applied

Research Question

Was there
perception
Development
methods applied

Research Questions

The research questions were developed, and several hypothesis made to answer the research questions. These research questions sought to determine the differences between two groups: a) Extension and Rural Development personnel; and b) Directors of Extension and Directors of Rural Development.

Research Question 1

What were the Personal Characteristics of the survey population?

Research Question 2

Was there a significant difference between the perception of the Extension and Rural Development Directors regarding the purpose of Extension Education?

Research Question 3

Was there a significant difference between the perception of the Extension and Rural Development Directors regarding the client served?

Research Question 4

Was there a significant difference between the perception of the Extension and Rural Development Directors regarding the teaching methods preferred and applied by the two departments?

Research Question 5

Was there a significant difference between the perception of the Extension Agents and Rural Development Personnel regarding the teaching methods applied by the two departments?

Research Quest

Was there a
perception
Directors :
especially

Research Questi

Was there
the Extens
Personnel :
farmers?

Research Questi

Was there
Extension
regarding
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Research Questi

Was there
of Extensi
Personnel

Research Questi

What were
to contact
Developmen

Research Questi

What were
to activit
state of K

Research Questi

What were
linkages w
of khorras

Research Question 6

Was there a significant difference between the perception of the Extension and Rural Development Directors regarding assistance to farmers especially?

- a. Small farmers
- b. Large commercial farmers

Research Question 7

Was there a difference between the perception of the Extension Agents and Rural development Personnel regarding Provision of assistance to farmers?

Research Question 8

Was there a difference between the perception of Extension Agents and Rural development Personnel regarding their linkage with agricultural related organization?

Research Question 9

Was there a difference between the perceptions of Extension Agents and the Rural Development Personnel regarding their effectiveness?

Research Question 10

What were the perceptions of farmers in relation to contacts with the Extension Agents and Rural Development personnel?

Research Question 11

What were the perceptions of farmers in relation to activities of the two organizations in the state of Khorassan?

Research Question 12

What were the perception of farmers in relation to linkages with the two organizations in the state of Khorassan?

Research Questi

Was there
Extension
regarding

Research Questi

Was there
perception
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the extens

Research Questi

What were
to the fut
in the sta

Research Questi

Was there
perception
Developmen
the farmer

Research Questi

Was there
perception
Developmen
needs?

Research Question 13

Was there a difference between the perception of Extension and Rural development Directors regarding their agents time allocation?

Research Question 14

Was there a significant difference between the perception of two organizations regarding ways in which the two department contribute to strengthen the extension efforts?

Research Question 15

What were the perceptions of farmers in relation to the future of Agricultural Extension Education in the state of Khorrassan?

Research Question 16

Was there a significant difference between the perception of Extension Agents and Rural Development Personnel regarding services given to the farmer?

Research Question 17

Was there a significant difference between the perception of Extension Agents and Rural Development Personnel regarding their training needs?

The purpose of this

between two extensions

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5) Estab
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6) Compa
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7) Compa
agent
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8) Compa
Agent
relat

CHAPTER V

DATA ANALYSIS

purpose of this study was to examine the differences between two extension organizations. The findings are presented and discussed in eight parts:

- 1) Description of research respondents and selected personal characteristics of the survey population.
- 2) Perception of the Directors of Extension and Directors of Rural Development with respect to each agency's purpose and expectations.
- 3) Types of extension activities and teaching methods followed by the two departments.
- 4) Provision of assistance to farmers by the two departments.
- 5) Established linkages with the research station, agricultural college, agricultural supplies and services such as the farm machinery organization and cooperative agencies by the two departments.
- 6) Comparison of the extent and way in which the two agencies contribute to expanding the knowledge and adoption of improved farm practices among farmers.
- 7) Comparison of the perception of farmers, extension agents and rural development personnel regarding the effectiveness of the extension service extended by the two agencies.
- 8) Comparison of the perceptions of Extension Agents and Rural Development Personnel in relation to their educational needs

Description of
Character

Description of

There were
4 present the
farmers; 43 (8.
Directors; 75
Development per
research station

Table 4.--Sample

Category

Farmer

Directors of Extension

Directors of Rural Development

Extension Agent

Rural Development Personnel

Director of Research Station
Farm Machinery
Organization

Respondents Group

1) Agriculture
Agriculture

PART 1
Description of Research Respondents and Selected Personal
Characteristics of the Survey Population

Description of Research Respondents

There were 528 cases in this study. Data in Table 4 present the respondents by category: 404 (76.5%) were farmers; 43 (8.1%) were Extension and Rural Development Directors; 75 (14.3%) were Extension Agents and Rural Development personnel, and 6 (1.1%) were directors of research stations and farm machinery organizations.

Table 4.--Sample size, and the rate of response

Category	Popula- tion	Sample Number	Respond Number	Percent (%)
Farmer	10007	426	404	94.8
Directors of Ex- tension	23	23	23	100.0
Directors of Rural Development	22	22	20	90.9
Extension Agent	94	47	44	93.6
Rural Development Personnel	73	37	31	83.8
Director of Re- search Station & Farm Machinery Organization	9	9	6	66.7

Respondents Group Description

- 1) Agriculture Extension Agents from the Department of Agriculture (Tarviege).

- 2) Rural Development
Department
- 3) Directors of
(county)
- 4) Directors of
the Ostan
- 5) Farmers from

For each group
important characteristics
following
subsections.

Directors of Extension

Ostan (State)
Directors (Chief)
The State Extension
the state and share
program. This program
all levels. Duties
extension funds

Sharestan (Districts)

The State Extension
(districts) for
Sharestan, the district
for the coordination
in terms of extension

- 2) Rural Development Personnel from the Rural Education Department of Jihad Sazandeghi (Amozash'h Rosta)
- 3) Directors of the two agencies in the Sharestan (county)
- 4) Directors and their assistants of the two agencies in the Ostan (state).
- 5) Farmers from the state.

For each group mentioned above, a description of important characteristics has been presented in the following subsections.

Directors of Extension and Rural Development

Ostan (State) Directors and Sharestan (District) Directors (Chief Administrators) were included in the study. The State Extension Director was the leader of extension in the state and she/he was responsible for the state extension program. This person employed or recommended employment at all levels. Duties also included the administration of extension funds and approval of all publications.

Sharestan (District) Directors (Chief Administrators)

The State has been divided into seventeen Sharestan (districts) for the purpose of supervision. In each Sharestan, the district agriculture director was responsible for the coordination of the work of all district supervisors in terms of extension, crops, pesticides and other practices.

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Educational Lev

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Director respon

diploma, one (4

18(78.3%) had u

Extension Direc

Rural Developme

Data in Tal

of Rural Develop

diplomas, five

(42.1%) of the 1

degrees.

Research Direct

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director respon

of the Research

Personal Characteristics of the Survey Population.**Educational Level**

The data in Table 5 show that of the 23 Extension Director respondents, one (4.3%) had a regular high school diploma, one (4.3%) had a college degree, over two thirds, 18(78.3%) had university degrees, and three (13%) of Extension Directors had Masters' Degrees.

Rural Development Directors

Data in Table 5 indicate that of nineteen respondents of Rural Development Directors, six (31.6%) had high school diplomas, five (26.3%) had college degrees, and eight (42.1%) of the Rural Development Directors had university degrees.

Research Director

Data in Table 5 show five (83.3%) of the research director respondents had Bachelor degrees, and one (16.7%) of the Research Directors had a Masters degree.

Table 5.--Education
Directors

Education

Diploma
College degree
B.S.
M.S.

Total

Experience Characteristics

The data in

directors (50%)

Thirteen (72.2%)

chief administrative

Six (27.2%)

years of experience

Rural Development

years. Five (2)

16 years experience

Table 5.--Educational Level of Extension, Rural Development Directors

Education	Extension Director	Rural Development Director		
	No	(%)	No	(%)
Diploma	01	04.3	6	31.6
College degree	01	04.3	5	26.3
B.S.	18	78.3	8	42.1
M.S.	03	13.0	0	00.0
Total	<u>23</u>	<u>100</u>	<u>19</u>	<u>100</u>

Experience Characteristic of Director (Chief Administrator)

The data in Table 6 shows one half of the extension directors (50%) had between one and five years' experience. Thirteen (72.2%) of the rural development directors and chief administrators had 1-5 years of experience.

Six (27.2%) Extension Directors had between 6 to 15 years of experience in their jobs. Only five (27.8%) of the Rural Development Directors had experience between 6 to 10 years. Five (22.8%) of the Extension Directors had more than 16 years experience.

Table 6.--Expe
Development Di

Years of
Experience

1 - 5
6 -10
11-15
16-20
21-up

Total

Activities of

Data in T
in the year 19
respondents, 1
courses/ works
Development.
field day part
and five (29.4
Over three fif
(61.1%) were f
(33.3%) were f
Directors repo
(46.4%) for ea
the group tou
and five (31.3

Table 6.--Experience Characteristic of Extension and Rural Development Directors in the state of Khorrassan.

Years of Experience	Extension Director		Rural Development Director	
	No	(%)	No	(%)
1 - 5	11	50.0	13	72.2
6 -10	03	13.6	05	27.8
11-15	03	13.6	NA	NA
16-20	04	18.2	NA	NA
21-up	01	04.6	NA	NA
Total	<u>22</u>	<u>100</u>	<u>18</u>	<u>100</u>

Activities of Extension and Rural Development Directors

Data in Table 7 show the extension activities completed in the year 1988. Of the Extension and Rural development respondents, 18 (52.9%) participated in farm training courses/ workshop from Extension and 13 (38.2%) from Rural Development. Over three- fifths 11 (64.7%) of the farm field day participants were from the Extension Department, and five (29.4%) were from the Rural Development Department. Over three fifths of the radio listening group activities 11 (61.1%) were from the Rural Development Department and six (33.3%) were from the Extension Department. Both groups of Directors reported the same amount of farmer contact: 13 (46.4%) for each department. Over three fifths (62.5%) of the group tour activities were from Extension Directors, and five (31.3%) were from Rural Development Department.

Table 7.--Acti
Directors durin

Activities

Farm training
Courses/worksh

Farmers field

Radio listenin
group

Farmer contact

Group tours

Farmers Charac

Four hund
information ab

1) Person

2) Percep
advice

3) Percep
Depal

4) Percep

5) Percep
extens

Farmers' Age

Data in Te

Table 7.--Activities of Extension and Rural Development Directors during 1988

Activities	Extension Director N = 23		Rural Development Director N = 20	
	No	(%)	No	(%)
Farm training Courses/workshop	18	58.6	13	41.94
Farmers field days	11	68.8	05	31.20
Radio listening group	06	35.3	11	64.7
Farmer contacts	13	50.0	13	50.0
Group tours	10	66.6	05	33.4

Farmers Characteristics

Four hundred and four farmers responded and provided information about the following characteristics:

- 1) Personal characteristics.
- 2) Perception related to expectation and areas of advice.
- 3) Perception related to linkage with the Extension Department and Rural Development Department.
- 4) Perception of the future of extension activities.
- 5) Perception of the relative effectiveness of extension activities.

Farmers' Age

Data in Table 8 demonstrate 220 (54.4%) of the farmers

were fifty years
between the a
between the ag
years old.

Gender and Mar

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population wer
from this popu
(.5%) were sin

Table 8.--Class
Age and Gender

Characteristic

Age
29 years and u
30-39 years
40-49 years
50 years and o

Gender
Male
Female

Marital Status
Married
Single

were fifty years of age and over. Sixty five (16.1%) were between the ages of 40 and 49. Seventy (17.33%) were between the ages of 30 and 39, and 49 (12.2%) were under 29 years old.

Gender and Marital Status of Farmers

Three hundred ninety nine (98.80 %) of the survey population were male, and five (1.20%) were female. Also, from this population, 402 (99.5%) were married and two (.5%) were single.

Table 8.--Classification of Farmers According to Their Age and Gender

Characteristics	Number	Percent
<u>Age</u>		
29 years and under	49	12.12
30-39 years	70	17.33
40-49 years	65	16.10
50 years and over	220	54.45
Total	404	100.00
<u>Gender</u>		
Male	399	98.80
Female	5	1.20
Total	404	100.00
<u>Marital Status</u>		
Married	402	99.50
Single	002	00.50
Total	404	100.00

Type of Owners

Private o

tenure in Iran

Table 9 show t

respondents di

they rented.

and rented far

Regarding

responded to t

(24.3%) of the

Sixty one (15.

tomans or less

farmers had an

year.

Table 9.--Class
of Ownership an

Characteristics

Ownership

Own farm

Rented farm

Rent and Own

Income in 1989

20,000 tomans o

21,000-40,000 t

41,000-60,000 t

61,000-80,000 t

81,000-100,000

100,000 tomans

Cases Missing

Type of Ownership and Income

Private ownership was the predominant feature of land tenure in Iran and in the state of Khorrassan, the data in Table 9 show that the majority 310 (79.2%) of the farmer respondents did own their farm and 64 (15.8 %) indicated they rented. Twenty (5.0 %) of the farmers had both owned and rented farming operations.

Regarding income 403 (99.7%) of the surveyed population responded to this question. Data in Table 10 reveals that 98 (24.3%) of the farmers had income over 100,000.00 Tomans. Sixty one (15.1%) of the farmers had an income of 20,000 tomans or less. Two hundred forty four (60.4%) of the farmers had an income between 21,000 and 80,000 tomans per year.

Table 9.--Classification of Farmers According to Their Type of Ownership and Income

Characteristics	Number	Percent
<u>Ownership</u>		
Own farm	10	79.2
Rented farm	64	15.8
Rent and Own	20	5.0
Total	394	100.0
<u>Income in 1989</u>		
20,000 tomans or less	61	15.10
21,000-40,000 tomans	68	16.80
41,000-60,000 tomans	78	19.30
61,000-80,000 tomans	56	13.90
81,000-100,000 tomans	42	10.40
100,000 tomans or more	98	24.30
Cases Missing	1	.20
Total	404	100.0

Educational Le

The educa

10 show that 2

education. Fo

able to read.

had no educati

educational le

(23.8%) had an

years, ten (3.

to nine years

college or B.

Table 10. Cla

Educational Le

Educational le

No Education

Just Reading

1-3 years

4-6 years

7-9 years

9-12 years

College degree

B.S. and up

No Response

Size of Farm

The data i

farmers 201 (49

Ninety eight (2

hectares, 50 (1

Educational Level of Farmers

The educational level of farmers varied. Data in Table 10 show that 204 (50.70%) of the farmers did not have any education. Forty eight (11.8%) of the farmers were only able to read. The data show two hundred fifty two (62.5%) had no educational training. Thirty eight (9.4%) had an educational level of between one to three years. Ninety six (23.8%) had an educational level of between four to six years, ten (3.8%) had an educational level of between seven to nine years, and two (.5%) of the farmers had a two year college or B.S degree.

Table 10. Classification of Farmers According to Their Educational Level

Educational level	Number	Percent(%)
No Education	204	50.70
Just Reading	48	11.80
1-3 years	38	19.40
4-6 years	96	23.80
7-9 years	16	3.80
9-12 years	0	00.00
College degree	1	.25
B.S. and up	1	.25
No Response	0	.00
Total	404	100.00

Size of Farm

The data in Table 11 show that about one half of the farmers 201 (49.4%) had farms up to five hectares in size. Ninety eight (24.3%) of the farms sizes were from six to ten hectares, 50 (12.4%) of farmers had farm from 11 to 20

hectares in si

13 (3.2%) were

Table 11.--Cla
Farm Size

Category

Up to 5 Hectar
6-10 Hectares
11-20 Hectares
21-40 Hectares
41 Hectares or
missing

Extension

Extension

Rural Develop

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marital status

in the service

methods of teach

station, 6) sub

organization, 8

services, 9) ne

organizations.

Forty seven

for the study.

also selected a

hectares in size, 29 (7.2%) were from 21 to 40 hectares, and 13 (3.2%) were 40 hectares or larger in size.

Table 11.--Classification of Farmers According to Their Farm Size

Category	Number No	Percent (%)
Up to 5 Hectares	201	49.4
6-10 Hectares	98	24.3
11-20 Hectares	50	12.4
21-40 Hectares	29	7.2
41 Hectares or more	13	3.2
missing	13	3.20
Total	404	100

Extension Agents and Rural Development Personnel Characteristics

Extension Agents in the Department of Agriculture and Rural Development (Jihad) were asked to provide information about 1) personal characteristics such as (age, gender, marital status, agency for whom they are working, position in the service, 2) personal competency , 3) activities, 4) methods of teaching used, 5) communication with research station, 6) subject area covered, 7) perception related to organization, 8) perception related to effectiveness of services, 9) need of training , 10) linkage with other organizations. and 11) perception of effectiveness.

Forty seven Extension Agents were selected as a sample for the study. Thirty- six Rural Development Personnel were also selected as a sample for the study. Forty four out of

47 (93.6%) of
questionnaire
31 (86%) out of
respondents were

Age of Extension

Data in Table
the Department
of 26 and 44 (44%)
largest with 26
to 54 age group

Age of Rural Development

Data in Table
respondents were
twenty eight (28%)
largest with 26
age group with

Gender of Extension

Data in Table
the Extension
Development personnel

47 (93.6%) of the Extension Agents responded to the questionnaire . From the Department of Rural Development, 31 (86%) out of 36 responded to the questionnaire . All respondents were male.

Age of Extension Agents.

Data in Table 12 illustrate that Extension Agents in the Department of Agriculture were mainly between the ages of 26 and 44 (70.5%), with the 26-29 group being the largest with twelve (27.3%). The smallest group was the 50 to 54 age group with two (4.5%).

Age of Rural Development Personnel

Data in Table 12 also indicated that Rural Development respondents were mainly between the ages of 26 and 34. twenty eight (80.4 %), with the 30-34 group being the largest with 22 (71.0%). The smallest group was the 35-39 age group with one (3.2%).

Gender of Extension Agent and Rural Development Personnel

Data in Table 12 also illustrates that all 44 (100%) of the Extension Agents and all 31 (100%) of the Rural Development personnel were male.

Table 12.--Characteristics of Extension Agents and Rural Development Personnel

Characteristic

Age

25 years or younger
 26-29 years
 30-34 years
 35-39 years
 40-44 years
 45-49 years
 50-54 years
 55 years or more

Gender

Male
 Female

Marital Status

Data in 1960

Extension Agents

Personnel were

single .

Also 44

the Extension

Development Division

Table 12.--Characteristics of Agricultural Extension Agents and Rural Development Personnel

Characteristics	Extension Agent		Rural Development Personnel	
	No	(%)	No	(%)
<u>Age</u>				
25 years or younger	6	13.6	2	6.4
26-29 years	12	27.3	6	9.4
30-34 years	5	11.4	22	71.0
35-39 years	4	9.1	1	3.2
40-44 years	10	22.7	0	NA
45-49 years	5	11.4	0	NA
50-54 years	2	4.5	0	NA
55 years or more	0	0.0	0	NA
<u>Gender</u>				
Male	44	100	31	100
Female	0	0	0	0

Marital Status ,Title Position of the Agent.

Data in Table 13 indicated that 43 (97.7%) of the Extension Agents and 31 (100%) of the Rural Development Personnel were married. Only one (2.3%) Extension Agent was single .

Also 44 (58.6%) of the surveyed population were from the Extension Department and 31 (41.4%) were from Rural Development Department.

Characteristic

Married

Title/Position

Extension Agent

Personnel

Specialty of 1

Data in :

Extension Age:

17 (54.8%) Ru

general agric

Rural De

extension and

Agents. One

Personnel com

Agents respect

of the Extens.

Personnel had

(19.4%) of the

to this quest.

Table 13.--Characteristics of Agricultural Extension Agent and Rural Development Personnel

Characteristics	Extension Agent		Rural Development Personnel	
	No	(%)	No	(%)
<u>Marital Status</u>				
Married	43	97.7	31	100.0
Single	1	2.3	0	0.0
Divorced	0	0.0	0	0.0
<u>Title/Position:</u>				
Extension Agents & Rural Development Personnel	44	58.6	31	041.4

Specialty of Extension Agent and Rural Development.

Data in Table 14 indicate that 37 (84%) of the Extension Agents had a specialty in general agriculture and 17 (54.8%) Rural Development Personnel had a specialty in general agriculture.

Rural Development Personnel had more specialties in extension and farm machinery areas than the Extension Agents. One (3.2%) and three (9.7%) Rural Development Personnel compared to one (2.3%) and two (4.7%) Extension Agents respectively. The data also shows that four (9.1%) of the Extension Agents and four (12.9%) Rural Development Personnel had specialties other than agriculture. Six (19.4%) of the Rural Development Personnel did not respond to this question.

Table 14.--Specialty
and Rural Development

Specialty

General Agriculture
Extension
Machinery
Other
(social service)
No Response

Total

Data in 7

Extension Agents

personnel responsible

Profession".

Extension Agents

24 years completed

Development Projects

Table 15.--Years
Extension Agents

Years

1-4 years
5-9 years
10-14 years
15-19 years
20-24 years
25 years or more
No response

Total

Table 14.--Specialties of Agricultural Extension Agents and Rural Development Personnel

Specialty	Extension Agent		Rural Development Personnel	
	No	(%)	No	(%)
General Agriculture	37	84.1	17	54.8
Extension	1	2.3	1	3.2
Machinery	2	4.5	3	9.7
Other	4	9.1	4	12.9
(social services)				
No Response	0	0.0	6	19.4
Total	44	100	31	100

Data in Table 15 demonstrate that 44 (100%) of the Extension Agents and 25 (80.6%) of the Rural development personnel responded to the statement "Years in Extension Profession". Data in Table 16 show that 21 (47.7%) Extension Agents had experience in extension between 15 to 24 years compared to zero experience at that level by Rural Development Personnel.

Table 15.--Years of Extension Profession of Agricultural Extension Agent and Rural Development Personnel

Years	Extension Agent		Rural Development	
	No	(%)	No	(%)
1-4 years	5	11.4	6	19.4
5-9 years	10	2.7	14	45.1
10-14 years	3	6.8	5	16.1
15-19 years	10	22.7	0	0.0
20-24 years	11	25.0	0	0.0
25 years or more	5	11.4	0	0.0
No response	0	0.0	6	19.4
Total	44	100	31	100

Educational Le
Personnel

Data in 7
Agents 28 (68.4%)
had two years
degree. Thirt
diploma such a
sciences.

Data in 7
Personnel resp
other high sch
agriculture di
Twelve (37.2%)

Table 16.--Edu
Agent and the

Group
Category

B.S. in Extens
B.S. in Genera
Agriculture

College degree

B.S. in Farm
Machinery

Diploma in
Agriculture

Other Diploma
No Response

Total

Educational Level of Extension Agent and Rural Development Personnel

Data in Table 16 show that the majority of Extension Agents 28 (68.6%) had an agricultural diploma, one (2.3%) had two years of college, and one (2.3%) had a University degree. Thirteen (29.5%) of the Extension Agents had other diploma such as marketing, social science and natural sciences.

Data in Table 16 show that 19 Rural Development Personnel responded to this item. Fourteen (45.2%) had other high school diplomas. Only four (12.9%) had an agriculture diploma and one (3.2%) had a University degree. Twelve (37.2%) did not respond to this question.

Table 16.--Educational Level of the Agricultural Extension Agent and the Rural Development Personnel

Group Category	Extension Agent		Rural Development	
	No	(%)	No	(%)
B.S, in Extension	0	0.0	1	3.2
B.S. in General Agriculture	0	0.0	0	0.0
College degree	1	2.3	0	0.0
B.S. in Farm Machinery	1	2.3	0	0.0
Diploma in Agriculture	28	63.6	4	12.9
Other Diploma	13	29.5	14	45.2
No Response	1	2.3	12	38.7
Total	44	100	31	100

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PART 2
EXTENSION PURPOSE

The hypotheses developed in chapter 4 were converted to null hypotheses in order to test the significant differences between the groups. In the following discussion, all hypotheses have been converted to their null hypotheses for analysis.

Director Perception.

The null hypothesis was used to test for differences between the two Directors and stated that there was no difference between the directors' perceptions and each of the educational purposes of extension.

$$H_0: \mu_1 = \mu_2$$

The null hypotheses was tested using the t-test to determine whether differences between the educational purpose of extension and the perceptions of Extension and Rural Development Directors were statistically significant.

The data in Appendix A-1 indicated that all directors, (Extension and Rural Development) positively supported (agree and strongly agree) the educational statements and there were no significant differences between the groups. The statistical result are summarized in Table 17. Since no significant differences between the two groups were detected the null hypotheses was accepted.

Table 17.--The
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3. Increase
4. Hands on
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6. Support
7. Assist f
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8. Help far
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10. Increase
11. Support
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12. Prepare
13. Assess t

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Table 17.--The Result of Null Hypotheses in Relation to the Educational Purpose of Extension

Ho = $\mu_1 = \mu_2$ There was no difference between the two Directors in the Educational purpose of extension	
R = Reject the null	NR = Fail to reject the null
Purpose of Extension	Result of Ho
1. Coordination of needs and research	NR
2. Transfer of technology and innovation	NR
3. Increase knowledge and skills	NR
4. Hands on Education	NR
5. Assistance with training and visits	NR
6. Support the people's growth and change	NR
7. Assist farmers in obtaining improved inputs	NR
8. Help farmers to help themselves	NR
9. Link local organizations	NR
10. Increase Production	NR
11. Support free input facilities (such as fertilizers, equip. etc)	NR
12. Prepare working facilities	NR
13. Assess the needs of the farmers	NR

Directors' Perception in Relation to Extension Purposes (Clients Served)

The null hypothesis was used to test for significance. The hypothesis stated that there was no difference between the directors' perception and each of the purposes of extension (clients served).

$$H_0: \mu_1 = \mu_2$$

The mean judgements of Extension and Rural Development Directors were tested using the t-test to determine whether differences between the directors' perceptions and each of the extension purposes (clients served) were statistically significant between the two groups. The results of the t-test from the nine statements on extension purpose (clients

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Appendix A-2)

found to differ

clients served

Table 18. The

for all but five

The five purposes

significantly

below.

served) preferred by the two directors were reported (see Appendix A-2). Five statements of purpose of extension were found to differ significantly between the two groups on the clients served. The statistical results are summarized in Table 18. Therefore the null hypothesis was not rejected for all but five of the purposes of extension clients serve. The five purposes of extension (clients) which did differ significantly are presented in TABLE 19 and are discussed below.

Table 18.--The
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Purpose of Ex

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Table 18.--The Result of Analysis of Null Hypotheses in Relation to Clients Served

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the two Directors in the purpose of Extension (clients served).	
R = Reject the null	NR = Fail to reject the null

Purpose of Extension	Result of H_0
1. Serving large scale farmers	R*
2. Serving small scale farmers	R*
3. Serving landless farmers	NR
4. Serving farmers growing cash crops	NR
5. Serving farmers dealing with forage	NR
6. Serving farmers dealing with vegetables	R*
7. Serving horticulture farmers	R*
8. Serving farmers dealing with irrigation	NR
9. serving dry land farmers	R*

Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:
 5 = strongly agree 4 = agree 3 = neutral 2 = disagree
 1 = strongly disagree. *significant at $\alpha \leq .05$

Data in Table 19 indicate both groups supported the statement "Serving large scale farmers". However, the Rural Development Directors judged these statement to be significantly less important with mean scores of 3.00 than

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the Extension Director with mean scores of 3.77. The differences were significant at the 0.03 level. On the statement "Serving small scale farmers", the Rural Development Directors judged this purpose to be significantly more important with a mean score of 4.50 than the Extension Directors with a mean score of 3.65. The differences were significant at the 0.01 level.

On the statement "Serving farmers dealing with vegetables crops", the Extension Directors judged this practice to be significantly more important, with a mean score of 2.43, than the Rural Development Directors with mean score of 1.40. The differences were significant at the 0.00 level.

Data in Table 20 illustrate that the Extension Directors judged the statement, "Serving farmers dealing with horticulture ", as significantly more important, with a mean scores of 3.09, than the Rural Development Directors with a mean score of 1.7. The differences were significant at the 0.00 level.

On the statement "Serving farmers dealing with dry land farms", the Extension Directors judged this practice to be less significant, with a mean score of 2.64, than the Rural Development Directors with mean score of 3.75. The difference were significant at the 0.02 level.

Table 19.--Pe
of Extension

Statements

1. Serving l
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2. Serving s
scale far
6. Serving f
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7. Serving h
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9. Serving d
farmers

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3 = neutral
1 = strongly

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Table 19.--Perception of Extension Director in the Purpose of Extension (clients served)

Statements	Extension Directors N = 23	Rural deve- lopment Dir N = 20	DF	t	p
	Mean S.D	Mean S.D			
1. Serving large scale farmers	3.77 1.17	3.00 1.34	40	1.95*	0.03
2. Serving small scale farmers	3.65 1.46	4.50 0.81	41	2.25*	0.01
6. Serving farmers dealing with vegetables	2.43 1.35	1.40 0.58	41	3.11*	0.00
7. Serving horti- culture farmers	3.09 1.35	1.70 0.90	41	3.81*	0.00
9. Serving dry land farmers	2.64 1.64	3.75 1.64	40	2.23*	0.02

Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:

5 = strongly agree 4 = agree

3 = neutral 2 = disagree

1 = strongly disagree. *significant at $\alpha \leq .05$

Director Perception in Relation to Teaching Methods

The null hypotheses stated there was no difference between the mean judgement of each teaching method preferred by the two Directors.

$$\alpha = 0.05$$

$$H_0: \mu_1 = \mu_2$$

The null hypothesis was tested using the t-test to determine whether there were differences between directors perceptions and each of the teaching methods used by the two departments. The results of the t-test from the 17 statements on the teaching methods preferred by the two

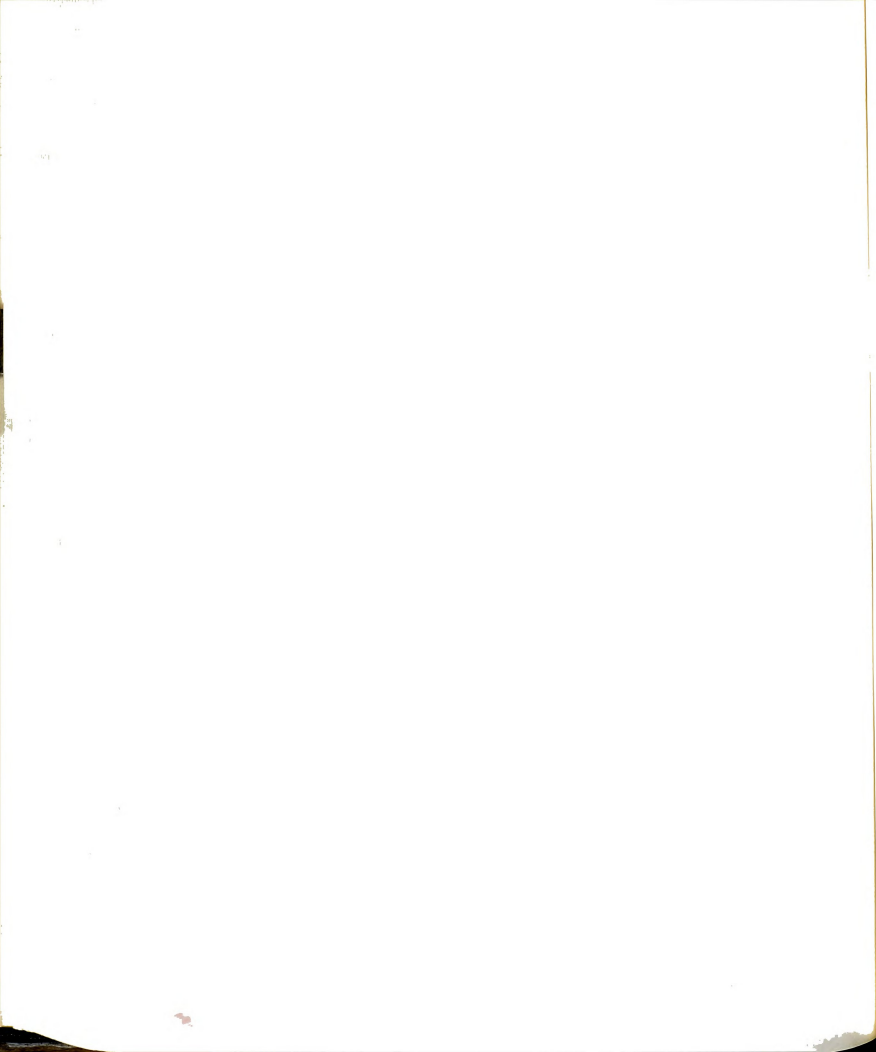
directors are reported in Appendix A-3. Thirteen methods were found not to be significantly different between the two groups. The other four statements of teaching methods were found to differ significantly between Extension and Rural Development Directors on teaching methods. The four teaching methods which did differ significantly are presented in Table 20 and are discussed below. The statistical results are summarized in Table 21.

Data in Table 20 indicate both groups did not support the statement "Importance of using newspapers ", as a teaching method. The Rural Development Directors judged these statements to be less significant with mean scores of 2.20 than the Extension Directors with mean scores of 2.7 with a significance level of 0.05.

On the statement "Importance of using the telephone", as a teaching method, the Rural Development Director also judged this statement to be less significant with mean scores of 1.7 than the Extension Director with a mean score of 2.9 with a significance level of 0.00.

On the statement "Importance of office calls as a teaching method", the Extension Directors judged this practice to be significantly more important, with a mean score of 3.5, than the Rural Development Director with a mean score of 2.2 with a significant level of 0.00.

On the statement, "Importance of using group meetings as a teaching method", the Extension Directors judged this



practice to be significantly more important, with a mean score of 4.1, compared to the Rural Development Directors with a mean score of 3.6. The significant level was 0.03.

Table 20. Perception of Directors in Relation to Teaching Methods Preferred

Teaching Method	Extension Director N = 23	Rural development Director N = 20	DF	t	p
	Mean S.D	Mean S.D			
Importance of Using Newspapers as a Teach- ing method.	2.7 1.36	2.20 0.74	41	1.70*	0.05
Importance of office call as a teaching Method.	3.5 1.20	2.2 0.83	41	3.83*	0.00
Importance of using telephone as a- teaching method.	2.9 1.30	1.7 0.78	41	3.44*	0.00
Group teaching method	4.1 0.80	3.6 1.07	41	1.98*	0.03

Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:

5 = Very important 4 = important 3 = neutral
2 = not important 1 = Not very important

*significant at $\alpha \leq .05$

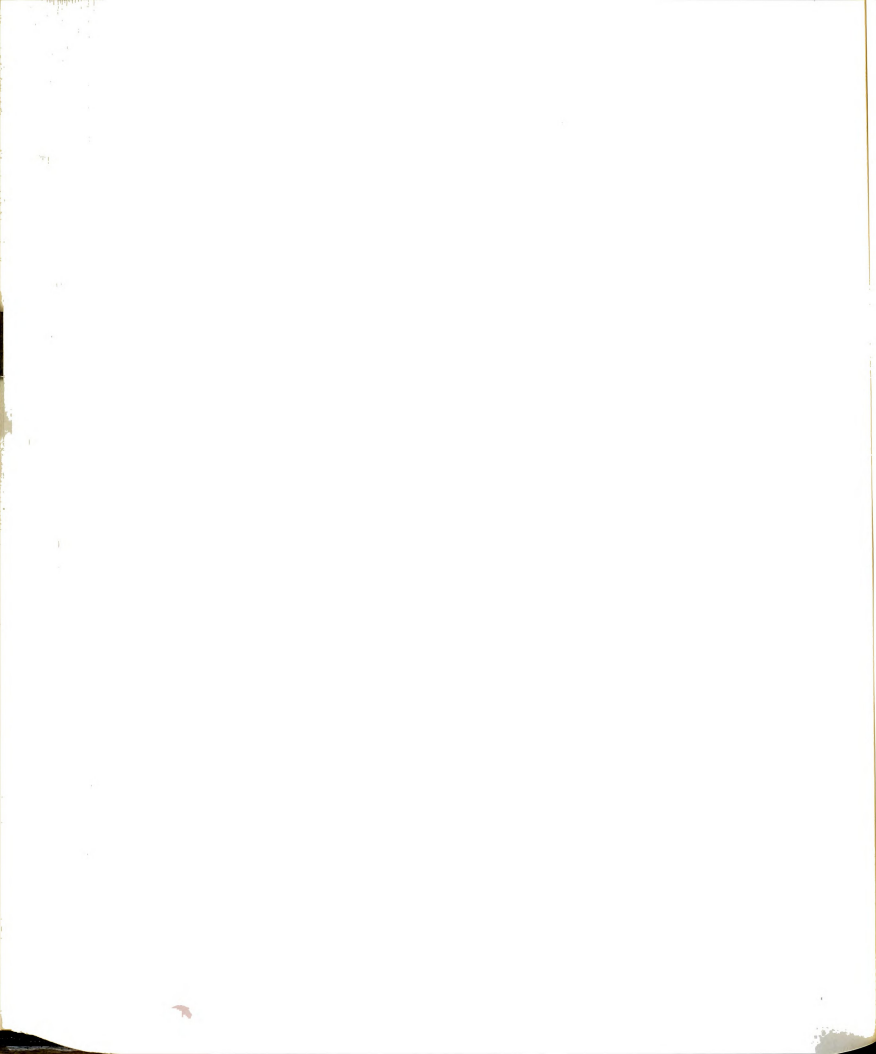


Table 21. The Results of Analysis of Null Hypotheses in Relation to Teaching Methods(Directors perception)

$$\alpha = 0.05$$

$$H_0 = \mu_1 = \mu_2$$

There was no difference between the two Directors in relation to teaching methods.

R = Reject the null

NR = Fail to reject the null

Purpose of Extension	Result of H_0
<u>Materials and media</u>	
Importance of using Posters as a teaching method	NR
Importance of using T.V. as a teaching method	NR
Importance of using Newspapers as a teaching method	R*
Importance of using radio as a teaching Method	NR
Importance of showing Film as a teaching method	NR
Using fair exhibits as a teaching method	NR
Other teaching method (role play ,theater	NR
<u>Individual methods</u>	
Importance of farm visit as a teaching method	NR
Importance of office call as a teaching method	R*
Importance of using telephone as a teaching method	R*



Table 21. Continued

Purpose of Extension	Result of Ho
Using letters as a as a teaching method	NR
<u>Group methods</u>	
Important of ag expo as a teaching method	NR
Important of farmer classes as a teaching method	NR
Important of ag days as a teaching method	NR
Group teaching method	R*
Field trips	NR
Group projects as a teaching method	NR

* Significant differences were found.

Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:

5 = strongly agree 4 = agree

3 = neutral 2 = disagree, 1 = strongly agree.

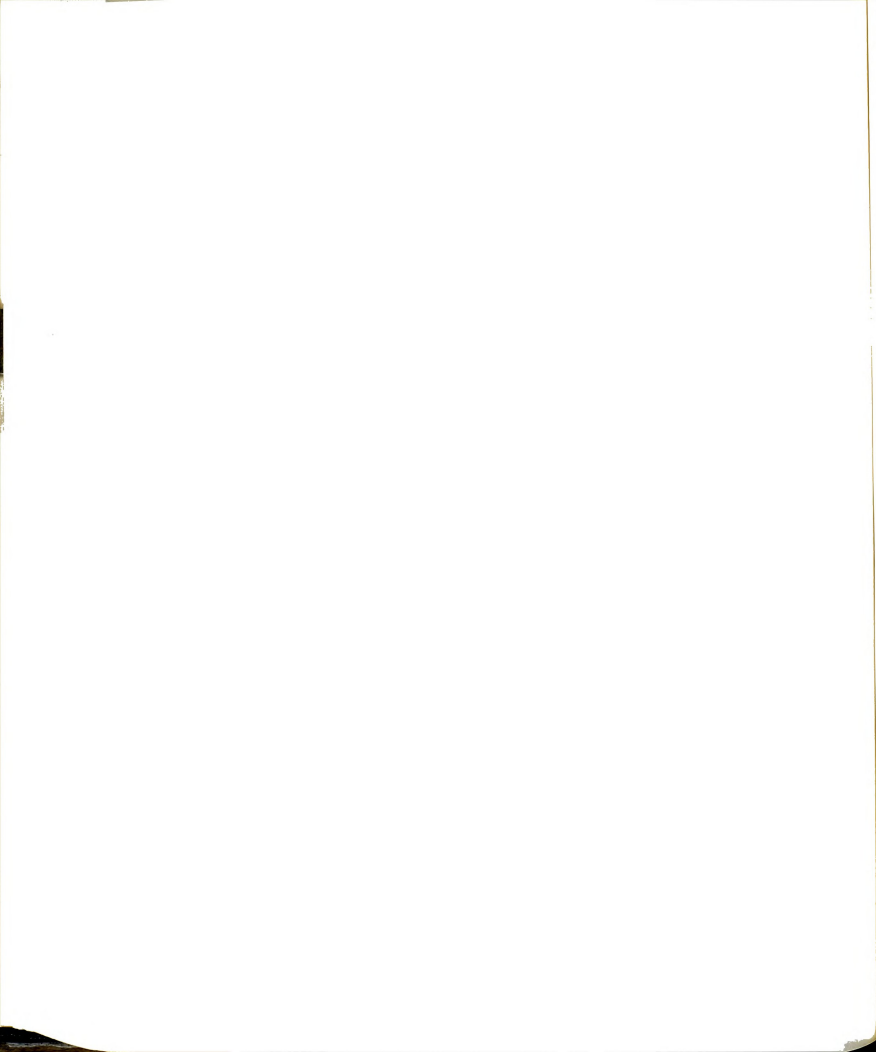
*significant at $\alpha \leq .05$

Perception of Extension Agents and Rural Development
Directors in Relation to the Importance of Subject Areas

There is no significant difference between the mean judgement on each subject areas preferred by the two directors (Extension and Rural Development).

$$H_0: \mu_1 = \mu_2$$

The hypothesis was tested using the t-test to determine whether differences between the variables of subject areas preferred by the two Directors were statistically significant between the two groups (Extension and Rural

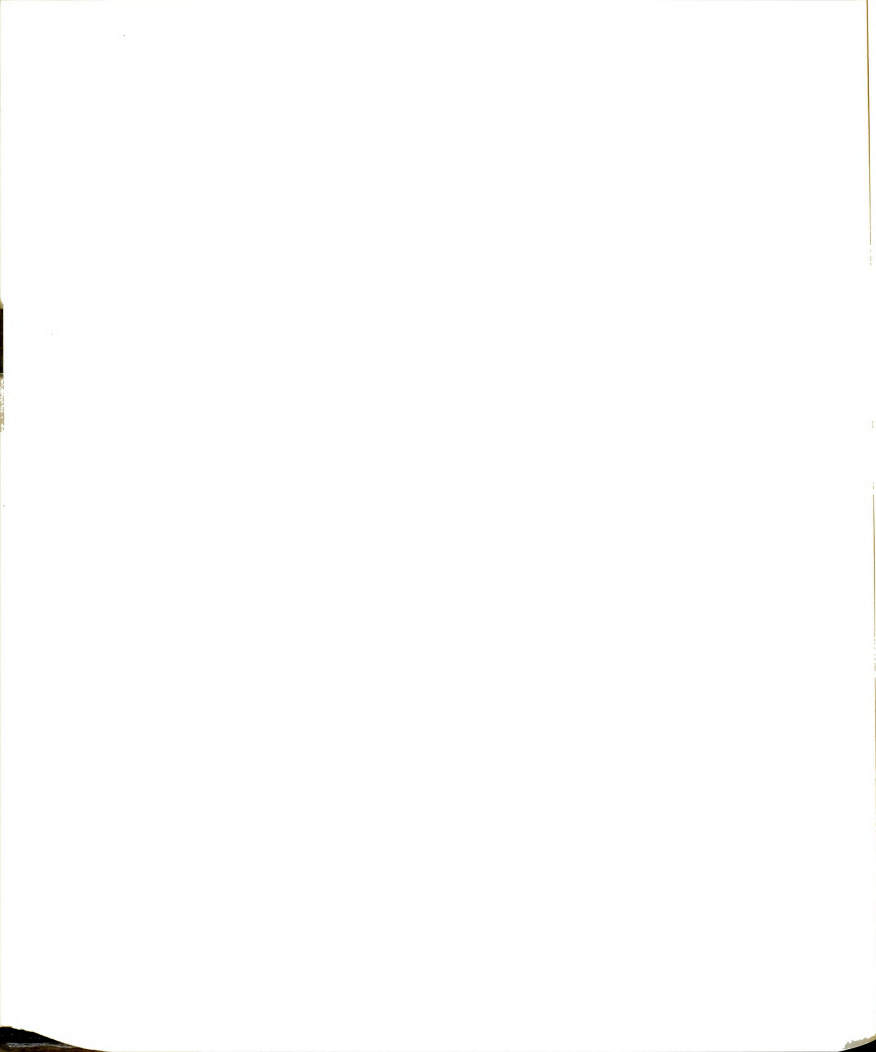


Development Directors).

The results of the t-test from the 22 statements on the subject areas by the two directors are reported in Appendix A-4. Eight subject areas were found to differ significantly between the two groups. The eight subjects areas which did differ significantly are presented in Table 22 and discussed below. The statistical results are summarized in Table 23. Therefore the null hypothesis was not rejected for all but thirteen of the subject areas.

Data in Table 22 illustrate that the Extension Directors judged the subject areas "fertilizer, vegetables, and fruit trees", significantly more important with mean scores of 4.61 (fertilizer), 3.30 (vegetables), and 3.48 (fruit trees), than the Rural Development Directors with the mean score of 4.1 (fertilizer), 1.70 (vegetables), and 1.75 (fruit trees). The differences were significant at the 0.01 for fertilizer and 0.00 level for vegetables and fruit trees.

On the subject areas, "dry land farming, tillage practice, tillage equipment, credit, and forage crops", Rural Development Directors judged these subject areas significantly more important, with the mean score of 4.10 (dry land farming), 4.45 (tillage practice), 4.65 (tillage equipment), 4.20 (credit), and 4.40 (forage crops), than the Extension Directors' mean score of 3.00 (dry land farming), 3.83 (tillage practice), 4.17 (tillage equipment),



3.09 (credit), and 3.83 (forage crops). The differences were significant at the 0.01 level for dry land farming, 0.04 level for tillage practice, 0.05 level for tillage equipment, 0.00 level for credit; for forage crops the differences were significant at the 0.03 level.

Table 22.--Directors Perception in Relation of Importance of Areas Preferred by Their Agencies.

Areas	Groups	No	Mean	S.D	t	p
Dry land farming	Group 1	23	3.00	1.22	2.6*	0.01
	Group 2	20	4.10	1.45		
Fertili- zer.	Group 1	23	4.61	0.57	2.43*	0.01
	Group 2	20	4.10	0.77		
Vege- tables	Group 1	23	3.30	0.90	5.01*	0.00
	Group 2	20	1.70	1.20		
Fruit trees	Group 1	23	3.48	0.83	5.37*	0.00
	Group 2	20	1.75	1.22		
Tillage practice	Group 1	23	3.83	1.27	1.81*	0.04
	Group 2	20	4.45	0.86		
Tillage practice	Group 1	23	4.17	1.01	1.70*	0.05
	Group 2	20	4.65	0.79		
Credit	Group 1	23	3.09	1.28	2.98*	0.00
	Group 2	20	4.20	1.08		
Forage crop	Group 1	23	3.83	0.92	2.00*	0.03
	Group 2	20	4.40	0.92		

Group 1 = Extension Director

Group 2 = Rural Development Director

*significant at $\alpha \leq .05$

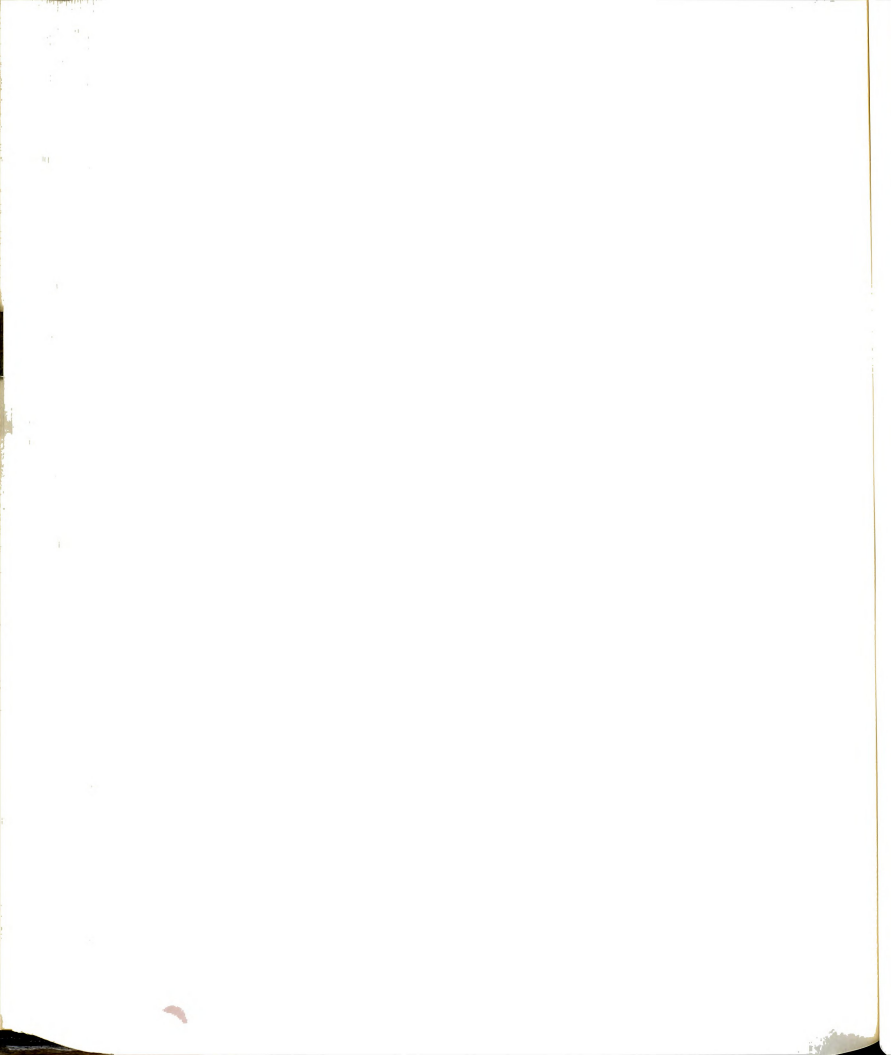
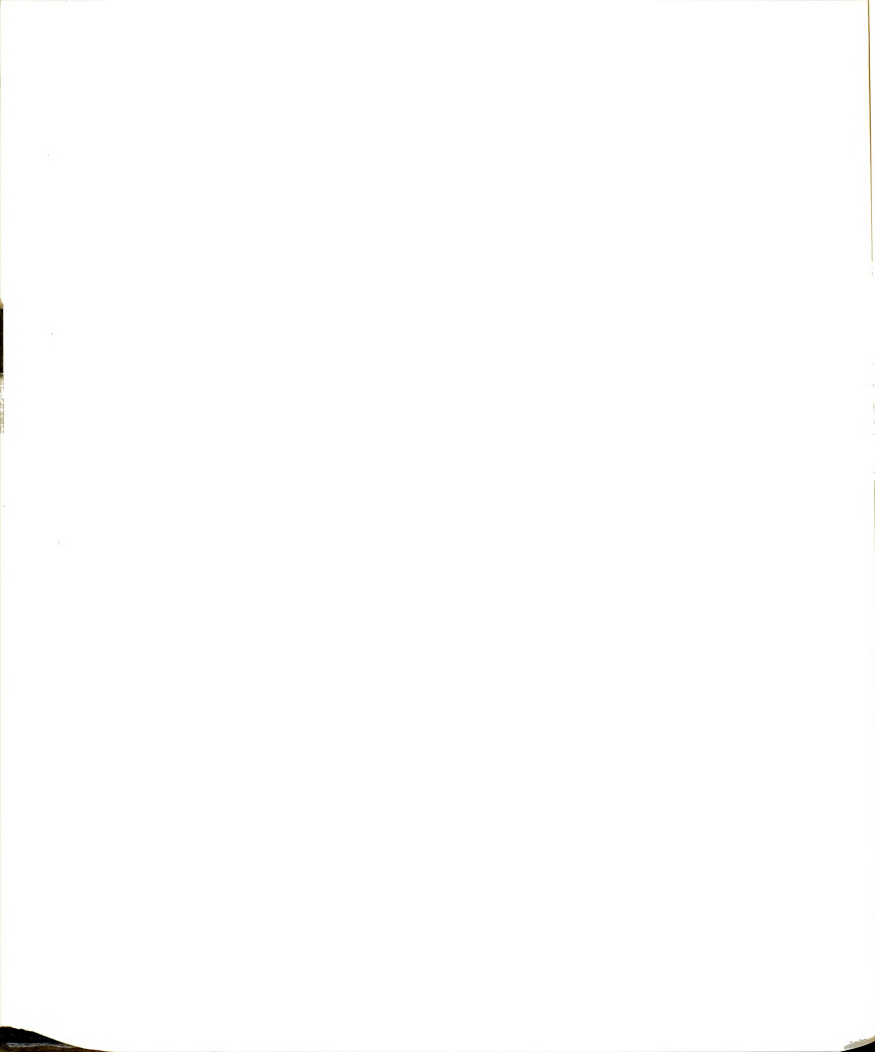


Table 23.--The Result of the Null Hypotheses in Relation to Subject Areas That Should be Known by the Agent (Directors' Perception)

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the mean judgment of subject areas preferred by the two agencies	
R = Reject the null	NR= Fail to reject the

Subject areas	Statistical result
Approved seeds	NR
Dry land farming	R*
Fertilizer.	R*
Pest control	NR
Herbicides	NR
Vegetable crops	R*
Fruit trees	R*
Soil management	NR
Tillage practice	R*
Planting equipment	NR
Field sprayers	NR
Harvesting equipment	NR
Tillage practice	R*
Animal breed	NR
Poultry breed	NR
Credit	R*
Market price	NR
Storage	NR
Packaging	NR
Farm cooperative	NR
Forage crop	R*

*significant at $\alpha \leq .05$



Strengthening Agricultural Extension Programs

Directors Perceptions

The null hypothesis was used to test for difference between the two directors and stated that :

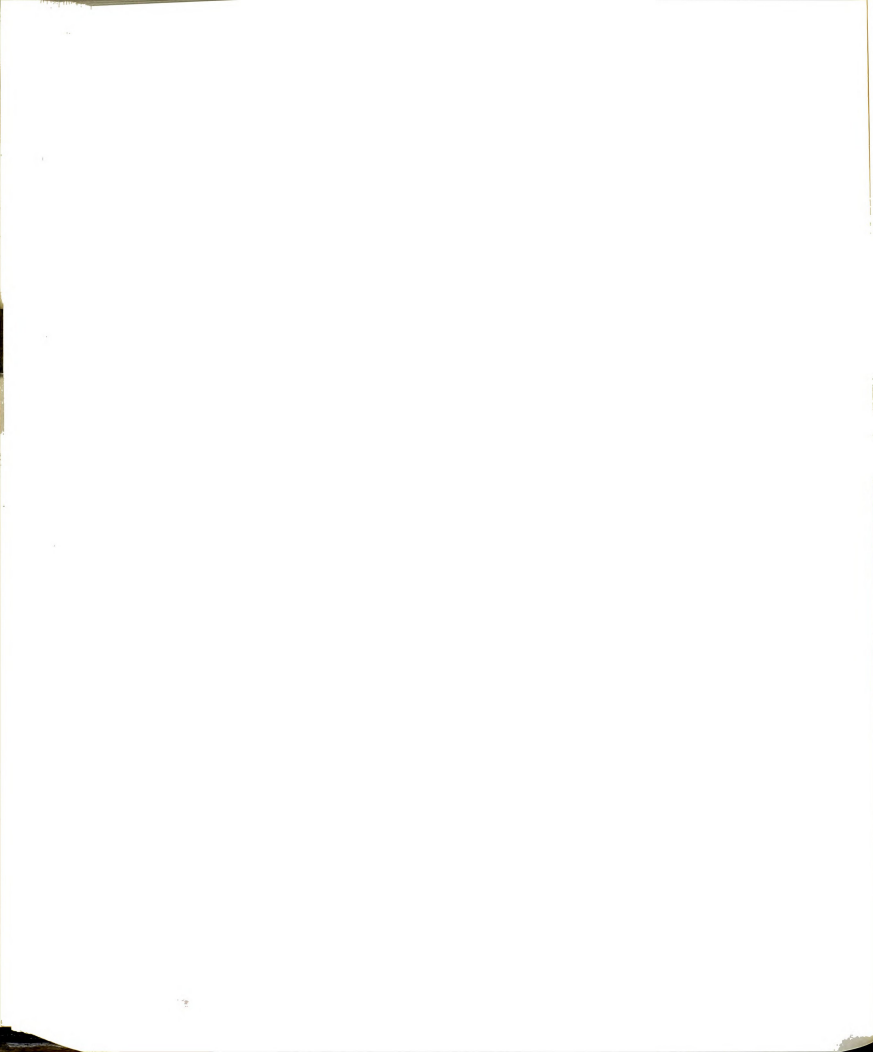
There is no difference between the Extension and Rural Development Directors perceptions and each of the variable on strengthening Agricultural Extension programs .

$$H_0: \mu_1 = \mu_2$$

The null hypotheses was tested using the t-test to determine whether differences between the directors perceptions on each of the variables related to strengthening agricultural extension programs were statistically significant between the two groups. The results of the t-test from the 14 statements on strengthening agricultural extension programs by the two directors are reported in Appendix A-5.

One statement on strengthening Agricultural Extension programs was found to differ significantly between the two groups. The one statement which did differ significantly is presented in Table 24 and discussed below. The statistical results are summarized in Table 25. Therefore the null hypothesis was not rejected for all but one of the variable on strengthening agricultural extension programs.

One statement that was found to differ significantly between the two groups in relation to integration of services of the Extension Department and Rural Development Department is reported in Table 24. The data in Table 24



indicate the Rural Development Directors judged this action, "Integration of services of the Extension Department and Rural Development Department", to be more significant than Extension Directors with mean scores of 4.65 compared to Extension Directors with mean scores of 3.74. The differences were significant at the 0.00 level.

Table 24.--Mean and Standard Deviation of Directors Perception in Relation to Strengthening the Agricultural Extension System in Khorassan

Statement	Extension Director N = 23		Rural Development Director N = 20		t	p
	Mean S.D	DF	Mean S.D			
Integration of Services of the Extension Department and Rural Development Department	3.87 0.95	41	4.65 0.73		2.98*	0.00

Directors responded to these statements on five point Likert type scale with 1 = Strongly disagree 2 = disagree
 3 = Neutral 4 = Agree 5 = strongly agree
 *significant at $\alpha \leq 0.05$

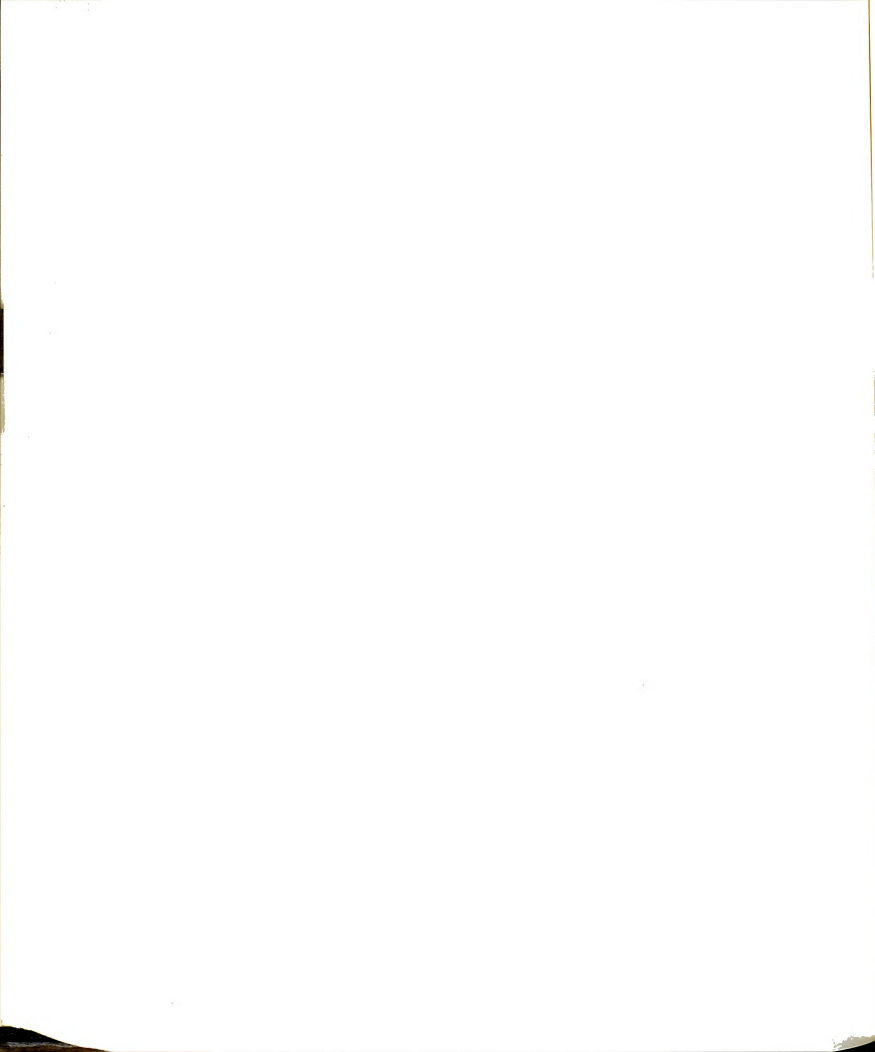


Table 25. The Result of Null Hypotheses in Relation to Strengthening Extension Programs in Khorassan.

$\alpha = 0.05$ $H_0 = \mu_1 = \mu_2$ There was no difference between the mean judgment of strengthening by the two agencies	
R = Reject the null	NR= Fail to reject the
Statements	The Result of H_0 :
Strong research extension linkage	NR
Integration of services of the Extension Department and Rural Development Department	R*
Strengthening the research capacity to meet the needs of the farmers	NR
Strengthening the knowledge and skills of the extension personnel through in-service training.	NR
Mobilizing extension specialists to train field level workers.	NR
Strong evaluation and monitoring unit within the department	NR
Reducing the duplication of work between the Extension Department and Rural Development Department	NR
A coordination of local level agencies such as cooperatives, credit bank, extension and rural development.	NR
Decentralization of decision making (i.e. planning, implementation, and evaluation of extension programs)	NR
Involving local people in extension programming.	NR
Greater numbers of extension specialists and field level personnel	NR
Strengthening the mobility (transportation) and communication facilities	NR

Table 25. Continued

Statements	The Result of Ho
Maintaining higher levels of commitment, dedication, and morale of staff by increasing their salary and facility specialists and field level personnel	NR

*significant at $\alpha \leq 0.05$

Directors Perception in Reaction to Time Allocation

Data presented in Table 26 indicate that the Extension Directors allocated on an average 22 percent of their time to planning activities compared to 32 percent of the Rural Development Directors. The t-test result shows a statistically significant difference between the two Directors at .01 level of probability.

The Extension Directors on an average spent 56 percent of their time in educational activities while the Rural Development Directors spent 52 percent. The t-test results did not show a statistically significant difference between them.

Data in Table 26 indicate that the Extension Directors allocated on an average 22 percent of their time to planning activities compared to 14 percent of the Rural Development Directors, The t-test result shows a statistically significant difference between the two Directors at .03 level of probability.

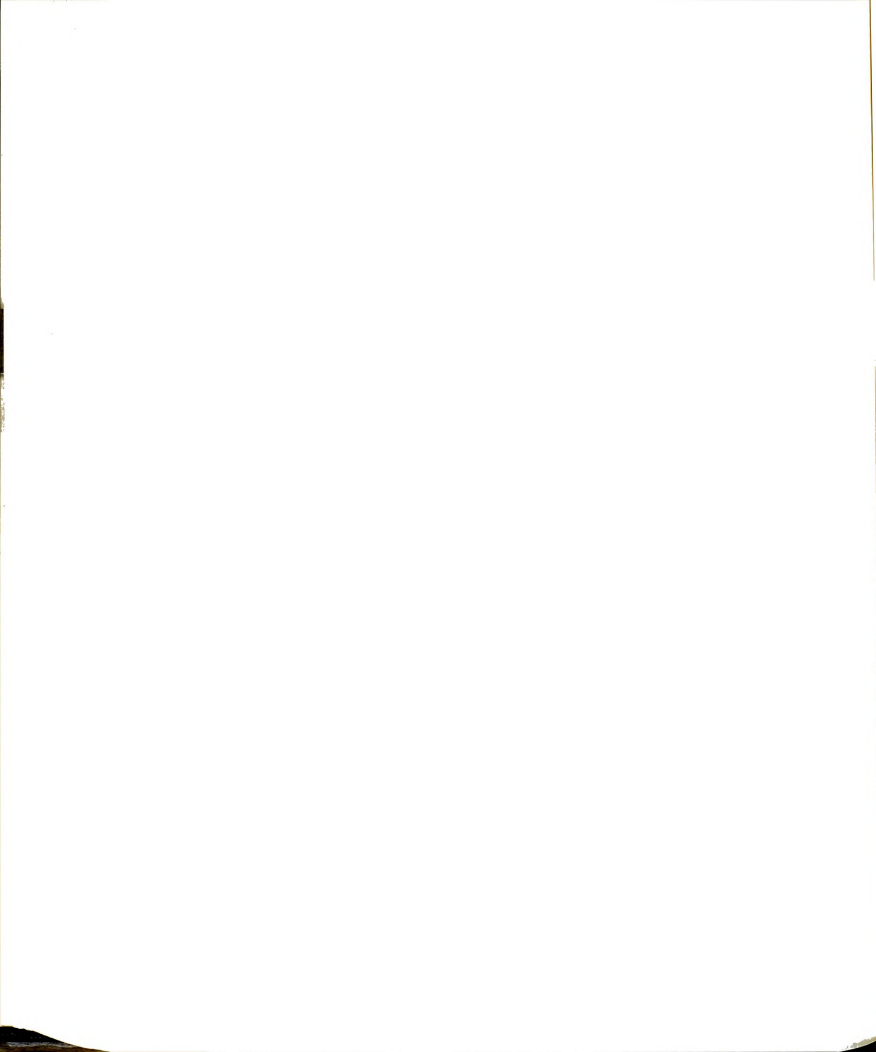


Table 26. Extension & Rural Development Directors Perceptions Related to Time Spent for Activities (percent)

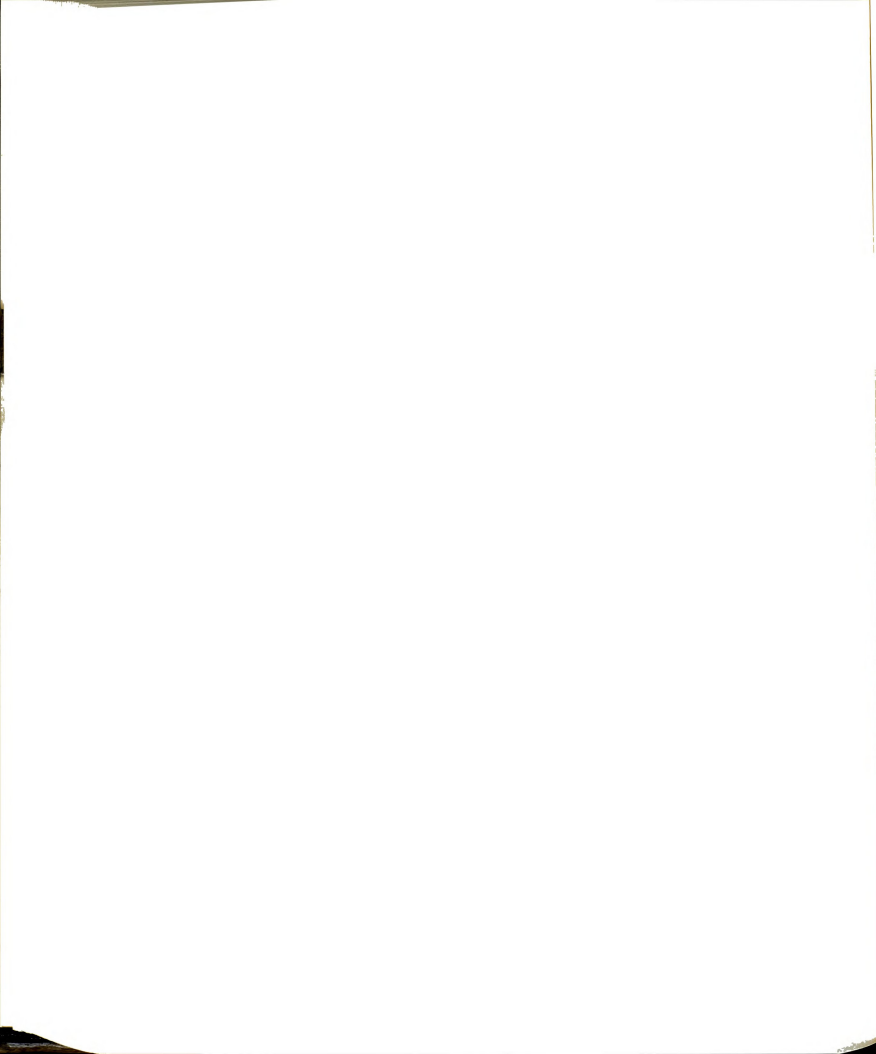
Statement	Extension Director N =23	Rural Development Director N= 20	t	p
	Number Mean	Number Mean		
Time spent for planning activities	23 22	19 32	2.27	0.01*
Time spent for educational activities	22 56	20 52	0.59	0.28
Time spent for non educational programs	22 22	20 14	1.99	0.03*

Extension and Rural Development Directors responded to these items on percent(%).

*significant at $\alpha \leq 0.05$

Directors Perceptions'on Provision of Assistance

The problems of inadequate food production, environmental decline, and the lack of broad based agricultural development will not be solved without adequate investment in rural areas and people (Rajabian, 1364/1986, p. 132). In order to understand the adequacy of activities, the study findings on the perceptions of Extension and Rural Development Directors regarding Provision of Assistance follow.



There was no significant difference between Directors perception and each of the activities regarding provision of assistance to the farmers.

$$\alpha = 0.05$$
$$H_0 = \mu_1 = \mu_2$$

The hypothesis was tested using the t-test to determine whether differences between the Directors' perceptions and each of the variables related to provision of assistance to the farmers were statistically significant between the two groups. The results of the t-test from six statements are reported in Appendix A-6. One statement of provision of assistance to the farmers was found to differ significantly between the two groups.

Therefore, the null hypothesis was not rejected for all but the statement, "To what extent your agent prepares demonstration plots" The one statement which differs significantly is presented in Table 27 and discussed below. The statistical results are summarized in Table 28.

Data in Table 27 indicate that Extension Directors judge the statement "To what extent your Extension agents prepare demonstration plots" to be significantly more important, with a mean score of 3.30, compared to Rural Development Directors with a mean scores of 2.85.

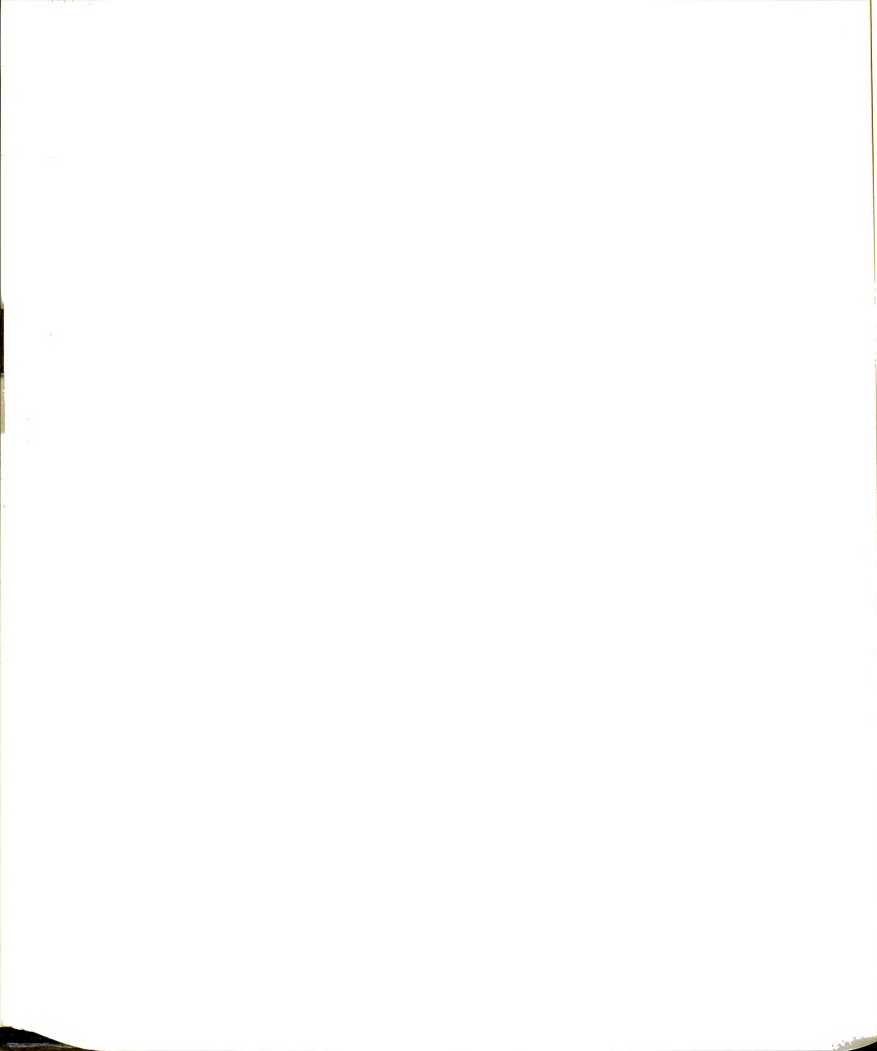


Table 27.-- Directors perceptions of the Provision of Assistance to the Farmers

Statement	Groups	No	Mean	S.D	t	p
** Statement	Group 1	23	3.30	0.70	1.75*	0.04
	Group 2	20	2.85	0.99		

Group 1 = Extension Director Group 2 = Rural Development Directors
 *significant at $\alpha \leq 0.05$

***"To what extent do your Extension agents prepare demonstration plots"

Table 28.--The Result of Analysis of Null Hypotheses in Relation to Provision of Assistance to the Farmers

$$\alpha = 0.05$$

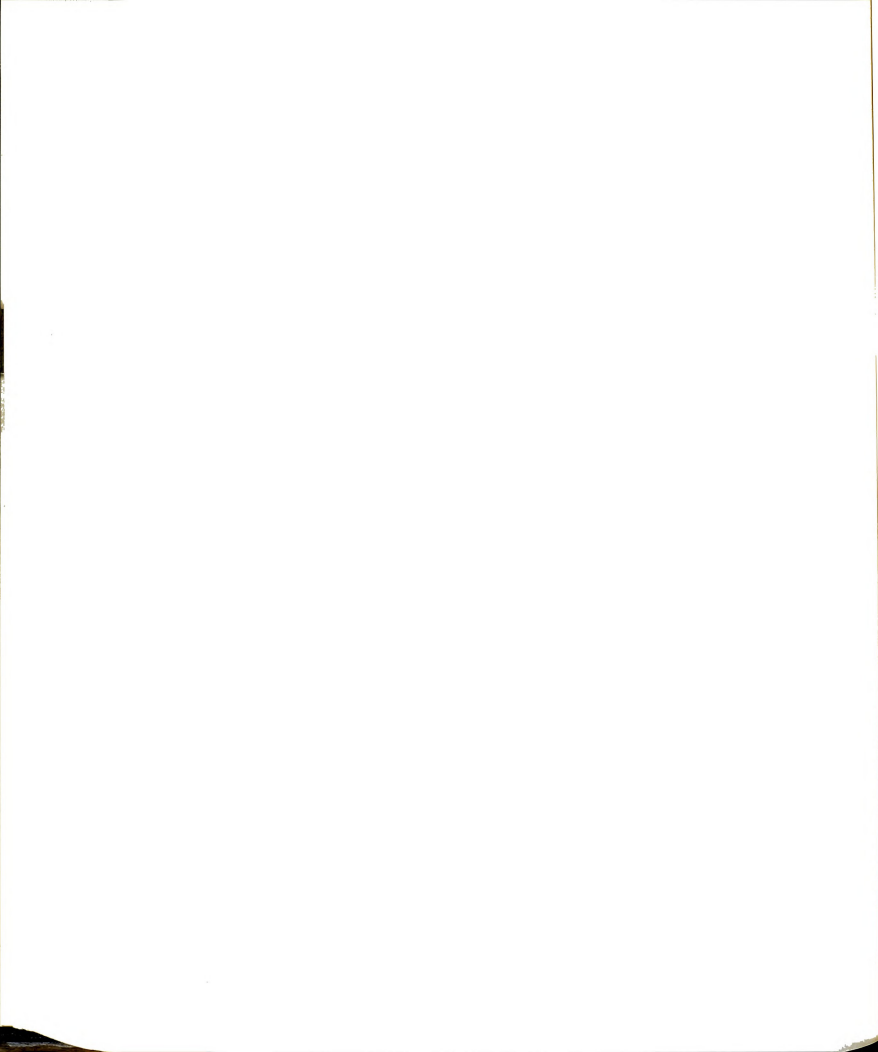
$$H_0 = \mu_1 = \mu_2$$

There was no difference between the mean judgment of the Extension Agent and Rural Development Directors

R = Reject the null NR= Fail to reject the

Statement	Result of H_0
1. To what extent do your organization organized seminar that researcher present and demonstrate to farmers their latest finding.	NR
2. To what extent do your Rural Agent develop written plans for each seminar or other training program. Statement.	NR
3. To what extent does your Extension Agent prepare demonstration plots.	R*
4. To what extent your Extension agent Take farmers on some field trips or to visits to research station.	NR
5. To what extent is the organization effective on solving farmers problems.	NR
6. To what extent do you feel the organization is active, in the farmers educational needs	NR

*significant at $\alpha \leq 0.05$



Directors, Extension Agent and Rural Development Personnel's Perceptions Regarding the Future of Extension Activities and Their Collaboration

There was no difference between the Directors and the Agents perception on each of the statements regarding strengthening the extension effort.

$$\alpha = 0.05$$

$$H_0 = \mu_1 = \mu_2$$

The hypothesis was tested using One way analysis of variance. Tukey procedures were used to examine whether differences in variable related to the future of extension activities " Integration of services of Extension and the Rural Development Department". The result of one- way analysis of variance with Tukey procedures in Table 29 indicated that there was a difference at the .05 level between the Directors and Agents. The result of the Tukey test showed that Rural Development Personnel (G1) judged this statement to be significantly more important with a mean score of 4.65 than the Extension Agent (G2) with a mean score 3.77.

The Rural Development personnel (G1) also judged this statement to be significantly more important, mean score 4.65 than the Extension Directors (G3), mean score (3.74).

Also, there were significant differences between the Rural Development Directors (G4) and Extension Agents (G2). Rural Development Directors judged this statement to be significantly more important, mean score 4.65 than the Extension Agent, mean score 3.74.

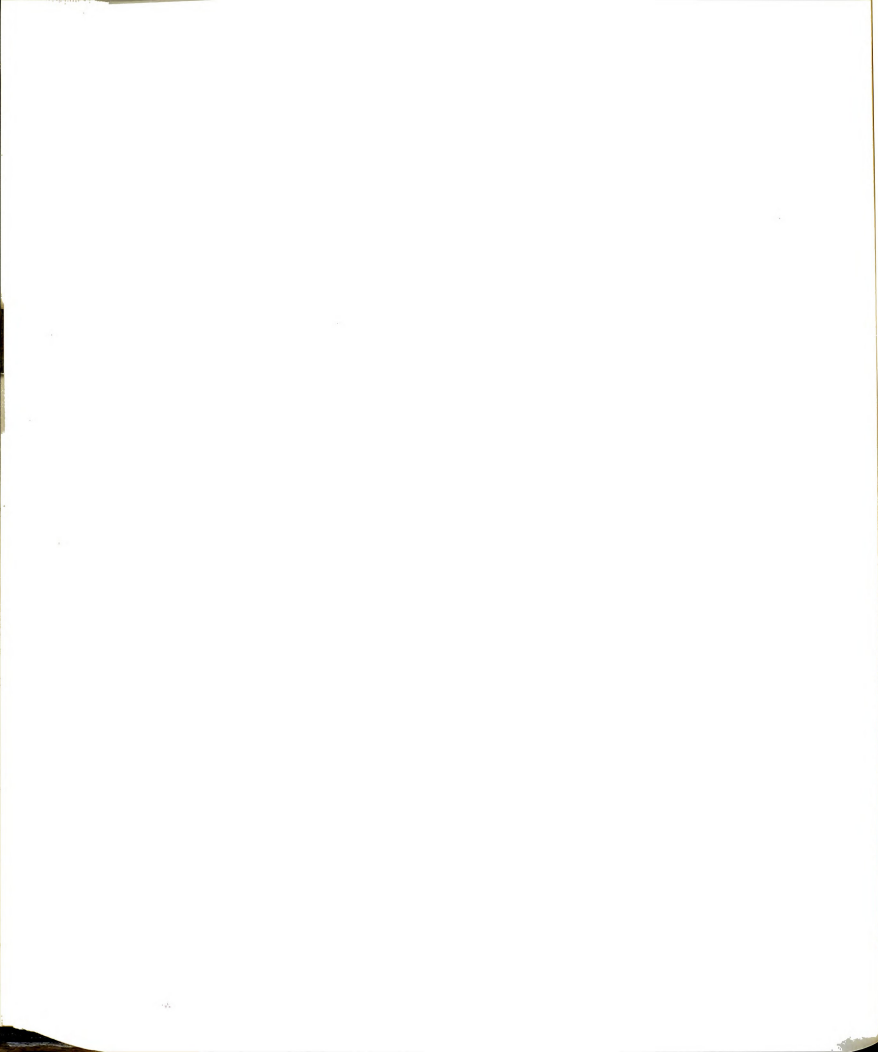


Table 29.--Perception of Directors and Agents on the statement "Integration of service between the two department".

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	p*
Between	4	25.45	6.36	4.96	.001
Within	119	152.64	1.28		
Total	123	178.09			

*P<.05.

* Pairs of groups significantly different at the 0.05 level

Mean	Group	G3	G2	G1	G4	G5
3.74	G3					
3.77	G2					
4.65	G1	*	*			
4.65	G4		*			
4.83	G5					

G1=Rural Development Personnel G2=Extension Agents
G3=Extension Directors G4= Rural Development Directors
G5=Research Director

PART 3

EXTENSION AGENTS AND RURAL DEVELOPMENT PERSONNEL

Perceptions of Extension Agent and Rural Development Personal in Relation to Teaching Methods Preferred

Ho: There was no difference between the Extension Agents and Rural Development personnel's perceptions on each of the teaching methods.

$$H_0: \mu_1 = \mu_2$$

The null hypothesis was tested using a t-test to determine whether differences between the variables on teaching methods were statistically significant between the

perceptions of Extension Agents and Rural Development Personnel. The results of the t-test from 20 statement on teaching method are reported in Appendix A-7. Two statements on teaching methods were found to differ significantly between the two groups. The statistical result are summarized in Table 30. Therefore, the null hypothesis was not rejected for 18 of the 20 the teaching methods. The two extension teaching method which did differ significantly are presented in Table 31 and discussed below.

Table 30.--The Result of Analysis of Null Hypotheses in Relation to Teaching Methods preferred by the Two Agents

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the mean judgment of teaching methods followed by the two agencies	
R = Reject the null NR= Fail to reject the	
Teaching methods agent	Extension & Rural Development
<u>Individual Methods</u>	
Farm visits	NR
Office calls	R*
Letters/Not telephone	NR
Exhibits at agricultural shows	NR
Farmers' classes	NR
Field demonstrations	NR
Field days	NR
<u>Group Meetings</u>	
Tours/field trips	NR
Group projects	NR
<u>Materials and Media</u>	
Live specimen & samples	R*
Leaflets and bulletins	NR
Pictorials/illustrations	NR
Television	NR
Newsletters	NR
Radio	NR
Films & slides	NR
Videos & films	NR
Posters & charts	NR
Manuals	NR
Other (Specify)	NR
*significant at $\alpha \leq 0.05$	

The two statements that were found to differ significantly between the Extension Agents and Rural Development Personnel are reported in Table 31. Table 31

indicates that the statement "importance of office calls as a teaching method " is more important to the Extension Agents with a mean score of 4.0 than the Rural Development Directors with a mean score of 2.90. The level of significant was 0.00.

The statement "importance of using live specimens and samples", was judged by the Extension Agents to be less significant, with a mean score of 3.95, than by the Rural Development Personnel with a mean score of 4.39. The level of significance was 0.02. The null hypotheses was rejected and alternative hypotheses that there was a significant difference between the Extension Agents and Rural Development Personnel was accepted.

Table 31. Extension Agents' and Rural Development Personnel Perceptions in Relation to Teaching Methods.

statement	Extension Agent N = 44	Rural Develop- ment personnel N = 31			
	Mean S.D	Mean S.D	DF	t	p
Office calls	4.00 0.96	2.90 0.96	71	4.71*	0.00
Live specimens and samples	3.95 0.94	4.39 0.75	72	2.10	0.02

Agents responded to these items on a five(5) point Likert type scale: 1=SD=Strongly Disagree 2=D=Disagree
3=N=Neutral 4=A=Agree 5=SA=Strongly Agree
*significant at $\alpha \leq 0.05$

Extension Agents and Rural Development Personnel Priority Ranking of Teaching Methods

Perceptions on the priority of extension teaching activities by the Extension Agents and Rural Development Personnel are presented in Table 32. The data show that 19 (43.2%) of the Extension Agents gave high priority to individual teaching methods, compared to Rural Development Personnel where six (19.4%) felt a high priority should be given to individual teaching methods. On the group teaching methods Rural Development Personnel gave high priority 20 (64.5%) compared to the Extension Agents 19 (43.2%). Data also show both groups gave low ranking to Mass Media as a teaching methods. Also 19 (43.2%) of the Extension Agents gave high priority to group teaching methods.

Table 32.--Perceptions of Priority of Extension Teaching Activities by Extension Agent and Rural Development Personnel

Teaching Methods	Extension Agent rank N = 44			Rural Development rank N = 31		
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
	1*	2*	3*	1*	2*	3*
Individual Teaching	19 43	13 30	12 27	06 19	14 45	11 36
Group Teaching	19 43	24 55	01 22	20 65	07 23	04 13
Mass Media	05 12	08 16	31 70	04 13	08 26	19 60

*1 = the highest and 3 = the lowest score.

Agents' Perception on the Level of Knowledge

There was no difference in level of Knowledge between the Extension Agents and Rural Development Personnel Perception on each of the areas

$$H_0: \mu_1 = \mu_2$$

The null hypothesis was tested using the t-test to determine whether differences between the level of the knowledge were statistically significant between the Extension Agent and Rural Development Personnel on each of the areas related to level of knowledge. The results of the t-test from the 27 areas related to agriculture and agricultural extension are reported in Appendix A-8.

Data indicate that of 27 statements, 16 were found not to be significantly different. Eleven subjects areas were found to differ significantly between the two groups. Therefore the null hypothesis was rejected for the 11 out of 27 of the areas. The 11 subjects areas which did differ significantly are presented in Table 33. The statistical results are summarized in Table 34.

Data in Table 34 indicated that Extension Agents judged the area of crops production to be significantly different with a mean score of 2.86 compared to Rural Development Personnel with a mean score of 2.55. The difference was significant at the 0.03 level.

Data in Table 33 also indicate that Extension Agents judged, pest control, animal production, and poultry production significantly different. The mean scores were

2.53 for pest control, 2.16 animal production, and 1.95 for poultry production compared to Rural Development Personnel with a mean score of 2.13 for pest control, 1.41 for animal production, and 1.57 for poultry production.

Also data in Table 33 indicate that Extension Agents judged irrigation, rural cooperatives, bee keeping, animal health, institutional work, farm loan, and demonstration plots to be significantly different, with a mean score of 2.45 for Irrigation, 2.07 for cooperative extension, 2.09 for bee keeping, 2.90 for Animal health, 2.21 for institutional work, 2.60 for farm loan, and 2.90 for demonstration plot, compared to Rural Development with a mean score of 2.10 for irrigation, 1.64 for cooperative Extension, 1.53 for bee keeping, 2.39 for animal health, 1.77 for institutional work, 2.16 for farm loan, and 2.39 for Demonstration plots. The differences were significant at the 0.05 level for irrigation, 0.03 level for cooperative Extension, 0.00 level for beekeeping, 0.00 level for animal health, 0.02 level for institutional work, 0.02 level for farm loan, and 0.09 level for demonstration plots.

Table 33. Mean and Standard Deviation of Agent's Level of Knowledge.

Areas	Agent	No Cases	Mean	S.D	2 tail	p
					t	
Crops	G1	31	2.55	0.81		
	G2	43	2.86	0.41	2.17*	.03
Pest-control	G1	31	2.13	0.85		
	G2	43	2.53	0.59	2.43*	.02
Animal product	G1	29	1.41	0.73		
	G2	43	2.16	0.72	4.29*	.00
Poultry product	G1	30	1.57	0.86		
	G2	43	1.95	0.72	2.08*	.04
Irrigation	G1	31	2.10	0.75		
	G2	44	2.45	0.76	2.02*	.05
Cooperative Ext	G1	31	1.64	0.75		
	G2	43	2.07	0.88	2.16*	.03
Bee keeping	G1	30	1.53	0.78		
	G2	43	2.09	0.81	2.95*	.00
Animal health	G1	31	2.39	0.76		
	G2	34	2.90	0.72	3.00*	.00
Institutional job	G1	31	1.77	0.76		
	G2	43	2.21	0.74	2.46*	.02
Farm loan	G1	31	2.16	0.86		
	G2	43	2.60	0.69	2.45*	.02
Demonstration plots	G1	31	2.39	0.76		
	G2	44	2.90	0.72	3.00*	.09

Extension agents and Rural Development personnel responded to these items on a 5 point Likert type scale with: 5 = very comfortable, 4 = comfortable, 3 = neutral, 2 = uncomfortable, 1 = very uncomfortable.

G1 = Rural Development Personnel

G2 = Extension Agents

* The result of the t test indicated a statistically significant difference.

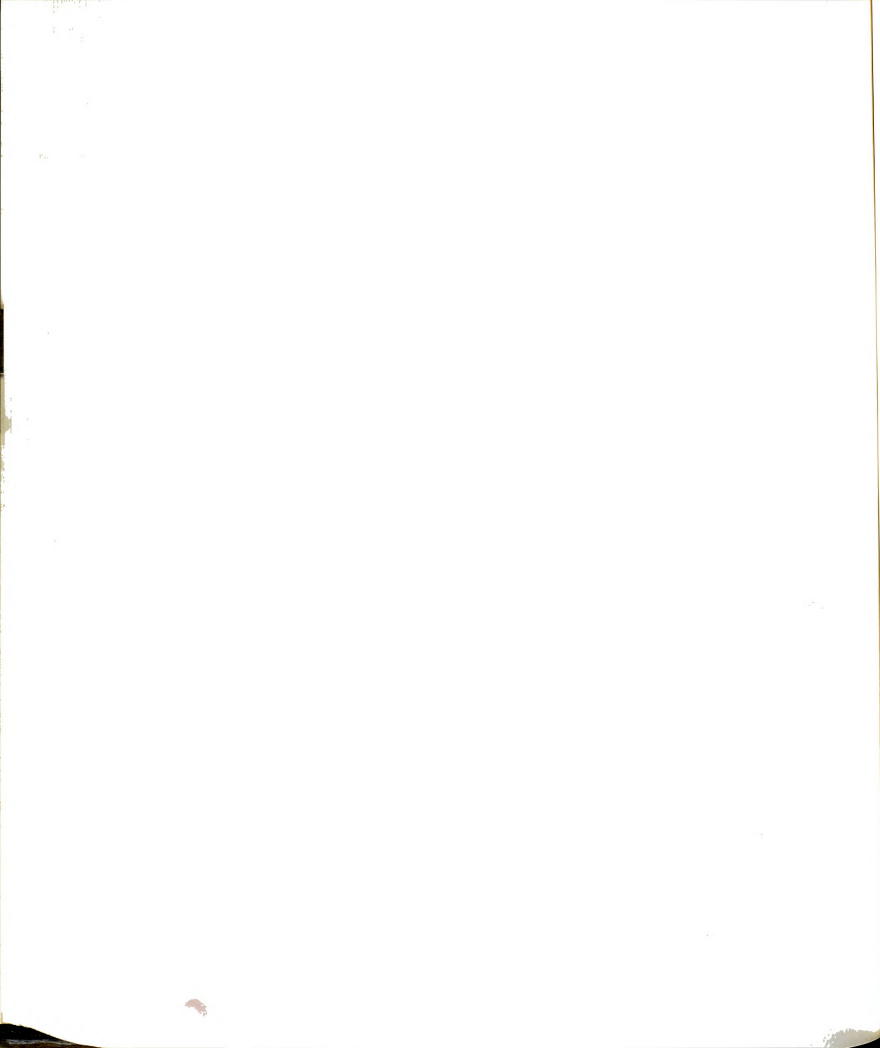


Table 34.--The Result of Analysis of Null Hypotheses in Relation to Level of Knowledge Between the Two Agents

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the mean judgment of area of skills by the Extension Agents and Rural Development Personnel	
R = Reject the null	NR= Fail to reject the

Areas	Extension & Rural Development Ho
Crops	R*
Pest control	R*
Herbicide	NR
Animal production	R*
Poultry production	R*
Dry land farming	NR
Forage production	NR
Farm machinery	NR
Soil fertility	NR
Soil	NR
Marketing	NR
Irrigation	R*
Animal power	NR
Local equipment	NR
Farm management	NR
Cooperative extension	R*
Bee keeping	R*
Animal health	R*
Tillage practice	NR
Adjustment of	NR
Equipment	
Institutional work	R*
Farm loan	R*
Farm equipment	NR
Rural cooperative	NR
Demonstration	R*
Plots	

*significant at $\alpha \leq 0.05$

Agents' Perceptions on the Area of Teaching

Data in Appendix A-9 indicate the perceptions of agents in relation to subjects covered by the two department.

Data in Table 35 show the rank order of eight subject areas where the Extension Agent and Rural Development Personnel most often give advice. According to data in Table 35, Extension Agents and Rural Development Personnel almost had the same perception in relation to tillage practice; Rural Development Personnel also gave high rank to forage crops. Extension Agents ranked land leveling and using fertilizer higher.

Table 35. Self Ranking Perception of Extension Agents and Rural Development Personnel Regarding the Area in which they Most often Gave Advice

Areas	Extension Agents	Areas	Rural Development Personnel
	Rank order		Rank order
Tillage practices	1	Tillage equipment	1
Land leveling	2	Tillage practices	2
Using fertilizer	3	Forage crops	2
Using pesticides	3	Planting equipment	3
Irrigation	3	Using fertilizer	4
Approved seeds	4	Fertilizer	4
Forage crop	4	Harvesting practice	4
Soil fertility	4	Approved seeds	5
Fertilizer	5		

Perception of Extension Agents and Rural Development Personnel in Relation to the Linkage with Agriculturally Related Organizations

H₀: There was no difference between the mean judgement of Linkages of Extension Agents and Rural Development Personnel with each of the Agriculturally Related Organizations.

$$\alpha = 0.05$$

$$H_0: \mu_1 = \mu_2$$

The null hypothesis was tested using the t-test to determine whether differences between the variables of linkages were statistically significant between the Extension Agents and Rural Development Personnel. The results of the t-test from the 13 statement on linkages with universities and agricultural organization by Extension Agents and Rural Development Personnel were reported in Appendix A-10. From the data seven are found to differ significantly between the Extension Agents and Rural Development Personnel. The statistical results are summarized in Table 36. The seven statements of linkages which did differ significantly are presented in Table 37 and discussed below.

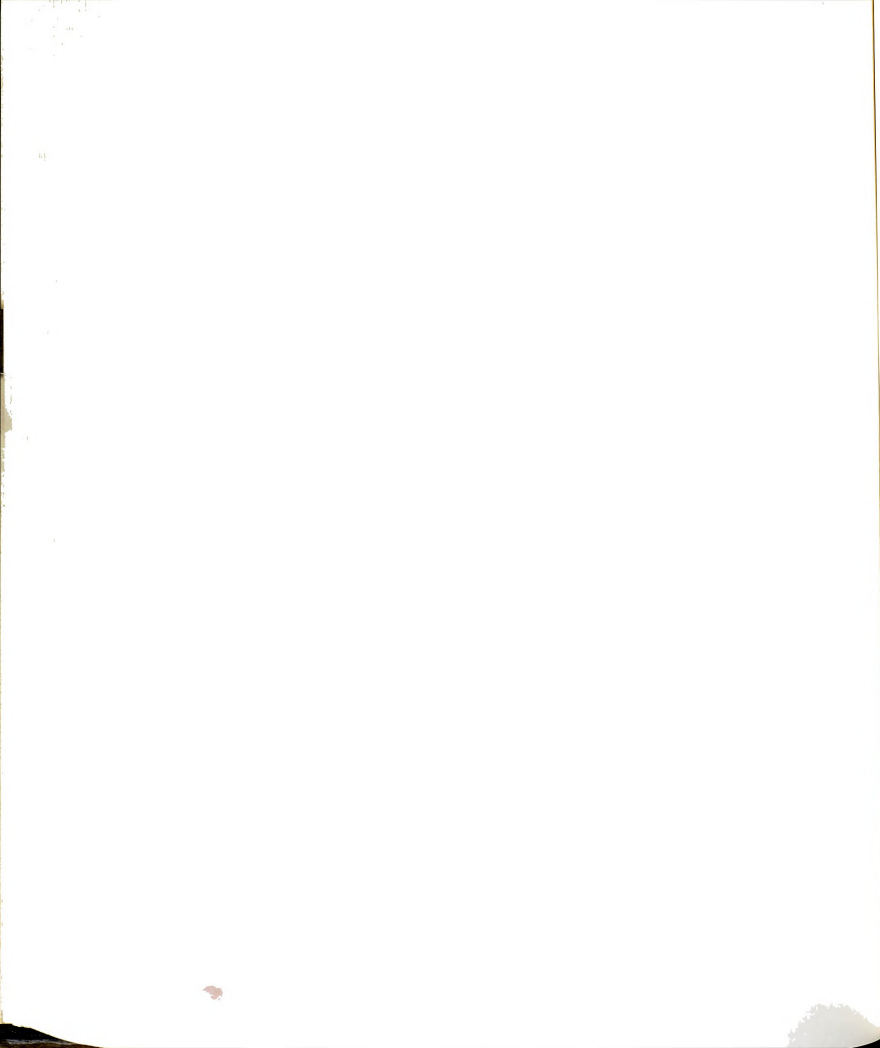


Table 36. The Result of Null Hypotheses in Relation to Linkages with Agricultural Colleges and Related Organization

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the mean judgment of linkage by Extension Agent and Rural Development Personnel	
R = Reject the null	NR= Fail to reject the

Organization	Extension & Rural Development agent H_0
<hr/>	
Linkage With Agricultural Colleges and Universities	NR
Agricultural Research Stations	NR
Agricultural Bank	NR
Credit Institutions	NR
Rural Development Research Station	R*
Farm Machinery Organizations	NR
Fertilizer agencies	NR
Pesticide Research Center	R*
Animal Research Center	R*
Soil Research Center	R*
Forestry Research Center	NR
Dry Land Farming Research Station	R*
Cooperative Organizations	R*
Other	NR

*significant at $\alpha \leq 0.05$

Extension Agents and Rural Development Personnel Linkages with Agriculturally Related Organization

On the statement "linkages with Rural Development Research Station", the data in Table 37 indicate that Rural Development Personnel judged this linkages to be significantly more, with a mean score of 1.77, than Extension Agents with a mean score of .30. The differences were significant at the 0.00 level.

Data in Table 37 also indicate that Extension Agents judged the linkages with the pesticide research center to be

significantly more, with a mean score of 1.66, than the Rural Development Personnel with a mean score of 0.82. The differences were significant at the 0.00 level.

On the statement "linkages with Animal Research Center", data in Table 37 indicate that Extension Agents also judged this practice to be more significant, with mean scores of 1.25, than Rural Development Personnel with mean scores of 0.48. The differences were significant at the 0.00 level.

Data in Table 37 show that Extension Agents also judged the statement "linkages with Soil Research Center", significantly more important, with a mean scores of 1.18, than the Rural Development Personnel with a mean score of 0.77. The differences were significant at the 0.02 level. Data in Table 37 indicate that Rural Development Personnel judged the "linkages with Dry land Farming Research Station" to be significantly more important than Extension Agents with a mean score of 1.68 compared to Extension Agents with a mean scores of 0.87. The differences was significant at the 0.00 level.

Data in Table 37 also illustrate that the Extension Agents judged the statement "linkages with Rural Cooperative organizations", significantly more important, with a mean scores of 2.07 than the Rural Development Personnel with a mean score of 1.30. The difference was significant at the 0.00 level.

Table 37. Extension Agents and Rural Development Personnel Perception of Linkages with Organizations

Organization	Extension Agents N = 44		Rural Development N = 31	
	Mean S.D	Mean S.D	t	p
Rural Development Research Station	0.30 0.59	1.77 1.04	7.73*	0.00
Pesticide Research Center	1.66 0.82	0.90 1.00	3.54*	0.00
Animal Research center	1.25 0.80	0.48 0.80	4.03*	0.00
Soil Research Center	1.18 0.78	0.77 0.91	2.60*	0.02
Dry Land Farming Research Station	0.84 0.93	1.68 0.86	3.91*	0.00
Cooperative Organization	2.07 0.72	1.30 0.82	4.20*	0.00

Extension Agent and Rural Development Personnel responded to these items on four point Likert type scales with.

0 = No linkages 1 = little linkages 2 = good linkages
3 = Excellent linkages

*significant $\alpha \leq 0.05$

Perceptions of Extension Agents and Rural Development Personnel in Relation to Frequency of Contact with Research Centers

Data in Table 38 show that from those who responded over one half of the Rural Development Personnel 14 (56.0%) and 20 (47.6%) of the Extension Agents indicated that they visited the research center every three months.

Table 38.--Perception of Extension Agents and Rural Development Personnel Regarding their Linkage with the Research Station

Numbers of contact	Extension Agents		Rural Development Personnel	
	No	(%)	No	(%)
Once Every Three Months	20	(47.6)	14	(56.0)
Once Every Six Months	03	(07.2)	04	(16.0)
Once a Year	04	(09.2)	02	(08.0)
None	15	(35.7)	05	(20.0)

Extension Agents' and Rural Development Personnel's Perceptions Related to Months of C.Contact with the Research Station

Data in Table 39 show that 20 (45.4%) Extension Agents and 14 (45.2%) Rural Development Personnel indicated that they visited the Research station once every three month. Also, 15 (20.0%) of the Extension Agent and five (16%) Rural Development Personnel indicated they did not visit the Research stations.

Table 39.--Perceptions of Extension Agents and Rural Development Personnel Regarding Their Frequency of Contact with Research Stations

Category of contact	Extension Agent N= 44		Rural Development N= 31	
	No	(%)	No	(%)
Once Every Three Months	20	(45.5)	14	(45.2)
Once Every Six Months	03	(06.8)	10	(32.3)
Once a Year	04	(09.1)	02	(06.5)
None	15	(34.1)	05	(16.0)
No response	02	(04.5)	NA	
Total	44	(100)	31	(100)

Extension Agents and Rural Development Personnel's
Perceptions Regarding Provision of Assistance to Farmers.

Ho: There was no difference between the Extension Agent and Rural Development Personnel's perception on each of the variable regarding provision of assistance to farmers.

$$\alpha = 0.05$$

$$H_0 = \mu_1 = \mu_2$$

The null hypothesis was tested using the t-test to determine whether differences between the variable related to provision of assistance to farmers were statistically significant between the Extension Agent and Rural Development Personnel. The result of the t-test from the six practices which were related to provision of assistance to farmers are reported in Appendix A-11. Two statements were found not to be significantly different between the two groups. The statistical results are summarized in Table 40. Therefore, the null hypotheses were not rejected for all but four of the practices. The four practices which did differ significantly are presented in Table 41 and discussed below.

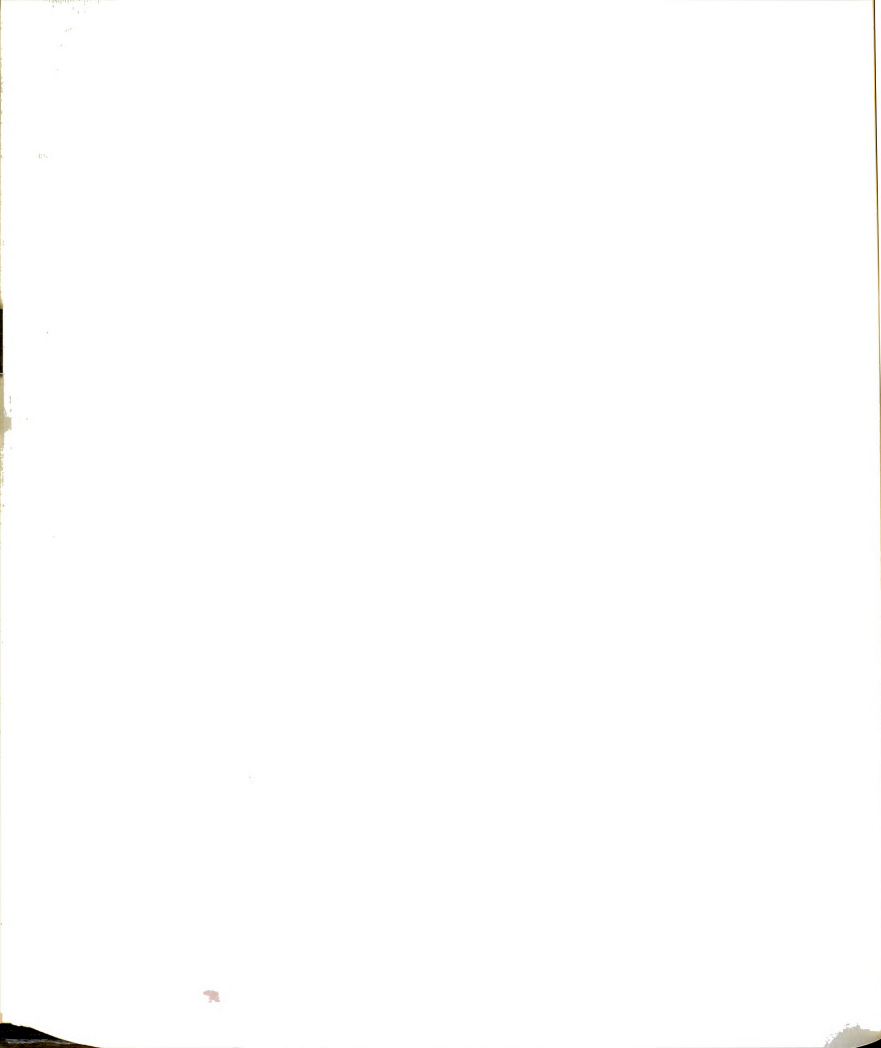


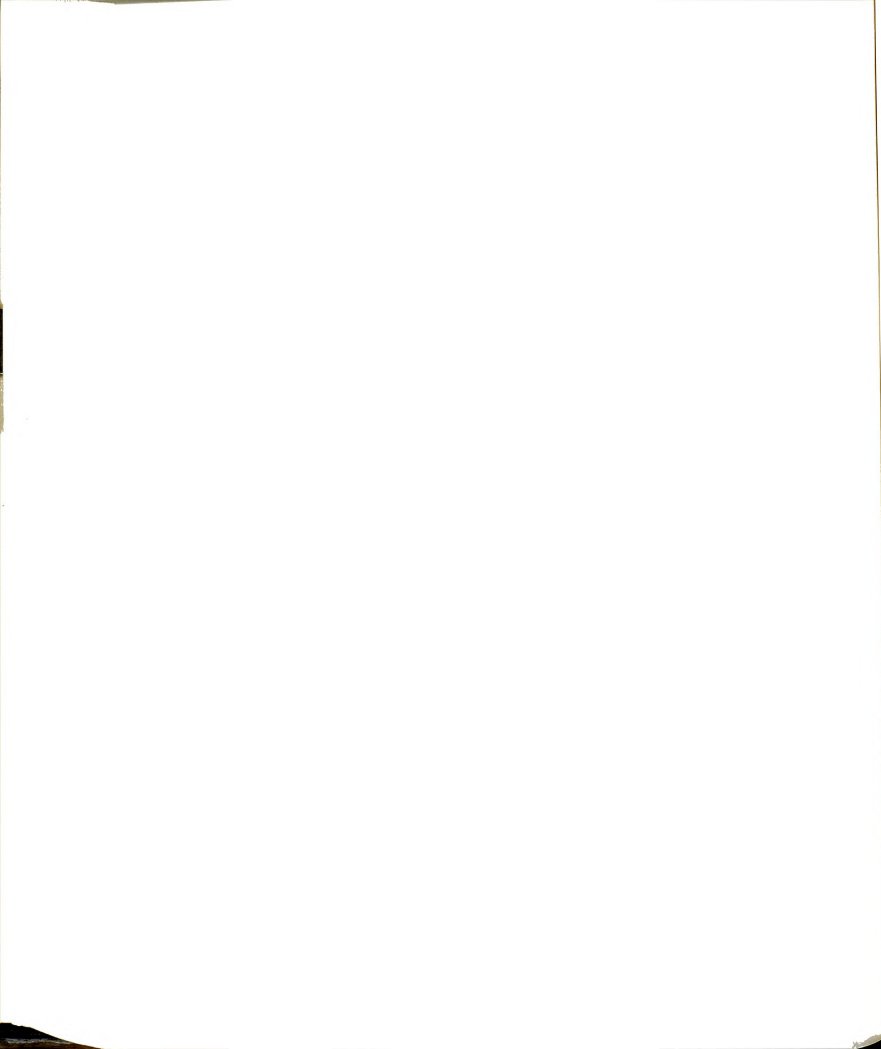
Table 40. The Result of Analysis of Null Hypotheses in Relation to Provision of Assistance to Farmers Extension Agents and Rural Developments Personnel

$\alpha = 0.05$ $H_0 = \mu_1 = \mu_2$	
There was no difference between the Extension Agents and Rural Development Personnel's perception on each of the variables related to provision of assistance to farmers.	
R = Reject the null	NR= Fail to reject the
Statement	Statistical Results
1-Do you organize seminars which researchers present and demonstrate their latest findings to the farmers?	NR
2-Do you develop written Plans for each seminar?	R*
3-Do you develop demonstration plots for the farmers?	R*
4-Did you have extension Classes for the farmers in 1989?	R*
5-Did you take farmers For Field trips or visits To research stations in 1988?	NR
6-Do you know about the number of research stations in the state?	R*
*significant $\alpha \leq 0.05$	

Data in Table 41 indicate that Extension Agents significantly support all four practices which are discussed below.

Practice one : Do you develop written plans for each seminar?

Extension Agents judged this practice to be more



important with a mean score of 2.7, than the Rural Development Personnel with a mean score of 2.32. The difference was significant at the 0.04 level.

Practice Two: Do you develop demonstration plots for the farmers?

Extension Agents also judged this practice to be more important, with a mean score of 3.14, than the Rural Development Personnel with a mean score of 2.29. The difference was significant at the 0.00 level.

Practice Three: Did you have an extension class in 1989?

Extension Agents judged this practice more important, with a mean score of 2.77, than the Rural Development Personnel with a mean score of 2.14. The difference was significant at the 0.02 level.

Practice Four: Do you know about research stations in the Ostan (state)?

Extension Agents judged this practice more important, with a mean score of 2.50 than Rural Development Personnel with a mean score of 1.97. The difference was significant at the 0.03 level.

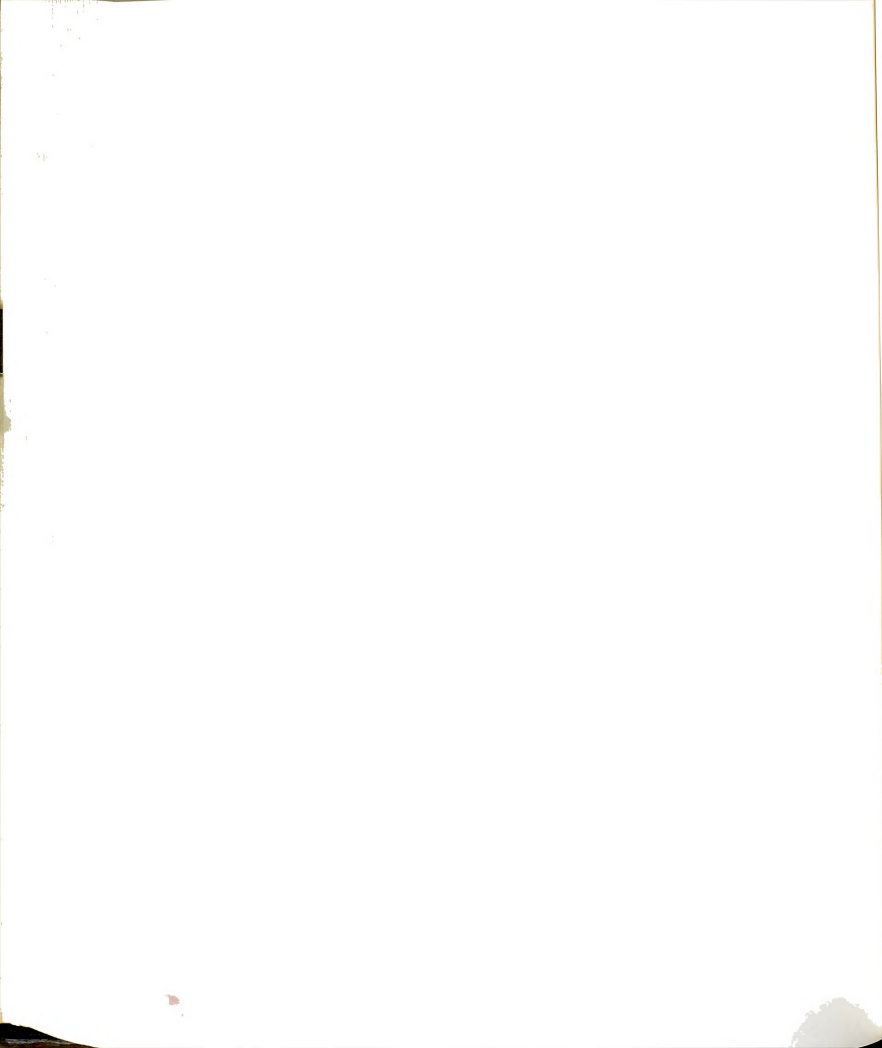


Table 41.--Agent Perceptions Regarding Provision of Assistance to Farmers

Statement	Extension Agents		Rural Development Personnel		
	No Mean S.D	D.F	No Mean S.D	t	p
Do You Develop Written Plans For Each Seminar	44 2.70 0.89	73	31 2.32 0.96	1.74*	0.04
Do you develop demonstration plots for the farmers	44 3.14 0.81	73	31 2.29 1.08	3.81*	0.00
Did You Have Extension classes for the farmers in 1989	44 2.77 1.22	71	29 2.14 1.14	2.02*	0.02
Do you know about research station in state	44 2.50 1.22	73	31 1.97 1.12	1.90*	0.03

* Agents respondent to these items on a 5 point Likert type scale with:
 0 = None 1 = Little
 2 = Some 3 = Much 4 = Very Much
 Degree of freedom = 73 *significant at $\alpha \leq 0.05$

Agent Level of Knowledge of Research Center

Data in Table 42 indicate that Extension Agents were more aware of the research station in Ostan, with a mean score of 2.50, than Rural Development personnel with a mean score of 1.97. The difference was significant at the 0.03 level.

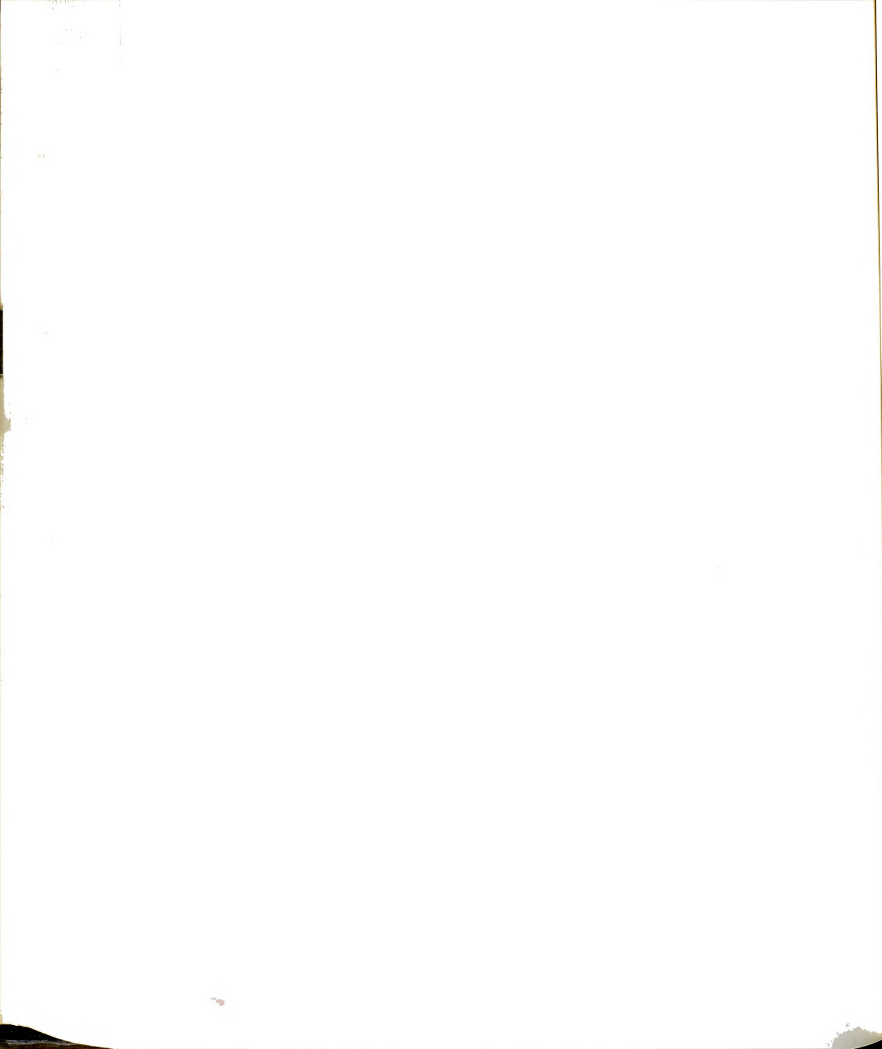


Table 42.--Level of Awareness of Extension Agent and Rural development in relation to Research Centers

Statement	Level of awareness of agent			
	Extension Agent N= 44		Rural development Personnel N = 31	
	Mean S.D	Mean S.D	t	p
Are you informed about the agricultural research station in state	2.16 1.26	1.94 1.16	0.77	0.27
Do you know the number of research stations in the State	2.50 1.22	1.97 1.12	1.90*	0.03

Agents respondent to these items on a 5 point Likert type scale with: 0 = None 1 = Little 2 = Some
3 = Much 4 = Very Much DF = 73

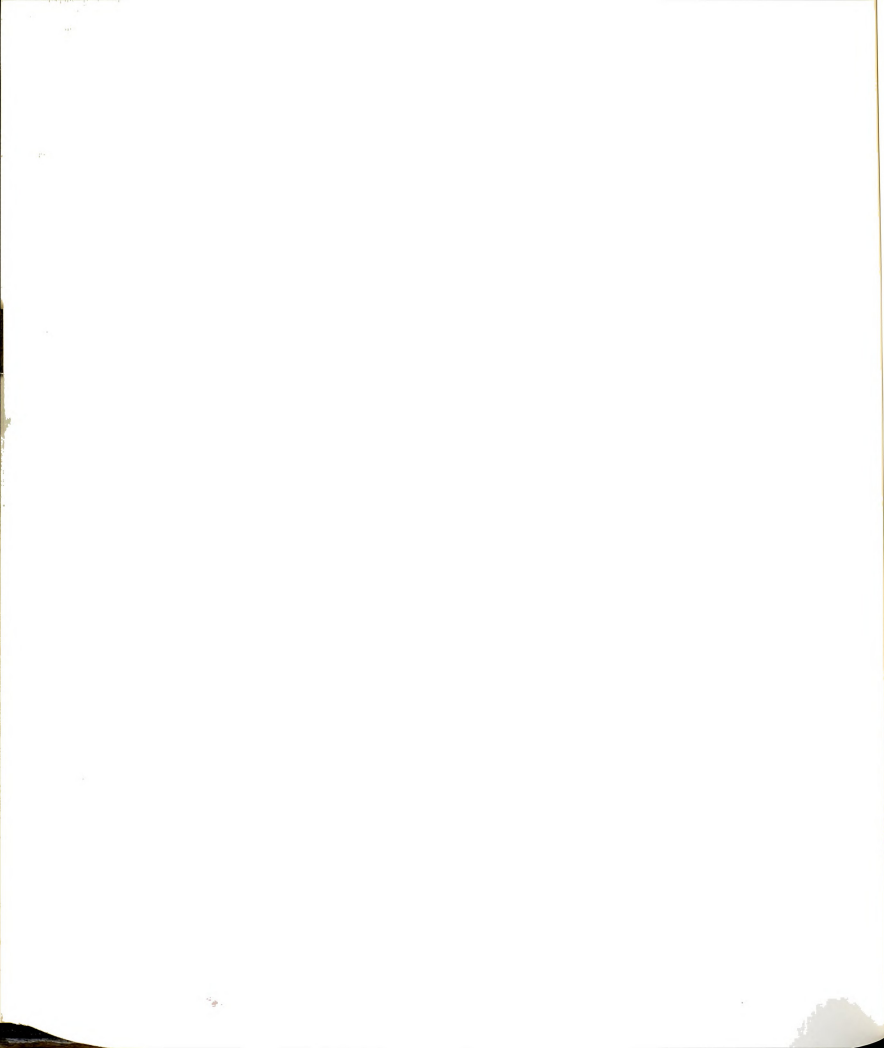
*significant $\alpha \leq 0.05$

Agents' Training Needs

There was no difference between the Extension Agents and Rural Development Personnel perception on each of the areas in which training was needed

$$H_0: \mu_1 = \mu_2$$

The null hypothesis was tested using the t-test to determine whether differences between the variables on the educational needs were statistically significant between the perceptions of Extension Agents and Rural Development Personnel. The results of the t-test from the fifteen areas are reported in Appendix A-12. Ten statements on subject areas were found not to differ significantly between the two groups. The statistical results are summarized in Table 43. Therefore, the null hypothesis was not rejected for five of



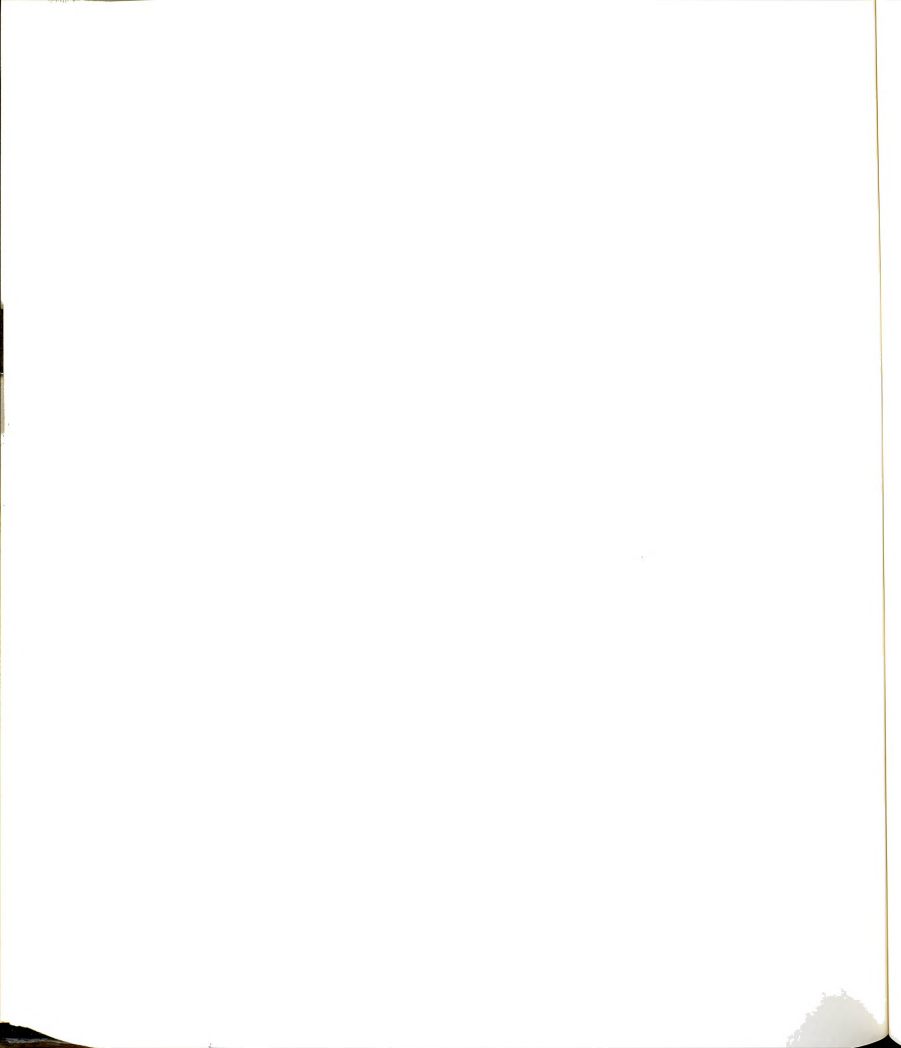
the areas. The ten subjects areas which did differ significantly are presented in Table 44 and are discussed below.

Table 43.--The Result of Null Hypotheses in Relation to the Educational Needs of Extension Agents and Rural Development Personnel

$\alpha = 0.05$	
$H_0 = \mu_1 = \mu_2$	
There was no difference between the two groups in terms of Educational needs by the Extension Agent and Rural Development Personnel	
R = Reject the null	NR = Fail to reject the null
<hr/>	
Tractor Skills	NR
Tractor Operation	R*
Primary Tillage	NR
Secondary Tillage	NR
Row Crop Planter	NR
Harvesting Equipment	NR
No Till Farm Operation	R*
Dry Land Machinery	NR
Post Harvesting Equipment	NR
Irrigation Equipment	R*
Pest Control Equipment	NR
Soil Conservation	R*
Animal Production	NR
Marketing	R*
Management of Research plot	R*

*The results of t- test indicated a statistically significance.

Data in Table 44 illustrate that the Rural Development Personnel were significantly different in relation to their perceptions of training needs. The areas which did differ significantly are discussed as follows. In regard to the statement " Do you need training in Irrigation", the Rural Development Personnel judged that training to be need more



significantly with a mean score of 2.65 when compared to Extension Agents with a mean score of 2.16. The difference was significant at the 0.03 level.

On the statement, "Do you need training in Soil Conservation Equipment", Rural Development Personnel also judged the training to be more significant, with a mean score of 3.13, than did the Extension Agents with mean score of 2.50. The difference was significant at the 0.00 level.

The statement " Do you need training in Marketing" was judged by Rural Development personnel to be needed more significantly, with a mean score of 3.00, than the Extension Agents with a mean score of 2.11. The difference was significant at the 0.00 level.

On the statement " Do you need training in Management of Research plots" Rural Development Personnel judged this training to be significantly more needed, with a mean score of 2.97, than did the Extension Agents with a mean score of 2.16. The difference was significant at the 0.00 level. The areas which did not differ significantly were training needs in tractor skills, tractors operation, primary tillage, secondary tillage, row crop planter, harvesting equipment, no till farm operation, dry Land machinery, post harvesting equipment, pest control equipment, and animal production.

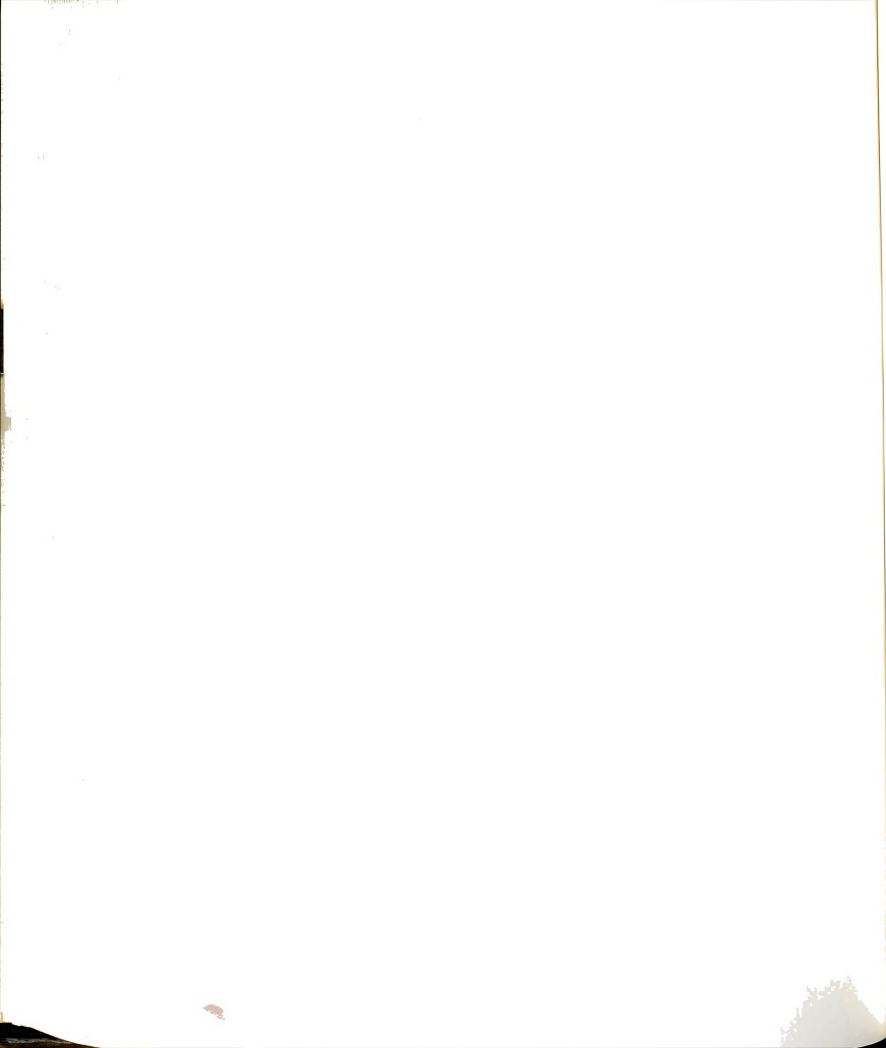


Table 44. Extension Agents' and Rural Development Personnel Perceptions Regarding Training Needs

Area of training	Extension Agent N = 44	Rural Development Personnel N = 31		t	p
	Mean S.D	Mean S.D	DF		
Irrigation	2.16	2.65	73	1.82*	0.03
Equipment	1.17	1.06			
Soil Conservation	2.50	3.13	72	2.50*	0.00
Equipment	1.20	0.83			
Marketing	2.11	3.00	73	3.69*	0.00
	0.98	1.05			
Management of	2.16	2.97	73	3.24*	0.00
Research Plot	1.09	1.00			

Agents Responded to these items on a 4 point Likert type scale with: 0 =none 1 = Much 2 = Some

*The results of t- test indicated a statistically significance.

PART 4 FARMERS PERCEPTIONS

Numbers of Contact With Extension Agents and Rural Development Personnel

Over half 233 (58.25 %) of the farmers responded to this question. Data in Table 45 reveal that 180 (77.2 %) of respondents indicated that they had contact with Extension Agent more than once a year compared to 175 (85.6%) farmers which indicated that they had contact with Rural Development more than once a year.

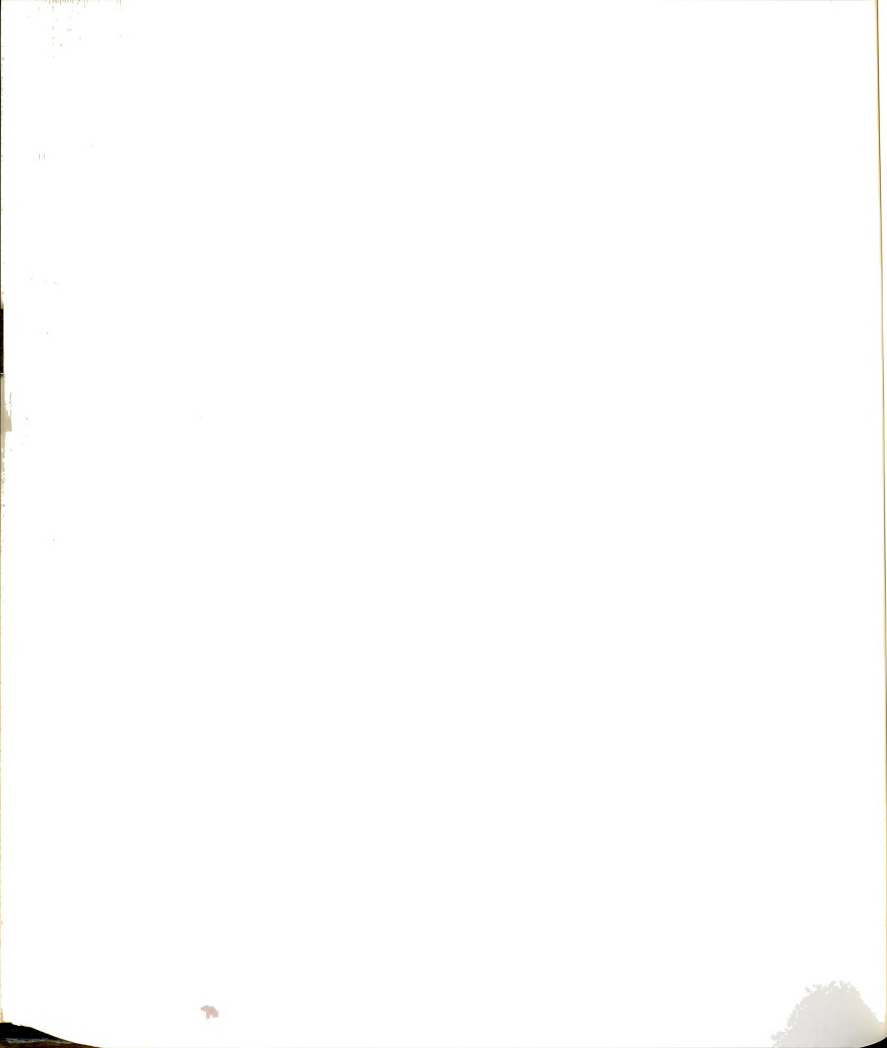


Table 45.--Perception of Farmers in Relation to Number of Contacts with Extension Agents and Rural Development Personnel

Contacts Time	Extension Agent		Rural Development	
	No	(%)	No	(%)
Once in 6 months	036	(15.5)	027	(11.7)
Once in 6-12 months	017	(07.3)	007	(03.7)
More than once/year	180	(77.2)	175	(85.6)
Total	233	100	209	100

Farmers Perception in Relation to Contact with Extension Agents and Rural Development Personnel in 1988.

Data in Table 46 shows that over half of the farmers (57.1 %) had contact with Extension Agents during the year of 1988, and over one half of farmers 208 (52.3%) also indicated that they had contacts with Rural Development Personnel. Almost one half 185 (48.1%) of farmers indicated that they had contact with both Extension Agents and Rural Development Personnel during 1988.

Over two thirds of the farmers 346 (89.9%) responded negatively on the statement "Have you ever been asked by the Extension Agents to participate in the planing of extension activities in your area", compared to 355 (91.5%) farmers for Rural Development Personnel.

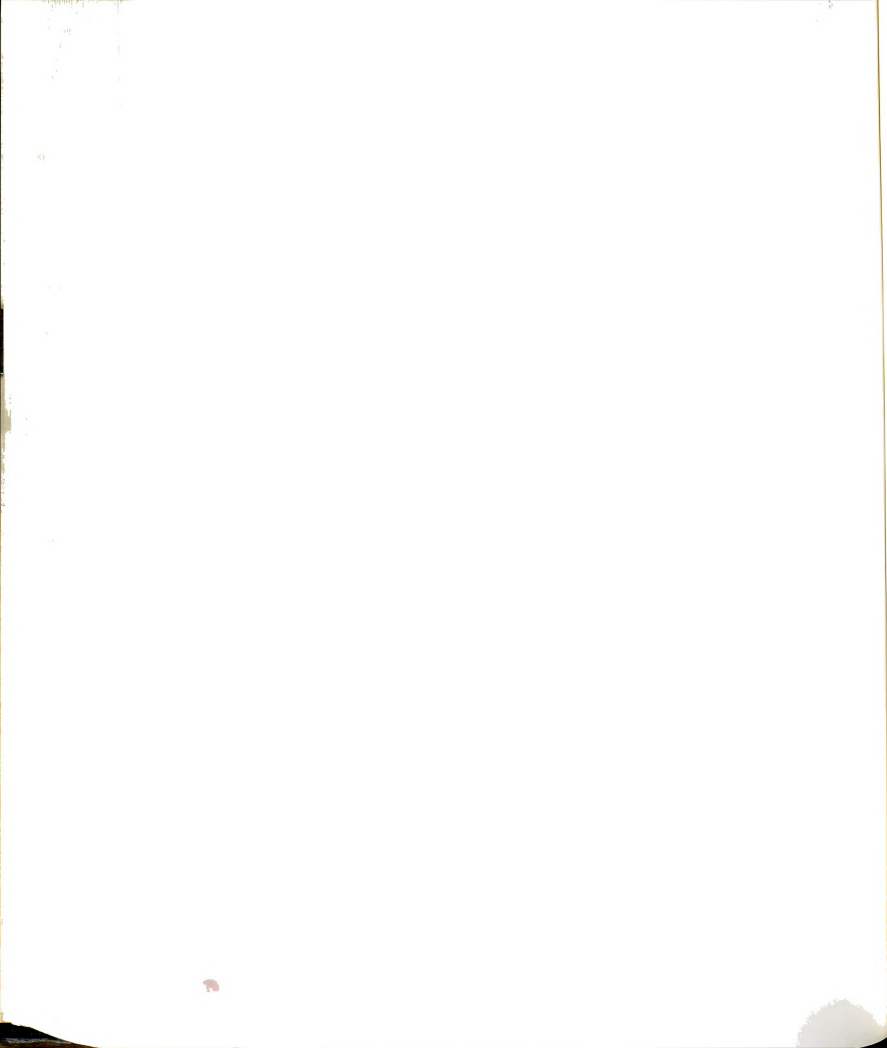


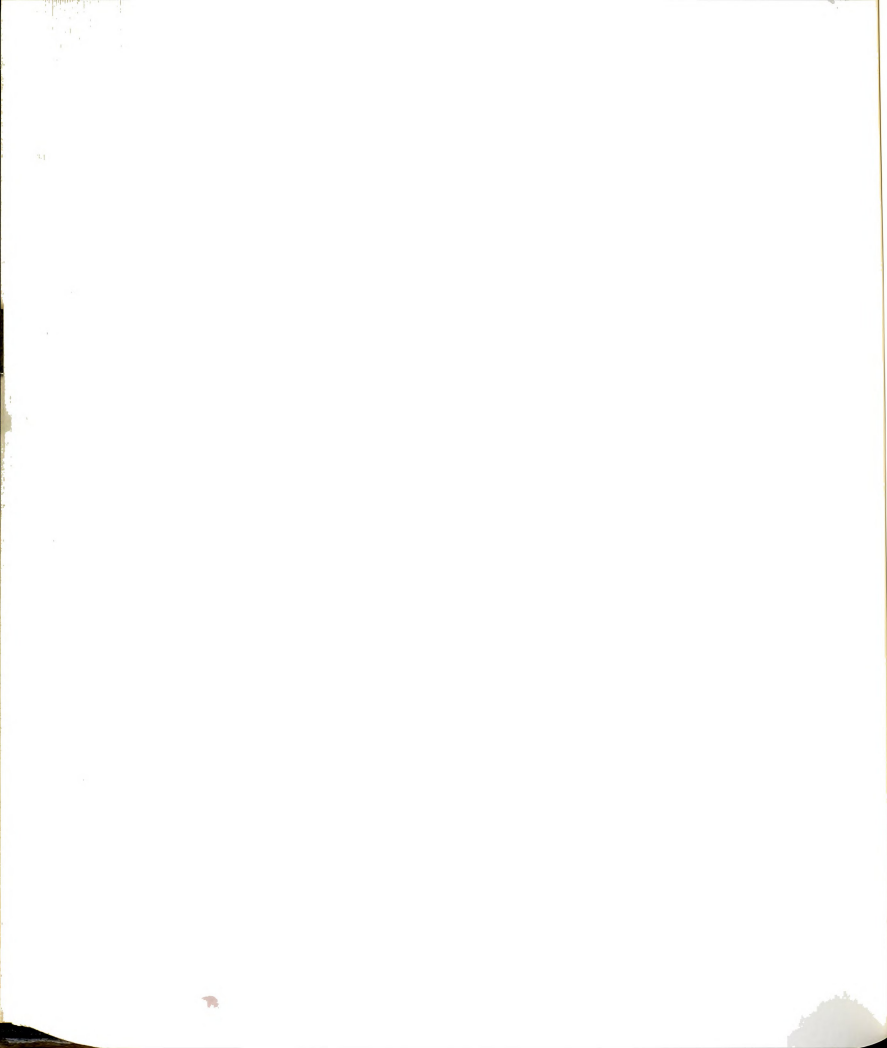
Table 46.--Farmers Perceptions of Linkages With Extension Agents and Rural Development Personnel

Statement	No	Yes (%)	No	(%)
Have contact with Extension agents in 1988	402	230 (57.1)	172	(42.8)
Have contact with Rural Development Personnel in 1988	398	208 (52.3)	190	(47.7)
Have contact with both agents In 1988	390	185 (47.4)	205	(52.6)
Have you ever been asked by the Extension Agents to Participate in the planning of Extension Activities.	382	036 (09.4)	346	(90.6)
Have you ever been asked by the Rural Development Personnel to participate in the planning of extension activities.	388	033 (08.5)	355	(91.5)
Activities were useful when participant- in Extension Planning	065	047 (72.3)	018	(27.7)

*Farmers responded to the linkage perception items on a yes and no type scale.

Farmers, Perceptions of Adoption of Information In Their Farm Practice

Data in Table 47 indicated that the majority of respondents 322 (81.9%) of the farmers obtained information they are using on their farms from others such as neighbors, parents, etc. Only 31 (7.9%) of the farmers responded that the information they were using was learned from Extension



Agent and 21 (5.3%) from Rural Development Personnel. Only 19 (4.8%) of the farmers responded that the information they are using came from both departments.

Table 47. Farmer Perception of Adoption of Information In Their Farm Practice

Groups	Numbers	(%)
Extension Agent	031	07.9
Rural Development Personnel	021	05.3
Others	322	81.9
Both	019	04.8

Farmers Perception of Areas of Advice by Extension Agent and Rural Development Personnel

The data in Appendix A-13 indicate the 21 areas in which the Extension Agents and Rural Development Personnel most often gave advice. Table 48 summarizes the main areas where advice was given by Extension Agents and Rural Development personnel. Data in Table 48 indicate that Extension Agents and Rural Development Personnel gave the same level of service in the areas of crops production, seeds variety and were different in the areas of using pesticides and herbicides. On the subject of soil conservation, Extension Agents ranked fifth compared to Rural Development Personnel which ranked dry land farming fifth.

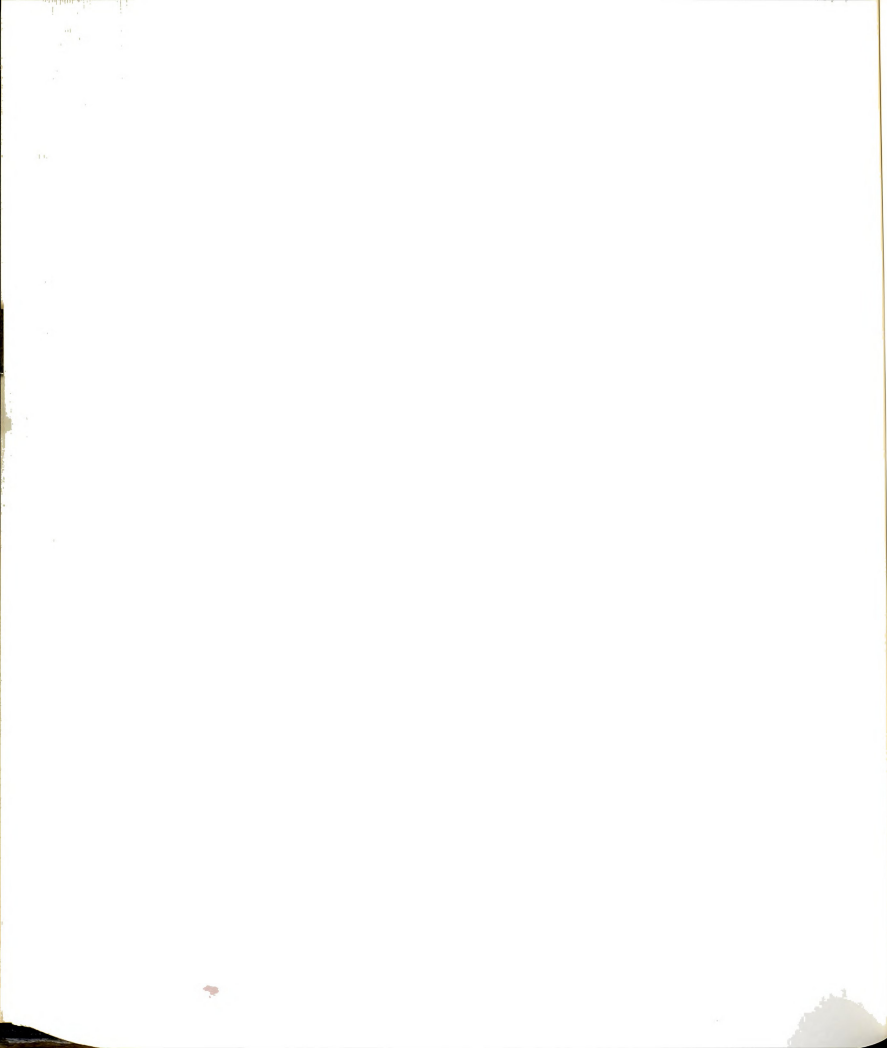


Table 48.--Self Given Ranking of Farmers' Perception
Regarding the Area of Advice By the Agents

	Extension Agents	Rural Development personnel
Areas	Rank order	Rank order
Crops, seeds and fertilizer	1	1
Use of pesticides	2	2
Use of herbicides	3	4
Farm machinery	4	3
Soil conservation	5	-
Dry land farming	-	5

Farmers' Perceptions in Relation to the Extension Education
System.

Data in Table 49 shows 322 (80.9%) of the farmers strongly agreed or agreed on the statement, "collaboration between agencies is important". Almost three-fourth 283 (71.3%) of the farmers also strongly agree or agree with on the statement " collaboration between Extension Agents and Rural Development Personnel is vital to agricultural development". Also, 317 (79.8 %) of the farmers strongly agree or agree on the statement "combining of the two departments is vital to agricultural development".

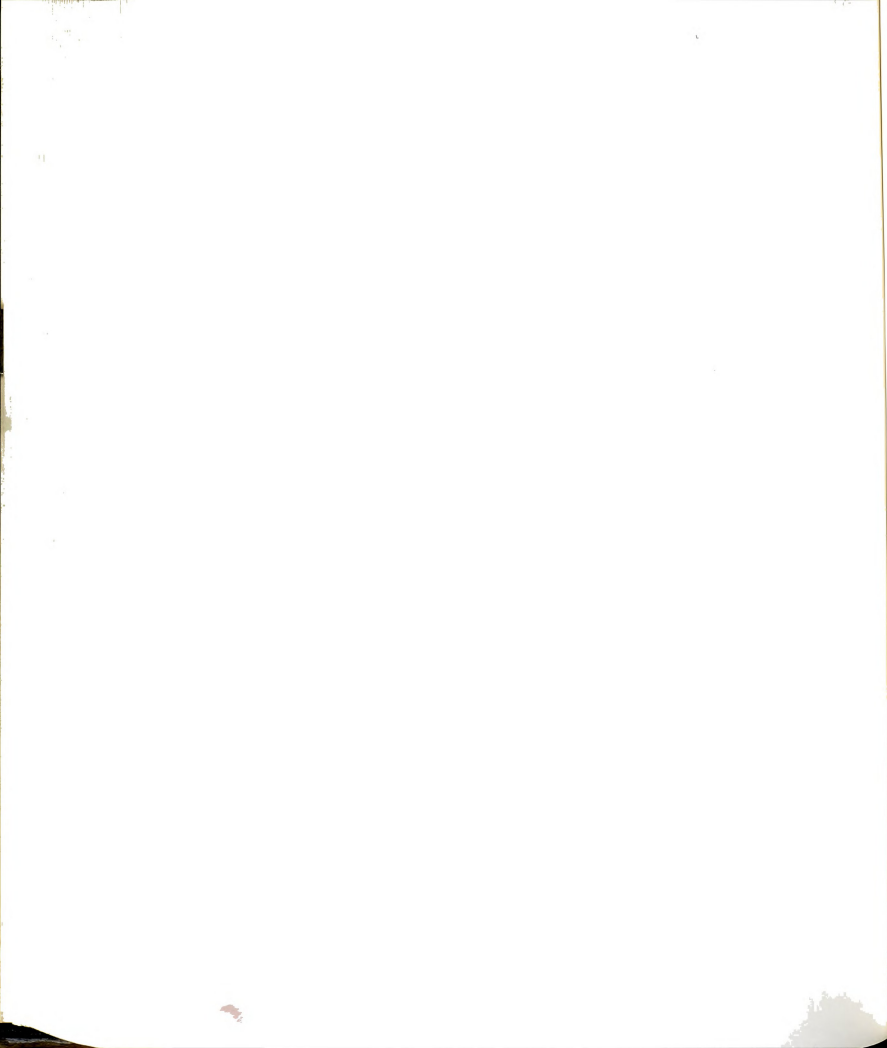


Table 49. Farmers Perceptions in Relation to the Extension Programs.
N=404

Statements	NO	G1*	G2*	G3*
		(%) no	(%) no	(%) no
Collaboration between agencies is important	398	14.9 59	4.3 17	80.9 322
Collaboration is Vital to Agricultural Development	397	21.6 86	7.1 28	71.3 283
Combining the two Departments is vital to Agricultural Development	397	14.6 58	5.5 22	79.8 317

* G1= strongly disagree to disagree

* G2= Neutral

* G3= agree to strongly agree

Farmers' Perceptions in Relation to the Extension Contact

The data in Table 50 indicate that farmers had a negative perception about the number of visits of the Extension Agents and Rural Development Personnel. Two thirds, 296 (74.8%), of the farmers strongly disagreed with the statement, " Rural Development visits me regularly". Also over two third 305 (77.0 %) of the farmers strongly disagreed and disagreed with the statement "the Extension agent visits me regularly".

The majority of farmers strongly agree or agree that Extension Agents and Rural Development Personnel were "rare fish to catch".

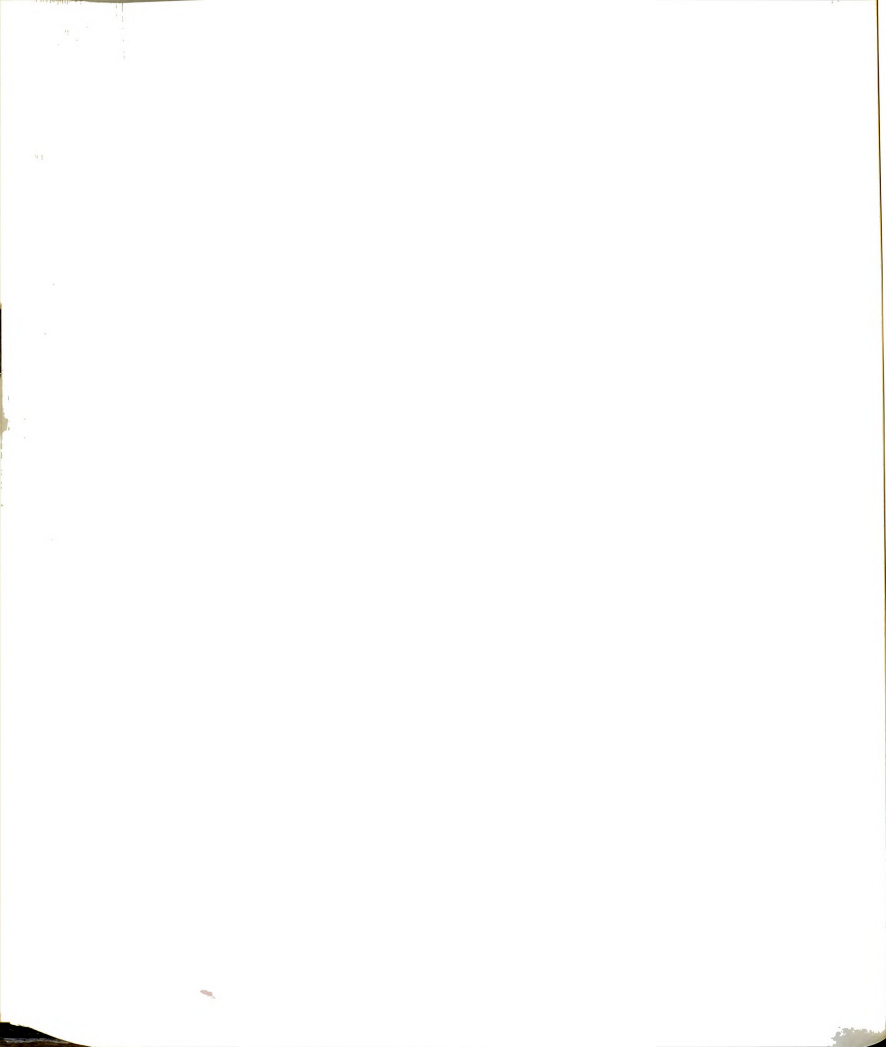


Table 50. Farmers Perception of the Extension Agents and Rural development Personnel Contact in Percentage. N=404

Statements	No	G1*	G2*	G3*
		(%) No	(%) No	(%) No
Rural Development Per- sonnel visits me regularly	396 296	74.8 26	6.6 74	18.7
Extension Agent visits me regularly	396	77.0 305	6.3 25	16.7 66
Extension Agent is a rare fish to catch	395	14.5 57	8.3 33	77.2 305
Rural Development personnel is a rare fish to catch	395	17.5 69	6.8 27	75.7 299

* G1= strongly disagree to disagree * G2= Neutral

* G3= agree to strongly agree

Farmers' Perceptions of the Agents' Effectiveness

Data in Table 51 indicate that 93 (51.1 %) of the farmers believe that none of the organizations (Extension and Rural Development Organization) shared updated information.

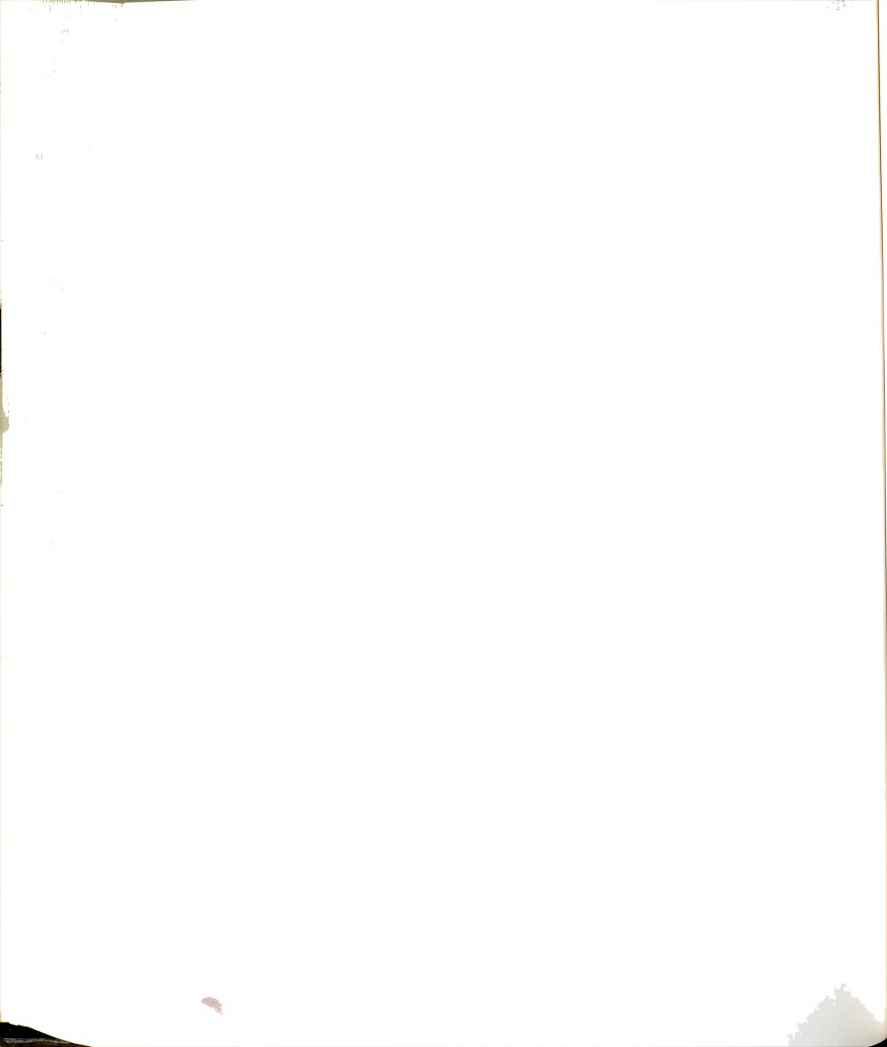
On the statement "Which Agency's field personnel do you consider more competent in solving your problems", almost half 195 (49.5 %) of the farmers indicated neither agents are more competent.

Also on the statement " which agency provides better answers to your needs", over one half 231 (58.4 %) indicated neither. On the statement, " which agency do you

prefer to visit more frequently", 125 (31.7 %) indicated that they preferred to be visited by the Extension Agents, and 85 (21.6 %) indicated that they preferred to be by visit Rural Development Personnel. Eighty two (20.8 %) indicated that they preferred to be visited by both agents, and 102 (25.9 %) indicated that they preferred neither.

Table 51. Farmers Perceptions of the Provision of Assistance by the Agents

Statement		G1	G2	G3	G4
	Numbers	No	No	No	No
	Respond	(%)	(%)	(%)	(%)
Which agency shares more updated information?	182	42 23	34 19	13 07	93 51
Which agency's field Personnel do you consider more competent in solving your farm problems?	398	76 19	64 16	63 16	195 49
Which agency has more has more frequent contact with you?	397	79 20	86 22	24 06	208 52
Which agency has helped you more to solve your farm problems?	398	82 21	52 13	33 08	231 58
Which agency provides better answers to your needs?	399	78 20	57 14	31 08	233 58
Which agency do you prefer to visit more frequently?	394	125 32	85 22	82 21	102 26
G1 = Extension agents G2 = Rural Development personnel G2 = both agents G4 = neither of the agents					



CHAPTER SIX

Summary - Conclusions - Recommendations

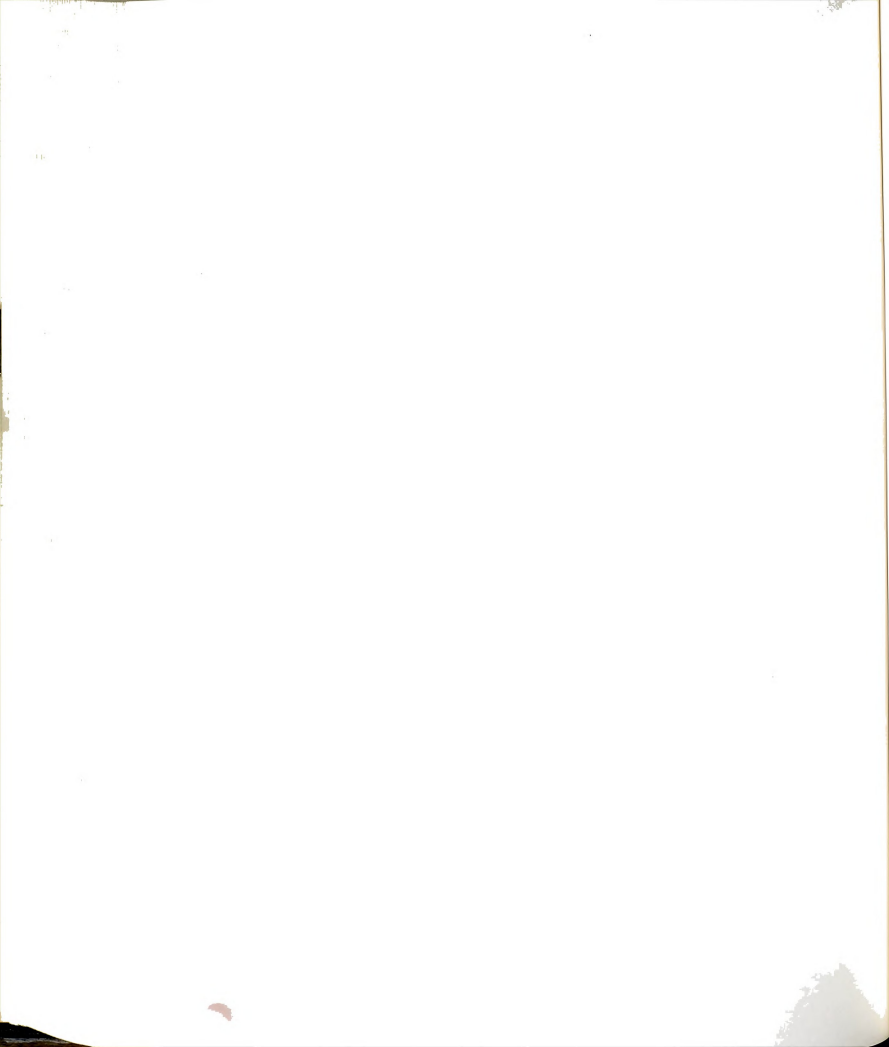
Summary

This chapter reviews the purpose and objectives of the study, summarizes the major findings and draws conclusions, and recommendations.

Need for the study: For a decade there was uncertainty about decision making for agricultural development in I.R.I. Too much investment of manpower and planning for agricultural development had not produced good results in some areas. The agricultural sector of Iran had experienced low growth rates since the 1979 Revolution. (Mojtahadi and Esfahani, 1982)

There have been continuous decreases in the production of certain food crops such as potato, sugar beets, cotton, soybean, etc. Officially, decreases have been attributed to:

1. Uncertainty of governmental policy on ownership of land.
2. Unavailability of input supply and resources (due to war and black market.
3. Lack of technical information for farmers
4. Lack of single technical support organizational structure.
5. Insufficient supervision and management



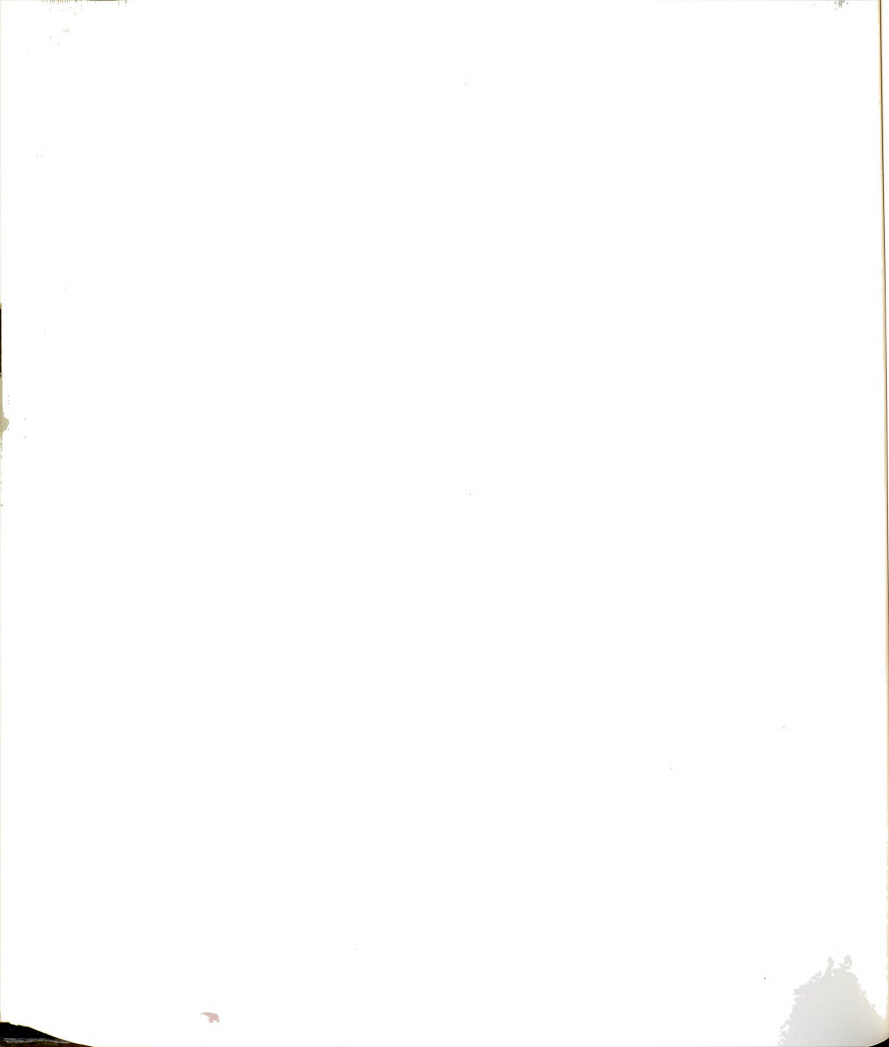
6. Multiple tasks of Extension Agents and Rural Development Personnel.
7. Inadequate incentives in the form of status, training and upward mobility to the Extension Agent and Rural Development Personnel
8. Lack of coverage and regular contact between Extension Agents or Rural Development Personnel and farmers.
9. Lack of coordination and linkage between extension research and farmers.
10. Lack of sufficient farm income for farmers.

This study contributes knowledge that can be applied to situations that are of concern to the State of Khorrassan in organizations (Agricultural Extension and Rural Development and research centers) that have responsibility for planning of agricultural extension for rural agricultural development.

Purposes of the Study: The purpose of this study was to compare the activities of two agricultural extension services currently offered by two ministries (Ministry of Agriculture and Ministry of Jihad) in the State of Khorrassan.

Objectives of the Study: The objective of the study were to:

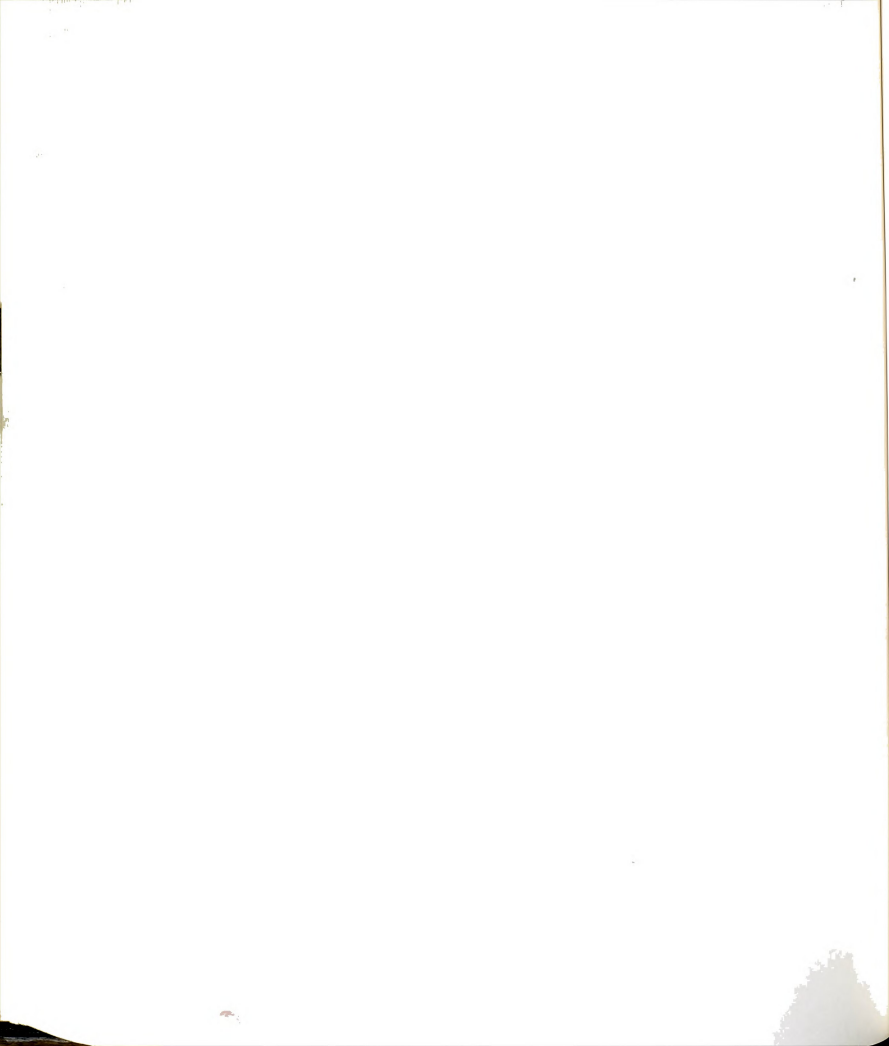
1. Describe and compare the agricultural extension approaches of the two agencies (Department of Agriculture in the Ministry of Agriculture, and the Department of Jihad in



the Ministry of Jihad) in terms of:

- a. characteristics of organization and staffing.
 - b. purposes and types of extension activities and/or teaching methods followed.
 - c. preparation of extension workers (such as educational level and subject areas such as farm machinery, pest control, horticulture, crop and soil, etc.)
 - d. established linkages with the research station, agricultural colleges, agricultural supplies and services such as the farm machinery organization and cooperative agencies.
 - e. provision of assistance to farmers.
2. To compare the perceptions of the directors of Jihad and Extension with respect to their own and each others' agency purposes and expectations.
 3. Describe and compare the extent and the way in which the two agencies contribute to expanding the knowledge and adoption of improved farm practices among farmers.
 4. Compare the perceptions of the farmers, extension agents and rural development personnel regarding the effectiveness of the extension service extended by the two agencies.

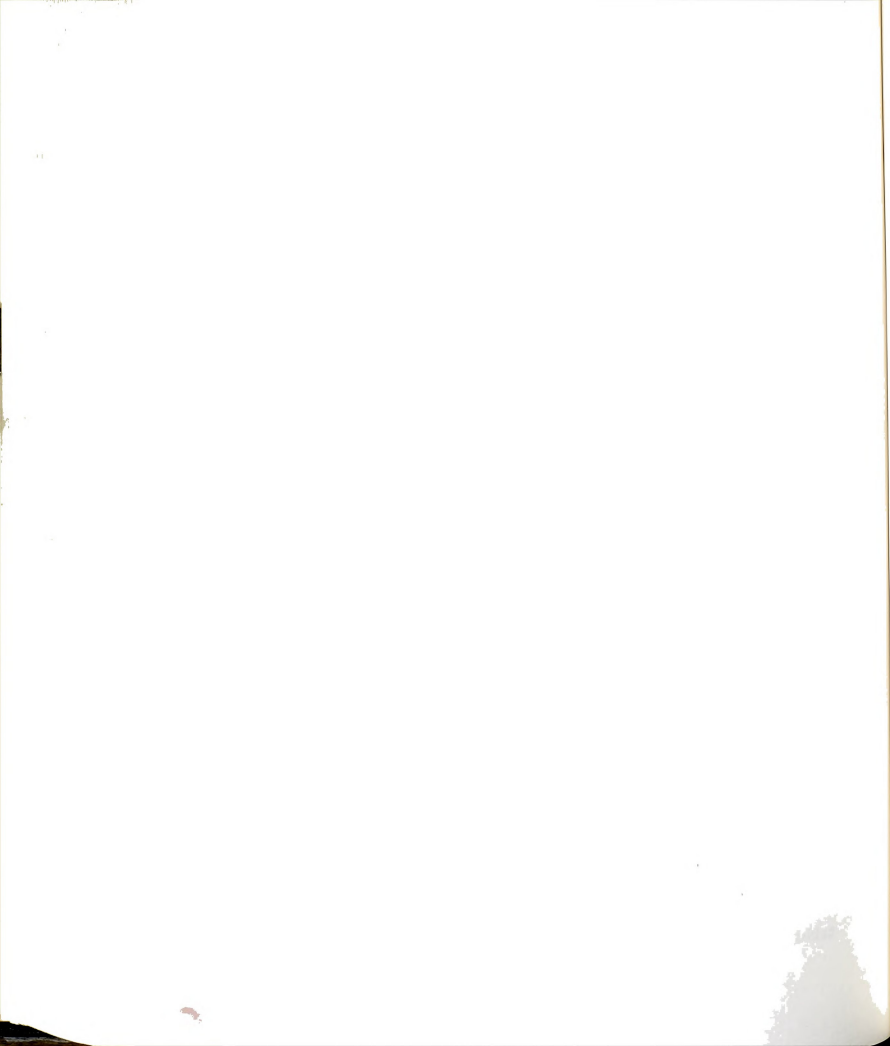
Methods and Procedures: Opinions were sought about the



linkage between farmers and Extension Agents, Rural Development Personnel, and Extension Agents with research centers, educational organizations (universities and colleges of agriculture) and the support organizations such as farm machinery organization, fertilizer distribution centers, and rural cooperatives. Opinions were also sought regarding teaching methods preferred, area of teaching, and purpose of extension, as well as opinions about collaboration and combining the two ministries. Extension Directors, Rural Development Directors, Extension Agents, Rural Development Personnel, and farmers were selected for the survey population in the State of Khorassan in IRI. Mailed questionnaires and interview schedules were used to collect information. Data were collected in Iran from January 15 to April 20, 1990.

Content validity of the instruments was established by a panel of experts. The final instruments were field tested to obtain reliability of the responses. Five extension agents, five rural development personnel and ten farmers were used as a check on reliability. Based on the field test results, minor revision were made on the final instrument.

The measurement of perceptions was primarily used to provide information about the research questions. Data collected from the sample population were compiled, tabulated and analyzed in accordance with the objectives of



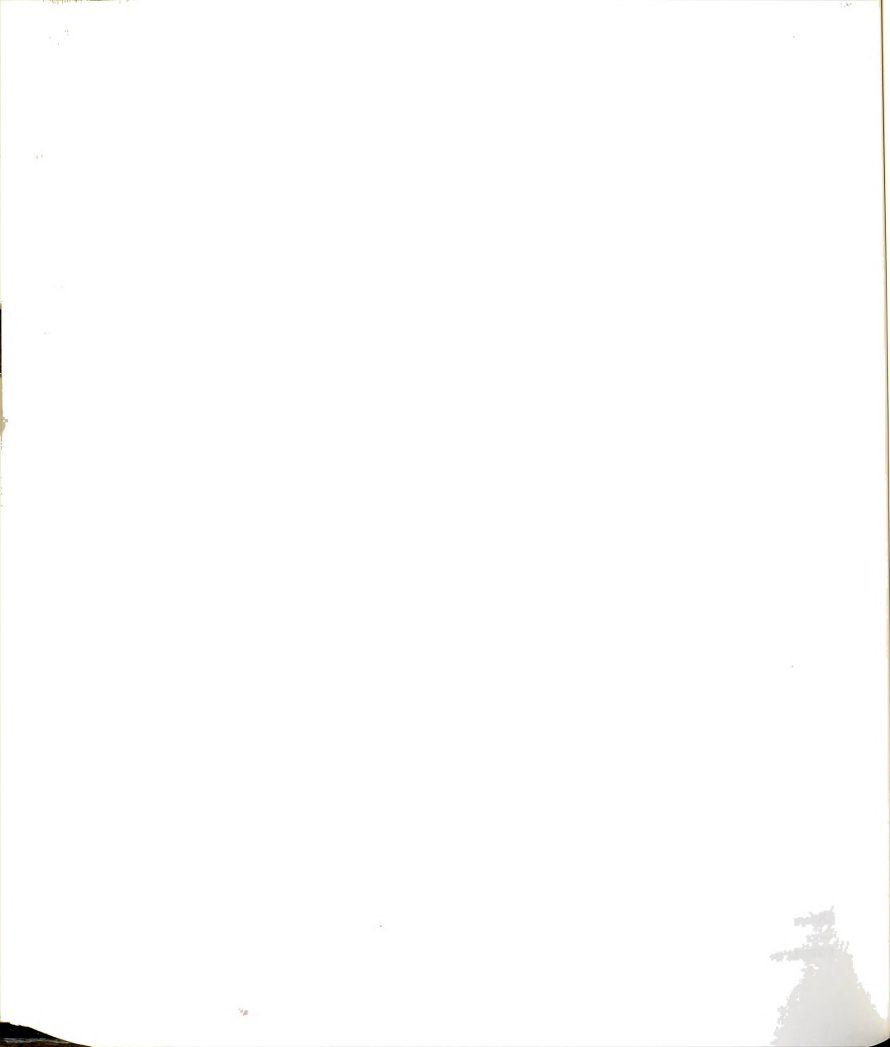
the study. Such statistical measures as number, percentage, mean, and standard deviation were calculated. ANOVA and t-tests were used to compare similarities and differences of perception and attitudes between the two organizations. An alpha level of .05 was used as a basis for rejecting any null hypothesis.

Study Finding Question 1: What were the Personal Characteristics of the survey population?

Almost three-fourths (71%) of the Extension Agents were 26 to 44 years of age. Eighty percent of the Rural Development Personnel were 26 to 44 years old compared to six percent in the age group 25 years and younger and only three percent of the Rural Development Personnel were between 35 to 39 years old. All the Rural Development Personnel were male and married.

More than one-half (54%) of the farmers were 50 years and over and 99 percent of them were male.

Education: More than three-fourths (78%) of Extension Directors and more than two-fifths (42%) of Rural Development Directors had bachelor's degrees. The majority (64%) of the Extension Agents held high school diplomas in agriculture and only five percent had BS degrees. More than two-fifths (45%) of the Rural Development Personnel had High school diplomas in areas other than agriculture. More than three-fifths (63%) of the farmers had no formal education compared to 23 percent who had 4-6 years of education; nine



percent had 1-3 years, and only four percent had 7-9 years of school education.

The results showed that there was a high percentage of illiteracy among farmers in the rural community. Directors of Extension placed more emphasis on office calls and group teaching methods than did the Rural Development Department. Office calls were preferred by Extension Agents whereas demonstration methods were preferred by Rural Development Personnel.

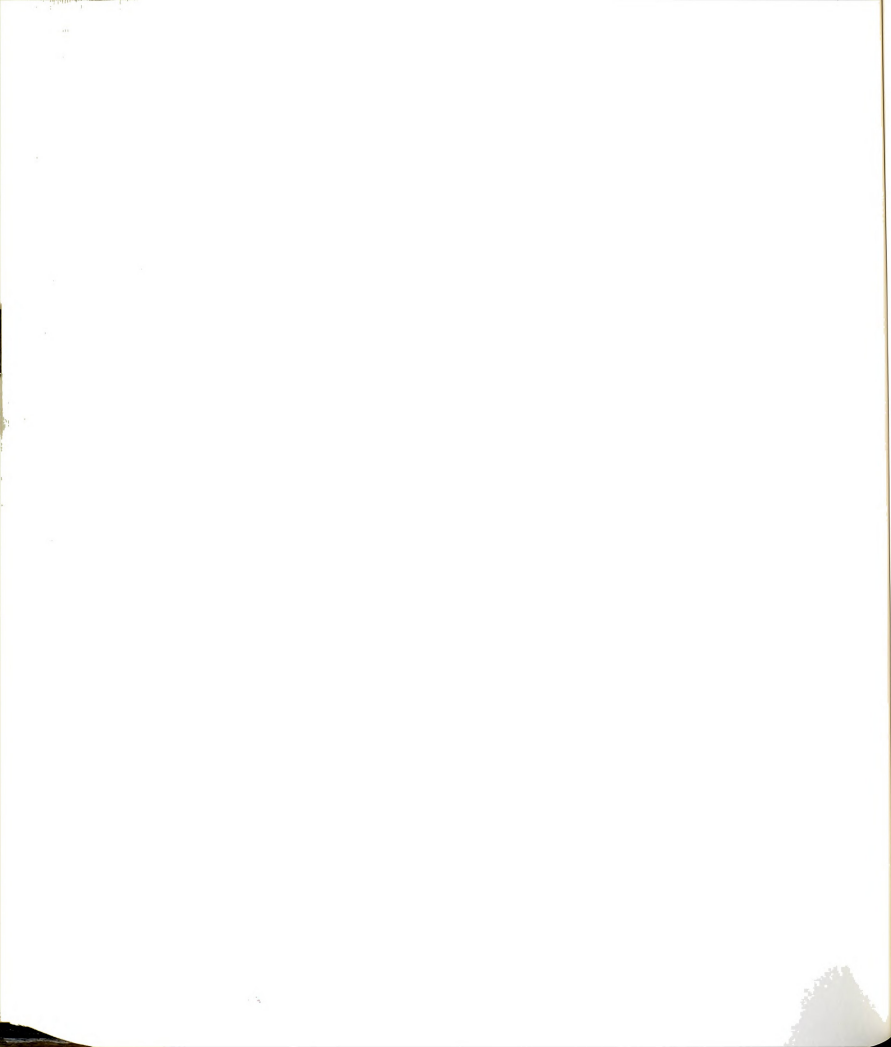
Experience and Activities: One-half (50%) of Extension Directors and the majority (72%) of Rural Development Directors had experience of between one to five years. The majority (58%) of farm training courses/ workshop activities during 1988 were held by Extension Directors while 42 % were held by Rural Development Directors.

The highest proportion (69%) of farm field day activities were offered by Extension Directors, while 31 percent were held by Rural Development Directors.

The majority (65%) of radio listening groups were organized by Rural Development compared to 35 percent organized by Extension Directors.

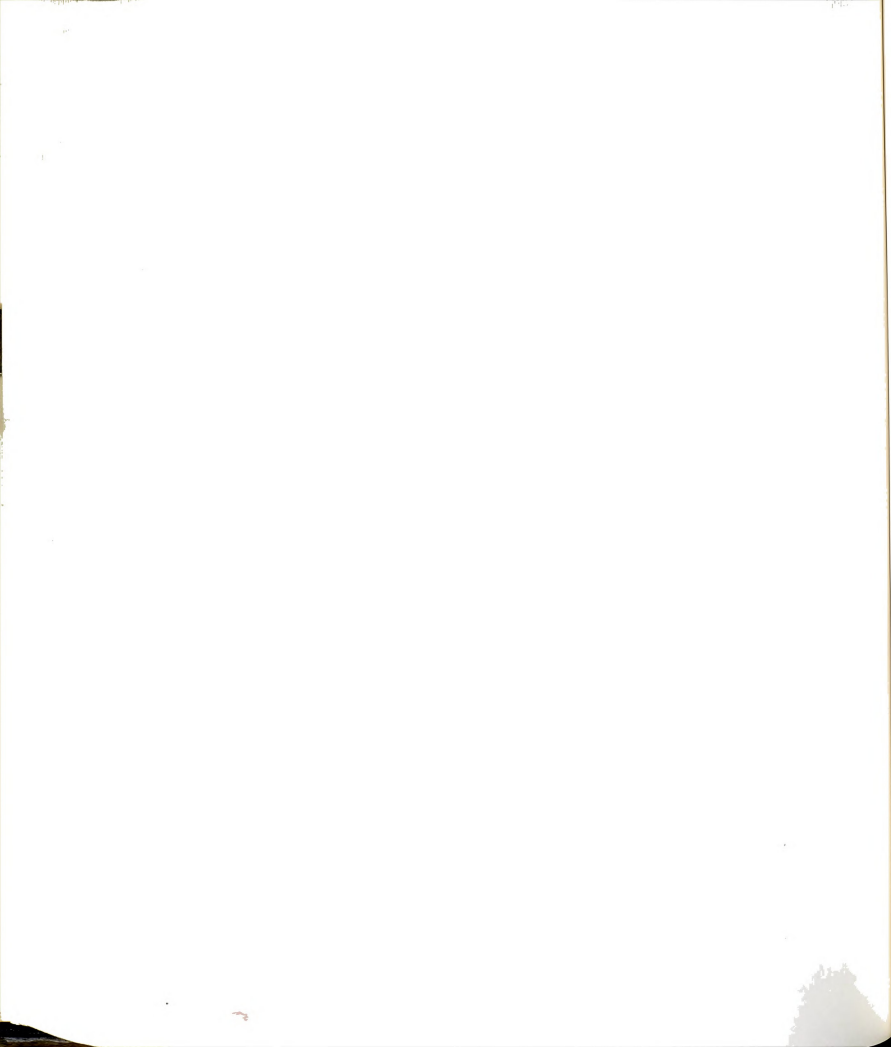
In terms of group tour activities, the major proportion (67%) was organized by Extension Directors compared to 33 percent by Rural Development Directors. Both groups of directors were similar in farmer contacts (50%).

Specialty and Years in Extension Profession: The majority



(84%) of Extension Agents had specialties in general agricultur and 55 % of Rural Development Personnel had specialties in general agriculture. Over three-fifth of the Extension Agents had agricultural diplomas, and 45% of the Rural Development Personnel had diplomas in social science or marketing besides agriculture. Almost one-half (48%) of the Extension Agents had 15 to 24 years experience in the extension profession. More than one half (55%) of the Rural Development Personnel had Bachelor degrees in general agriculture, compared to three percent of the Extension Agents. About 10 percent of Rural Development personnel held specialties in farm machinery, and 13 percent had specialties in areas other than agriculture. Most of the Rural Development Personnel (65%) had one to nine years of experience in the Extension profession.

Subject Area Advised: A significant difference was found on subject areas between the Extension Directors and Rural Development Directors. Extension Directors gave more support on subject areas such as "fertilizer, growing vegetables, and fruit trees" than the Rural Development Directors. On the other hand Rural Development Directors conferred high priority on subject areas such as dry land farming, tillage practice, tillage equipment, credit, market price, and farm cooperative. Rural Development Directors judged these subject areas significantly more important than did the Extension Directors.



How comfortable were Extension Agents and Rural Development personnel in Agricultural subjects?

Extension Agents judged the areas of crops, pest control, animal production, poultry production, irrigation, cooperative extension, beekeeping, institutional work, farm loan, and demonstration plot to be more significantly related to skills and understanding of the farmers than did Rural Development Personnel.

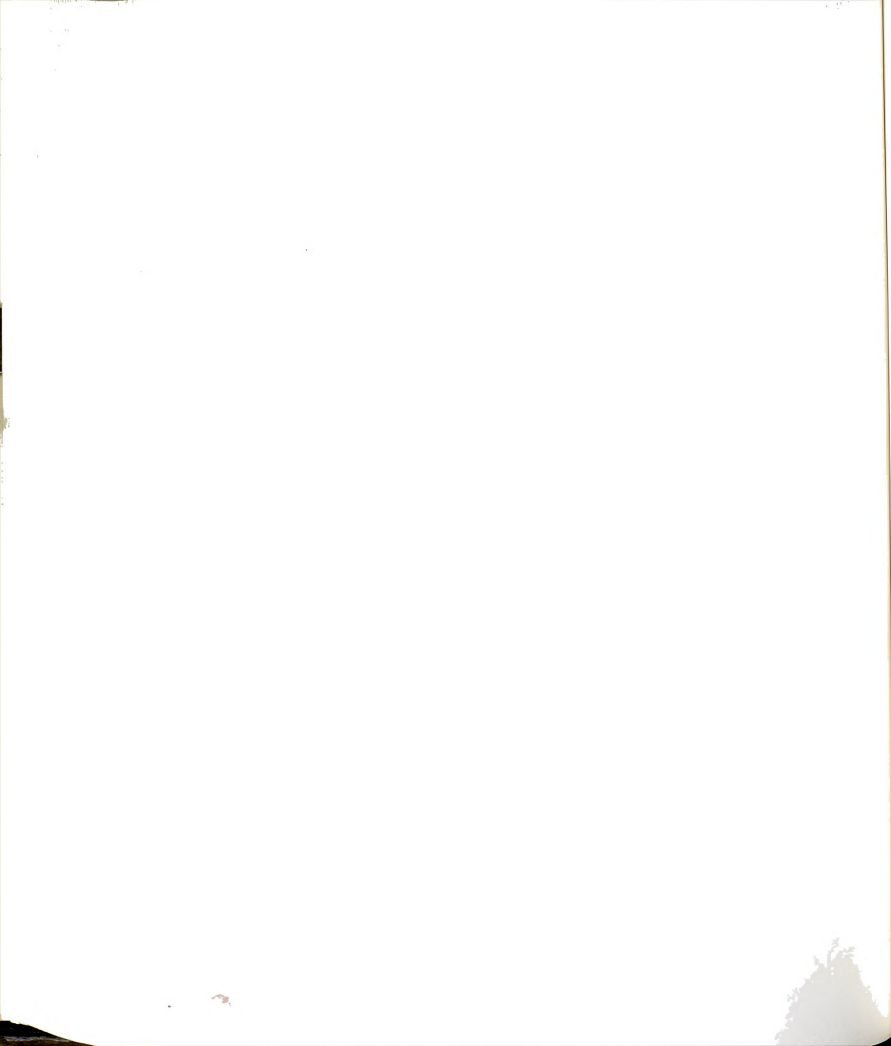
Ranking of Knowledge and Skills by Extension Agents and Rural Development Personnel

Extension Agents put more emphasis on demonstration plot, crop production, animal health, tillage practice, farm loan, pest control, irrigation, forage production, dry land farming, and farm management, while Rural Development Personnel put more emphasis on forage production, crop production, tillage practice, demonstration plots, animal health, dry land farming, pest control, farm loan, irrigation, and farm management.

Land ownership, size of farm, and incomes: One-half (50%) of the farmers had a farm size of from one to five hectares. Almost four-fifths (79%) of the farmers had their own farm. The majority (65%) of farmers had an income of between 20,000 to 80,000 tomans per year.

Study Finding Question 2: Was there a significant difference between the perception of Extension and Rural Development Directors regarding the purpose of Extension Education?

There were no significant differences on the



educational statement, self direction, support services, and need assessment. Extension Directors and Rural Development Directors were similar in their educational perceptions of the extension programs.

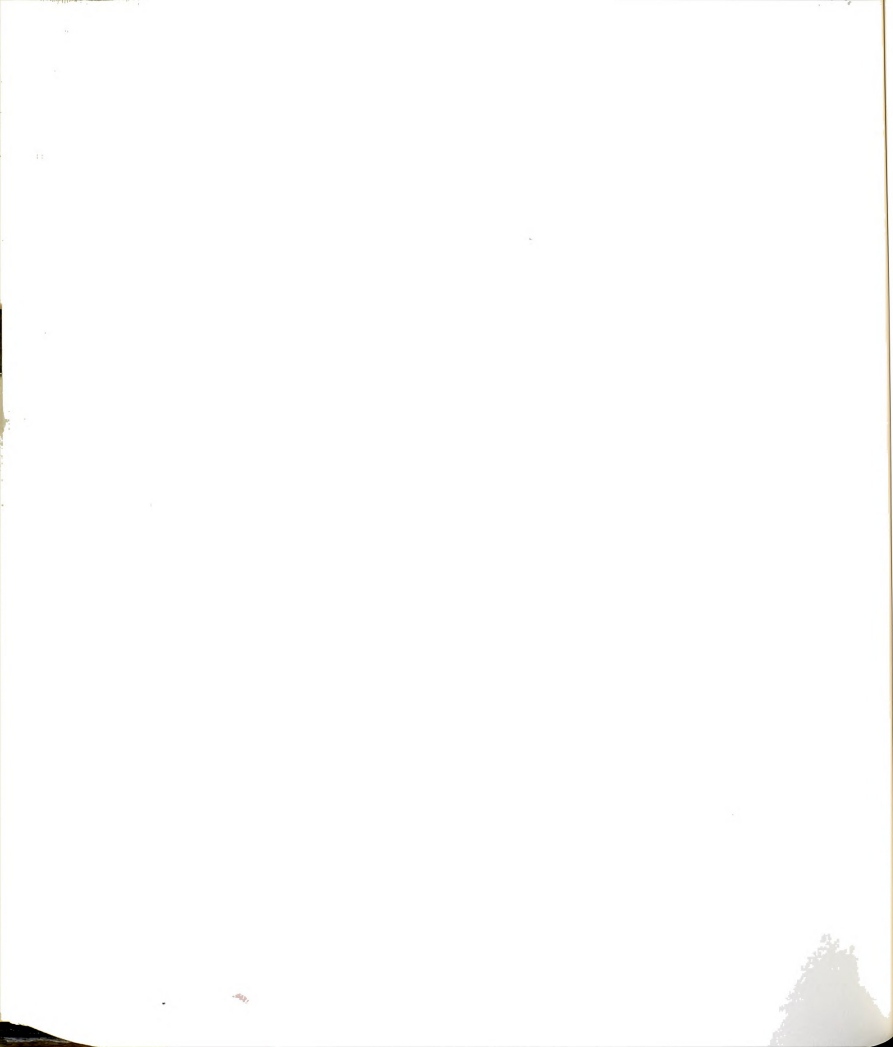
Study finding Question 3: Was there a significant difference between the perception of Extension and Rural Development Directors regarding the client served?

Significant differences were found in the five statements in the client section. Extension Directors indicated more support with the statements: 1) Serving large scale farmers; 2) Serving farmers dealing with vegetables; and 3) Serving farmers dealing with horticulture than did Rural Development Directors. On the other hand Rural Development Directors addressed more support to the statements "Serving small scale farmers". The Rural Development Directors gave greater emphasis to serving dry land farmers than did the Extension Directors.

Study finding Question 4: Was there a significant difference between the perception of Extension and Rural Development Directors regarding the teaching methods preferred and applied by the two department?

The Rural Development Directors paid less attention to the statements, "Importance of using newspapers as a teaching method", and "Importance of using the telephone as a teaching method" than did the Extension Directors.

A significant difference was found between Extension



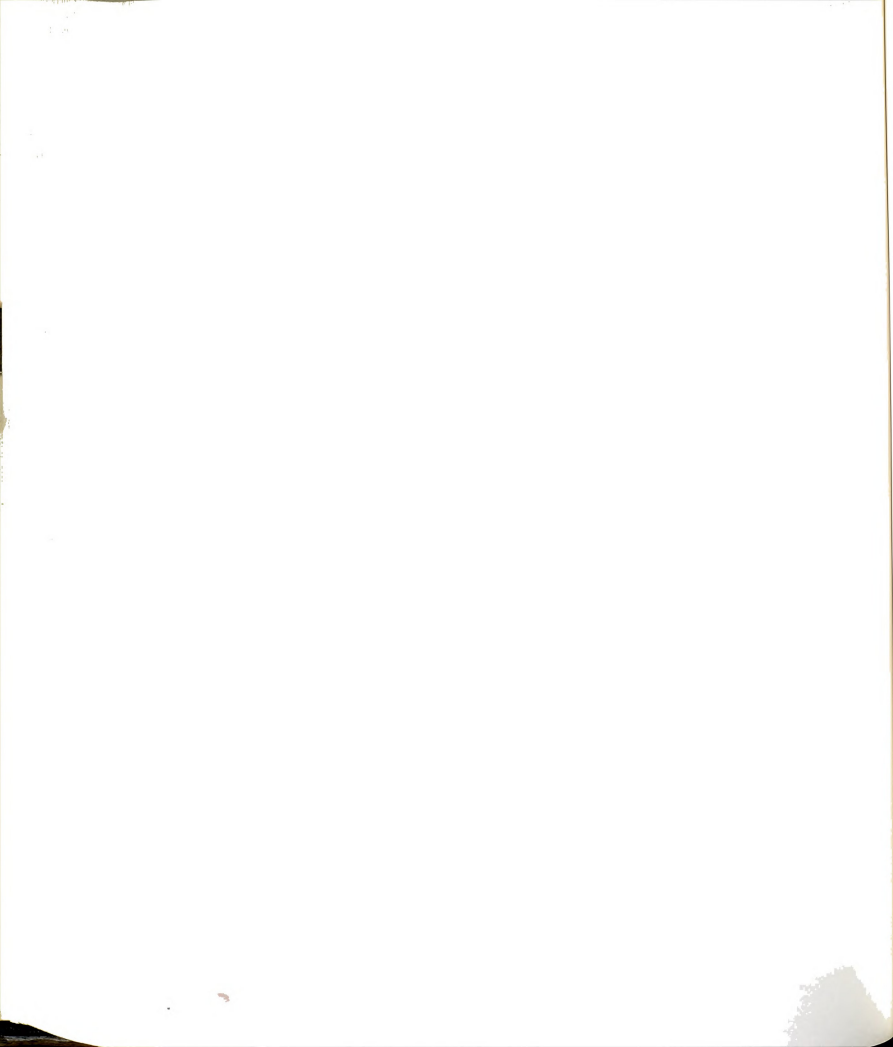
Directors and Rural Development Directors on the statement, "Importance of office calls as a teaching method." The Extension Directors judged this practice to be more important than Rural Development Directors. On the statements, "Importance of using telephone as a teaching method", and "importance of group teaching methods" Extension Directors supported both statement.

Study finding Question 5: Was there a significant difference between the perception of Extension Agent and Rural Development Personnel regarding the teaching methods applied by the two department?

Eighteen teaching methods out of twenty, such as "farm visits, using letters, agricultural exhibits, farmers classes, field demonstrations, group meeting, field trips, group projects, leaflets, pictorial illustrations, using T.V, newsletters, radio, films and slides, videos, posters and charts, manuals, and others (role play and theater)" were supported by the two directors. Significant difference was not found between the two directors. Extension Agents judged the practice of office calls to be significantly more important than did Rural Development Personnel. Rural Development Personnel judged the statement "using live specimens and samples as a teaching methods" to be more significant than did Extension Agents.

Agents' priority ranking of teaching methods

The highest proportion (43%) of the Extension Agents conferred high priority to individual, while Rural



Development Personnel gave high priority (65%) to group teaching methods. Both groups gave low priority to mass media teaching activities, (70%) for Extension and (59%) for Rural Development.

Study Finding Question 6: Was there a significant difference between the perception of Extension and Rural Development Directors regarding assistance to farmers especially:

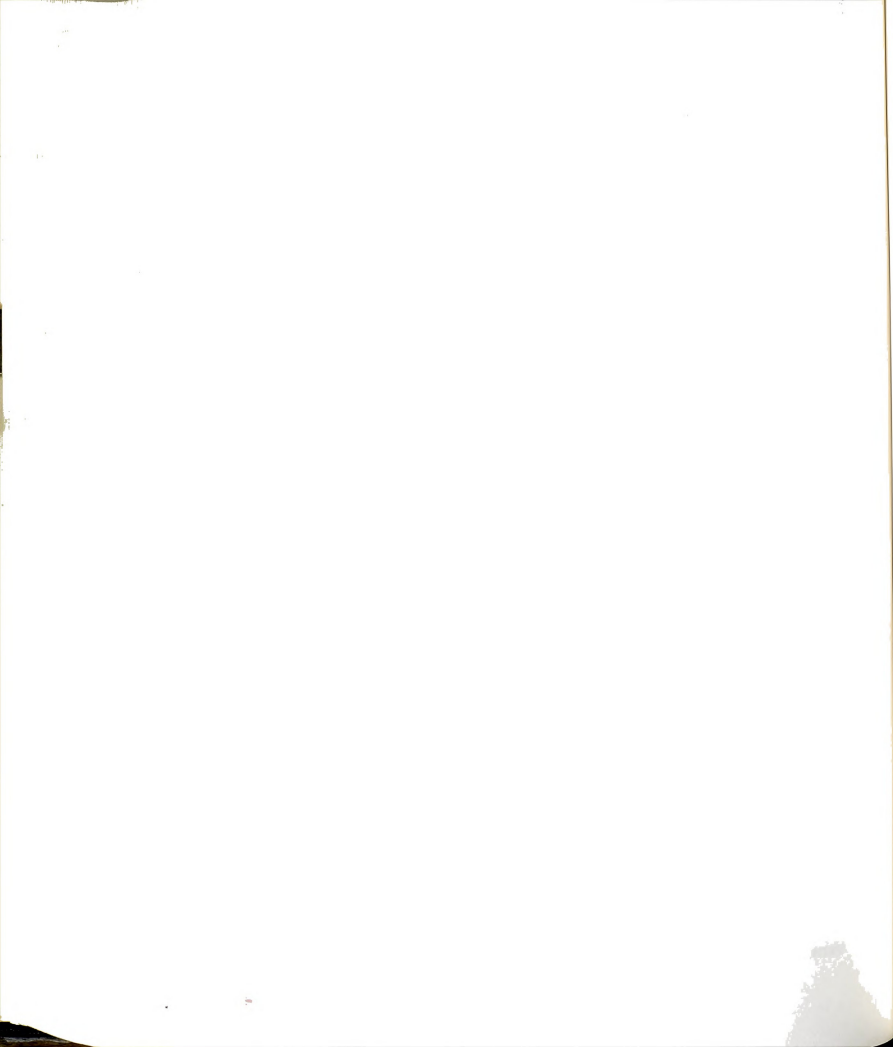
- a. small scale farmers?
- b. large scale farmers?

The Rural Development Directors emphasized serving small scale farmers, whereas the Extension Directors emphasized serving large scale farmers.

The Extension Directors judged the statement "Serving farmers dealing with horticulture", and "Serving farmers dealing with vegetables crops", to be significantly more important than did the Rural Development Directors. Regarding the statement "Serving farmers dealing with dry land farms", Extension Directors judged this practice to be less significant than did the Rural Development Directors.

Study finding Question 7: Was there a difference between the perception of Extension Agents and Rural development Personnel regarding Provision of assistance to farmers?

Extension Agents significantly supported the statements concerning the provision of assistance to the farmers compared to Rural Development Personnel. The statements were 1) "Do you develop written plans for each seminar, 2)



Do you develop demonstration plots for the farmers, 3) To what extent do your extension activities educate the farmers, 4) Did you have extension class in 1988, and 5) Do you know about the number of research stations in the state.

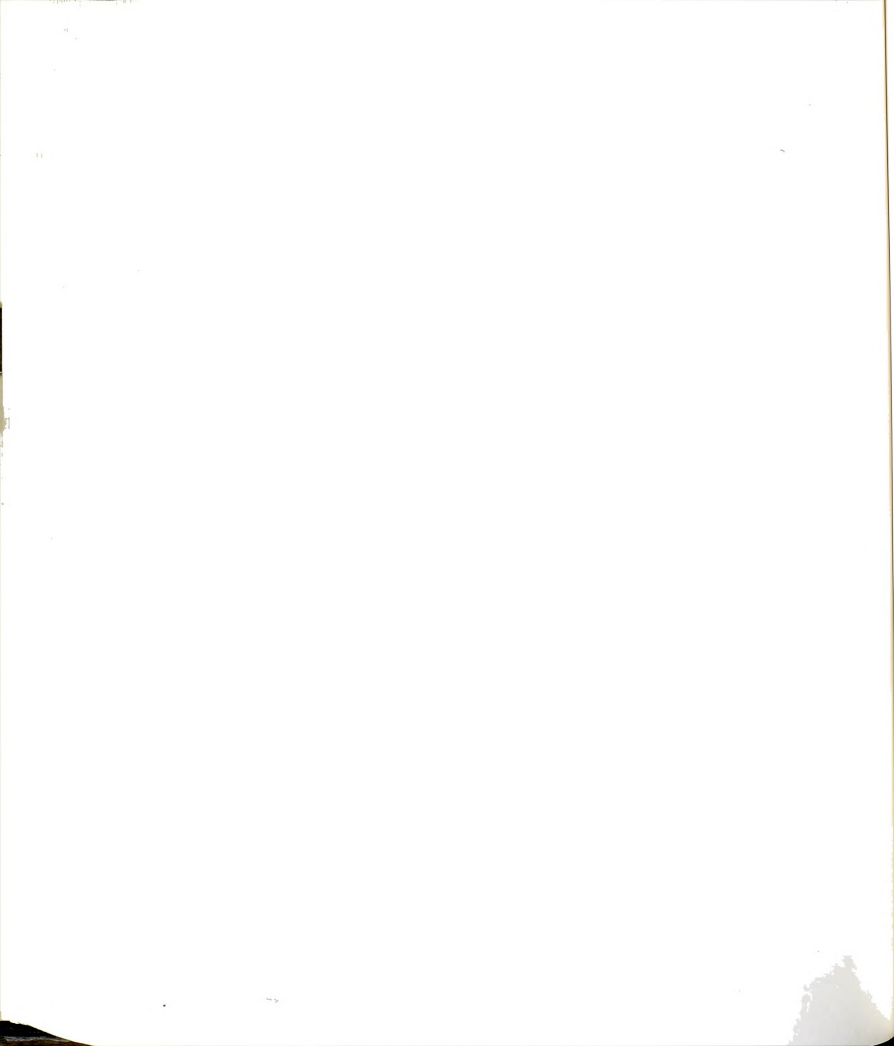
Study finding Question 8: Was there a difference between the perception of Extension Agents and Rural development Personnel regarding their linkage with agricultural related organization?

Each of the respondent groups were asked questions to determine their perceptions about the linkages with agricultural organizations and related agencies. In addition, they were asked to identify how often such interaction/linkage took place and the frequency of their linkages with the university and research center.

Linkage with the organization

On a scale from none to very strong linkages in the statement, Do you have linkages with the university and college of agriculture? Extension Agent and Rural Development Personnel indicated that they had very weak linkages. There were no significance differences between the two groups.

Both groups also indicated that they had few linkages with agricultural banks and credit institutions, farm machinery organizations, fertilizer agencies, and forestry research centers, and there were no significant differences



between the two groups.

Regarding the statement, Do you have linkages with rural development research centers?. Extension Agents judged this statement less significant than did Rural Development Personnel. On the statements, do you have linkages with the pesticide research center?, do you have linkages with the animal research centers?, and do you have linkages with the soil research centers", Extension Agents judged these statements more significant than did Rural Development Personnel.

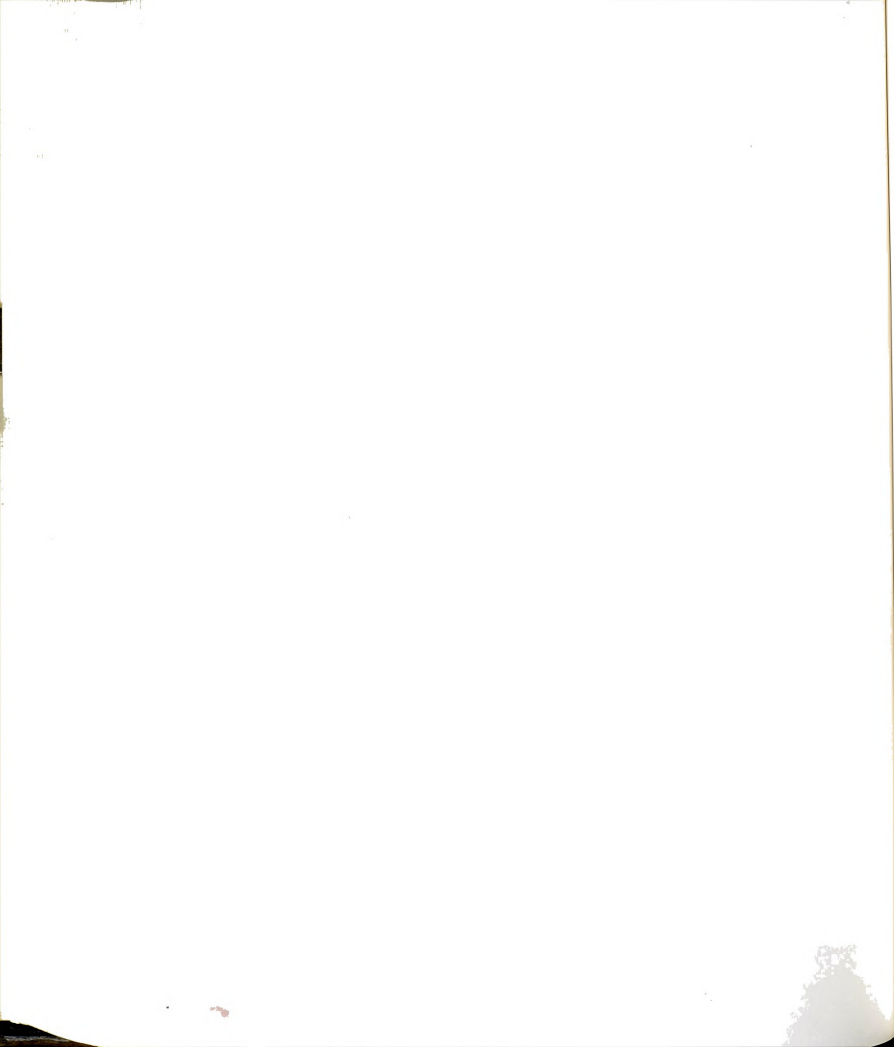
There were significant differences on the linkages with dry land farming research station. Rural Development Personnel judged the statement more significant than did the Extension Agents.

Extension Agents indicated that they had significantly more linkages with rural cooperative organizations than the Rural Development Personnel.

Study Finding Question 9: Was there A difference between the Extension Agents and the Rural Development Personnel regarding their effectiveness?

Nearly one-half of the Extension Agents (45%) and Rural Development Personnel (45%) indicated that they visited farmers every three months.

Study finding Question 10: What were the perceptions of farmers in relation to contacts with the Extension Agents and Rural Development personnel?



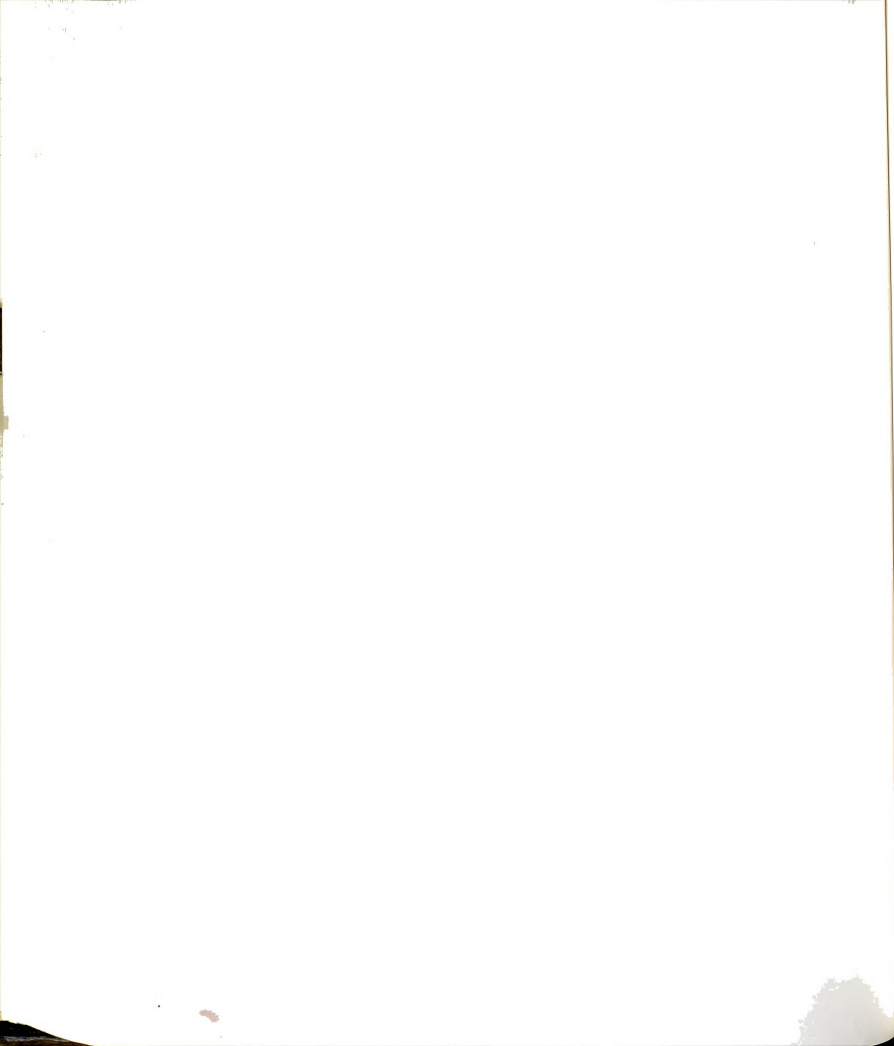
Farmers indicated that they had more contact with the Extension Agents than with the Rural Development Personnel. Over two-thirds of the farmers responded negatively on the statement, " Have you ever been asked by the agent to participate in the planning of extension activities in your area?. Ninety percent answered negatively for Extension Agents and 92 % answered negatively for Rural Development Personnel.

Study finding Question 11: What were the perceptions of farmers in relation to activities of the two organizations in state of Khorrassan?

Farmers indicated that Extension Agents and Rural Development Personnel gave the same service on the areas of crops, seeds variety, fertilizer, and pesticides.

The majority of farmers (82%) indicated that information they were using on their farms came from sources other than the extension agencies such as neighbors and parents. Only 31 (8%) and 21 (5%) of the farmers responded that the information they were using was learned from Extension Agents or Rural Development Personnel. Only 19 (5%) of the farmers responded that the information they were using was from both departments.

Over three-fifths (67%) of the farmers disagreed that the seminars and demonstrations of the Rural Development were better than that of the Extension Agents. About one-fifth (22%) of the farmers mentioned that they preferred to



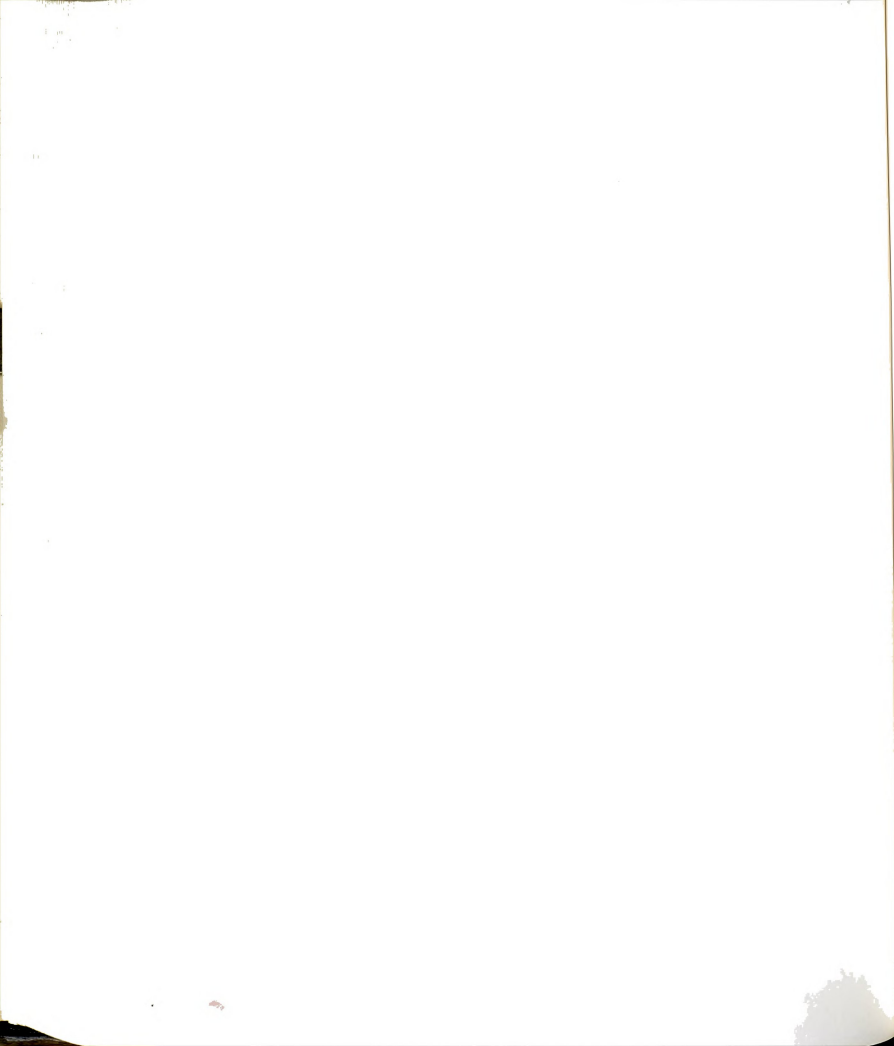
be visited by Rural Development Personnel compared to 32% of the farmers who indicated that they preferred not to be visited by either of the agents.

Over one-half (58%) of the farmers also answered that neither of the agencies solved their farm problems, and 52 percent of the farmers answered that neither of the agents had frequent contact with them. Also 51 percent of the respondent farmers answered that neither of the agents shared more updated information than the other.

Almost three-fourths (74%) of the farmers disagreed that Rural Development Personnel visited them regularly and 77% of the farmers agreed that the Extension Agents are a rare fish to catch. On the other hand 76% of the farmers agreed that Rural Development Personnel are rare fish to catch.

About two-fifths (43%) of the farmers disagreed that Extension Agents recommend practices not available in the area while 38% of the farmers disagreed that Rural Development Personnel recommend practices not available in the area.

More than 80 percent of the farmers disagreed that both agents have developed better demonstration plots. Three-fourths (75%) of the farmers disagreed on the statement "that both agents are trying to help to solve farmer problems".



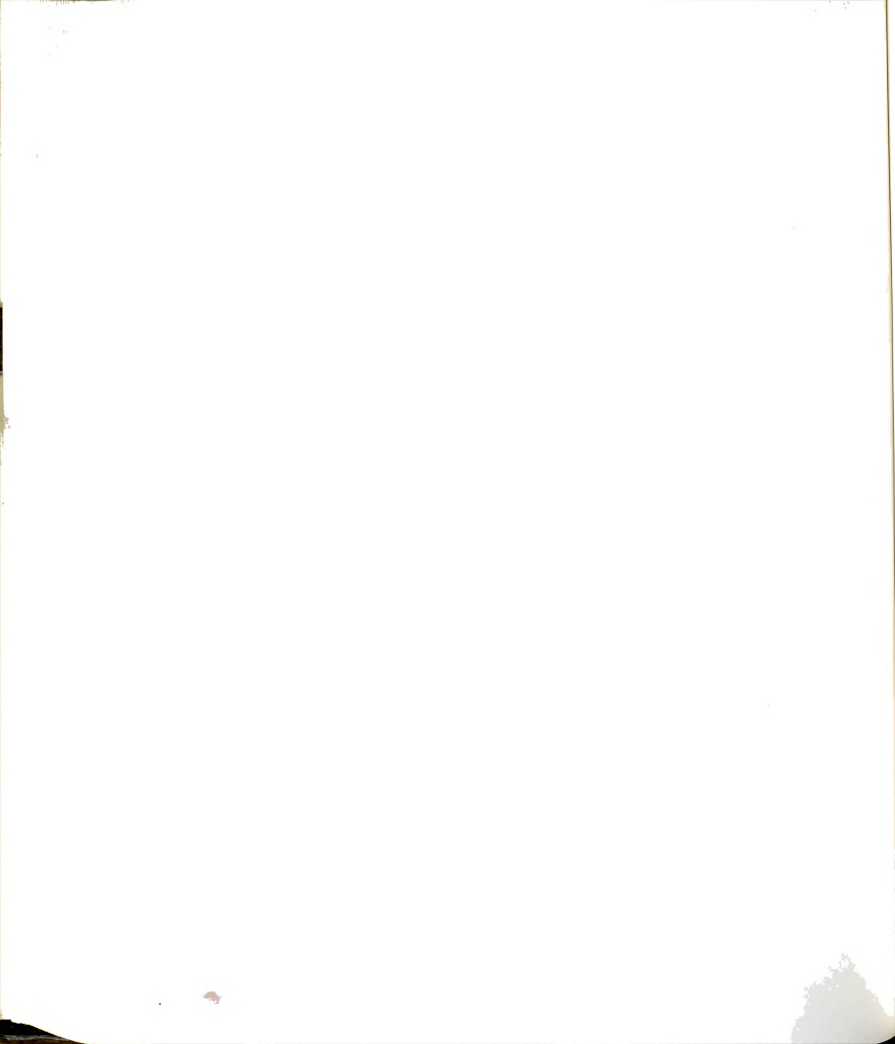
About one half (45 %) of the farmers indicated that they had contact with both agencies. Over one-half of the farmers responded (59 %) that both agencies gave the same services.

Three- fifths (60.5%) of the farmers reported that both services were necessary for them. Over one-half (52.0%) of the farmers did have contact with Rural Development Personnel during the year 1988. Over four-fifths (85 %) of the farmers had contacts more than once a year with Rural Development Personnel.

Over one-half (57 %) of the farmers also indicated that they had contact with Extension Agents during 1988, and four fifths (77 %) of the respondents indicated that they did have contact with Extension Agents more than once a year. Seventy eight percent of the farmers indicated that they received advice for crop production such as seeds and fertilizer from Extension Agents compared to 69 % of farmers who indicated that they got advice from Rural Development Personnel.

Study finding Question 12: What were the perception of farmers in relation to linkages with the two organizations in the state of Khorassan?

One half of the farmers indicated that they had contact with both agencies during the year of 1988; 57.9 percent for Extension Agents and 52.3 percents for Rural Development Personnel.



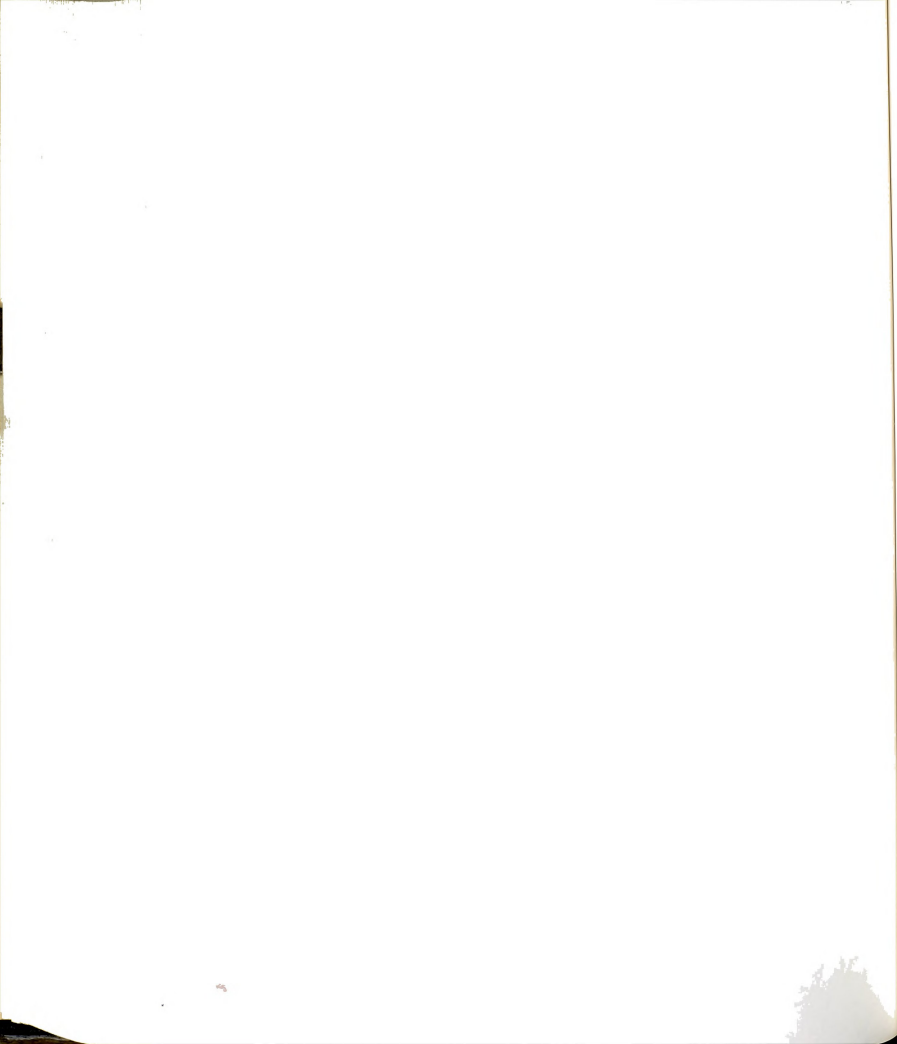
Over four-fifth of the farmers strongly agreed with the statement, "collaboration between agencies is important". Almost three-fourth of the farmers also strongly agreed that the " collaboration is vital to agricultural development". Farmers also strongly agreed (80 %) with the statement " combining the two departments is vital to agricultural development".

Farmers agreed that availability of Extension Agents and Rural Development Personnel is rare, farmers gave a negative perception about the regular visits of the Extension Agents and Rural Development Personnel. Over three fourths 79 % of the farmers strongly disagreed with the statement, " Rural Development Personnel visit me regularly." The majority of farmers (77.0 %) strongly disagreed with the statement, "Extension Agents visit me regularly".

Study finding Question 13: Was there difference between the perception of Extension and Rural development Directors regarding their agents time allocation?

Rural Development Directors judged the statement, "time spent for planning activities" to be significantly more important than did the Rural Development Personnel. Extension Directors judged the statement, " time spent for non educational activities" to be significantly more important than Rural Development Directors.

Overall, there were no statistically significant

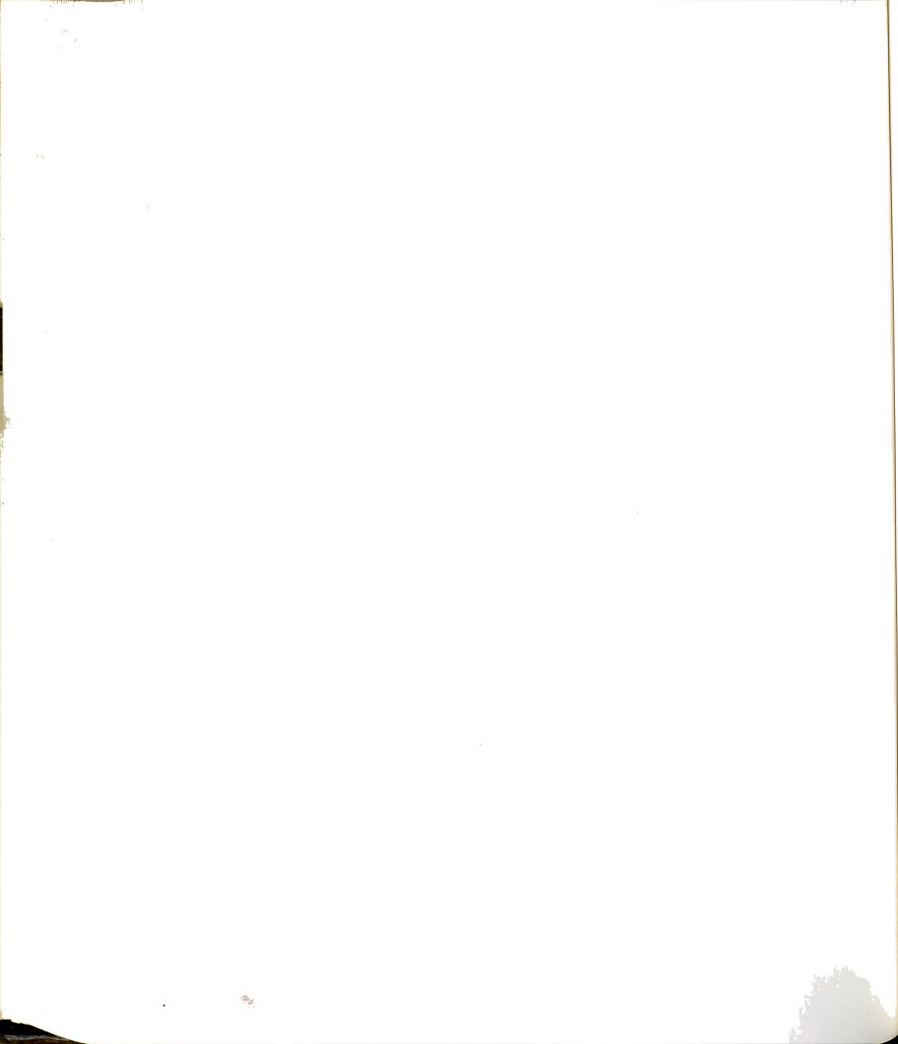


differences in perception between the Directors of Extension and Rural Development toward the provision of assistant of the field worker's to the farmers. However, there was a statistically significant difference in perception between the Directors of Extension and Rural Development in relation to their field worker's preparation of demonstration plots.

Study finding Question # 14: Was there significant difference between the perception of two organization regarding ways in which the two department contribute to strengthen the extension efforts?

Directors perception. There was no significant difference between Extension and Rural Development Directors when comparing their judgments of the importance of the thirteen statements which were related to strengthening extension programs in the state of Korrassan. There was, however, a significant difference in their judgments on the statement, "Integration of services of the Extension Department and Rural Development Department." Rural Development Directors feel this was more significant than did Extension Directors.

Significant differences were found on the statement, "Integration of services of the Extension and Rural Development Department", between the Extension Directors and Rural Development Personnel and between the Rural Development Directors and Extension Agents. The results showed that Rural Development Personnel significantly supported the statement from Extension Agent. Also there were significant differences between the Rural Development



Directors and Extension Agents on the statement, "integration of two departments is vital to agricultural development." The result showed that Rural Development Directors supported the statement significantly more than the Extension Agents.

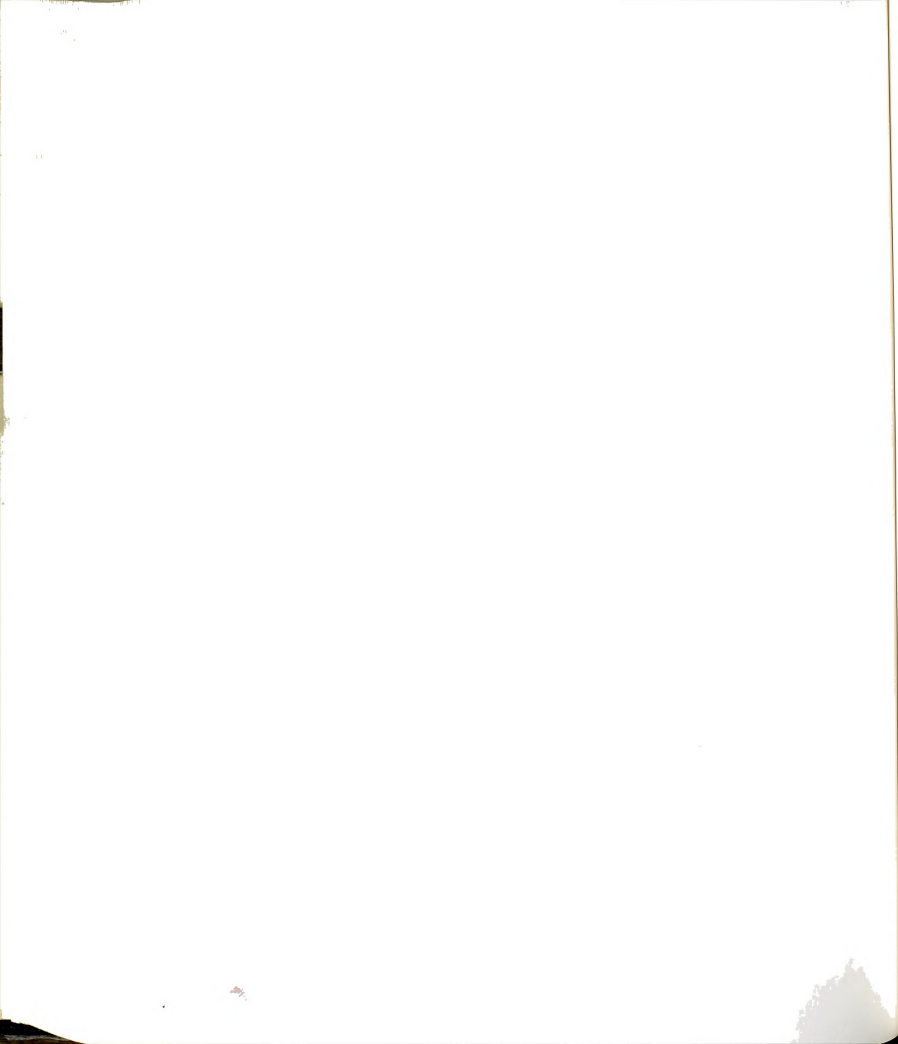
Study finding Question # 15: What were the perception of farmers in relation to the future of Agricultural Extension Education in state of Khorrassan?

Over four-fifths (81 %) of farmers strongly agreed on the statement, "collaboration between agencies is important". Also over three fifths (71 %) of the farmers strongly agreed that the "collaboration is vital to agricultural development". The majority of farmers (80 %) strongly agreed with the statement "combining of the two departments is vital to agricultural development".

Over one third (35 %) of the farmers agreed that the best extension teaching method were seminars and (31 %) mentioned films and slides. One half (51 %) of the farmers agreed that the best Rural Development Personnel teaching method was showing films and slides and (25 %) mentioned demonstration plots.

Study finding Question 16: Was there a significant difference between the perception of Extension Agents and Rural Development Personnel regarding services given to the farmer?

Over three- fifths (69 %) of Rural Development indicated that they did advise farmers on crop production

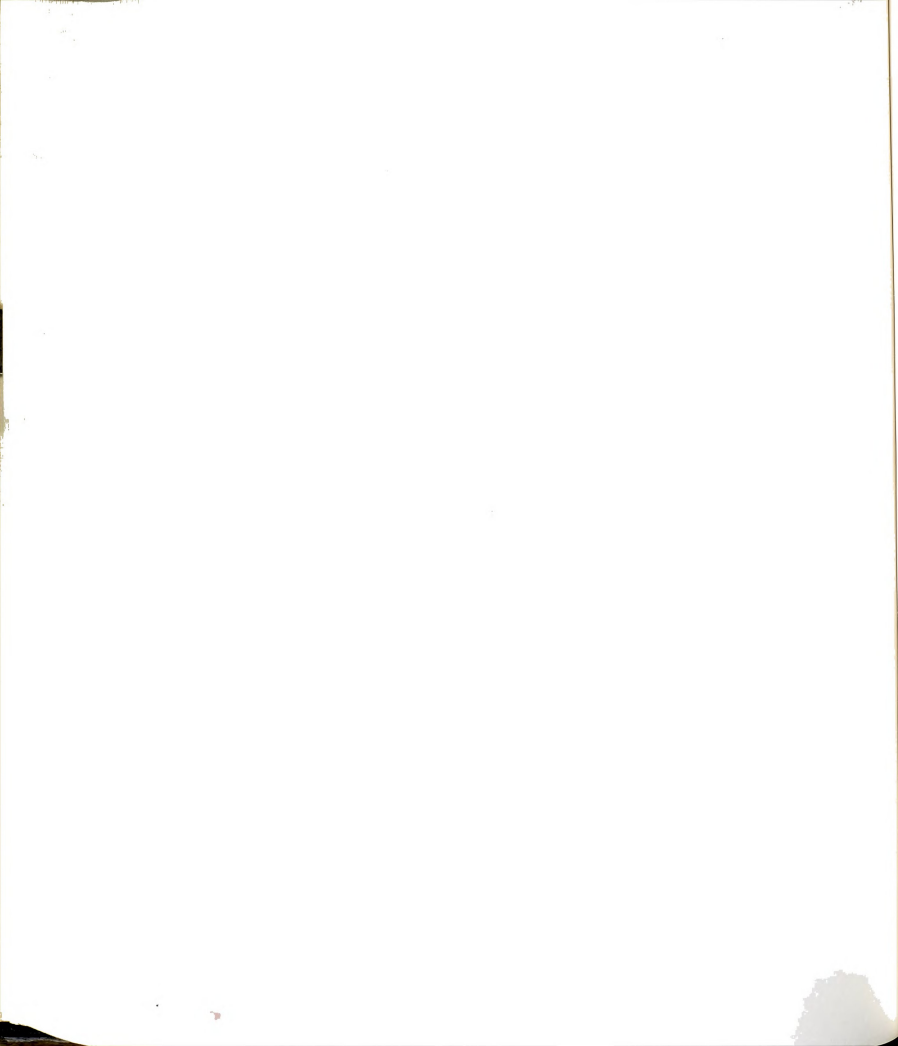


such as seeds and fertilizer.

Regarding the area of teaching, over three- fourths of the Extension Agents indicated that they advised the farmers in the areas of approved seeds, fertilizers, pesticides, herbicides, tillage equipment, planting equipment, fertilizer equipment, harvesting equipments, tillage practices, storage and post harvesting practices, forage crop, irrigation, land leveling, farm management, and soil fertility, compared to three- fourths of Rural Development which indicated that they advised the farmers in the areas of tillage equipments, planting equipment, tillage practices, and forage crops.

Study finding Question 17: Was there a significant difference between the perception of Extension Agents and Rural Development Personnel regarding their training needs?

Regarding the training needs Rural Development Personnel were significantly different in relation to their perception of training needs. On the statements " Do you need training in Irrigation", " Do you need training in soil conservation Equipment", " Do you need training in marketing", and "Do you need training in Management of Research plots" Rural Development Personnel judged this training to be significantly more needed.



Conclusions

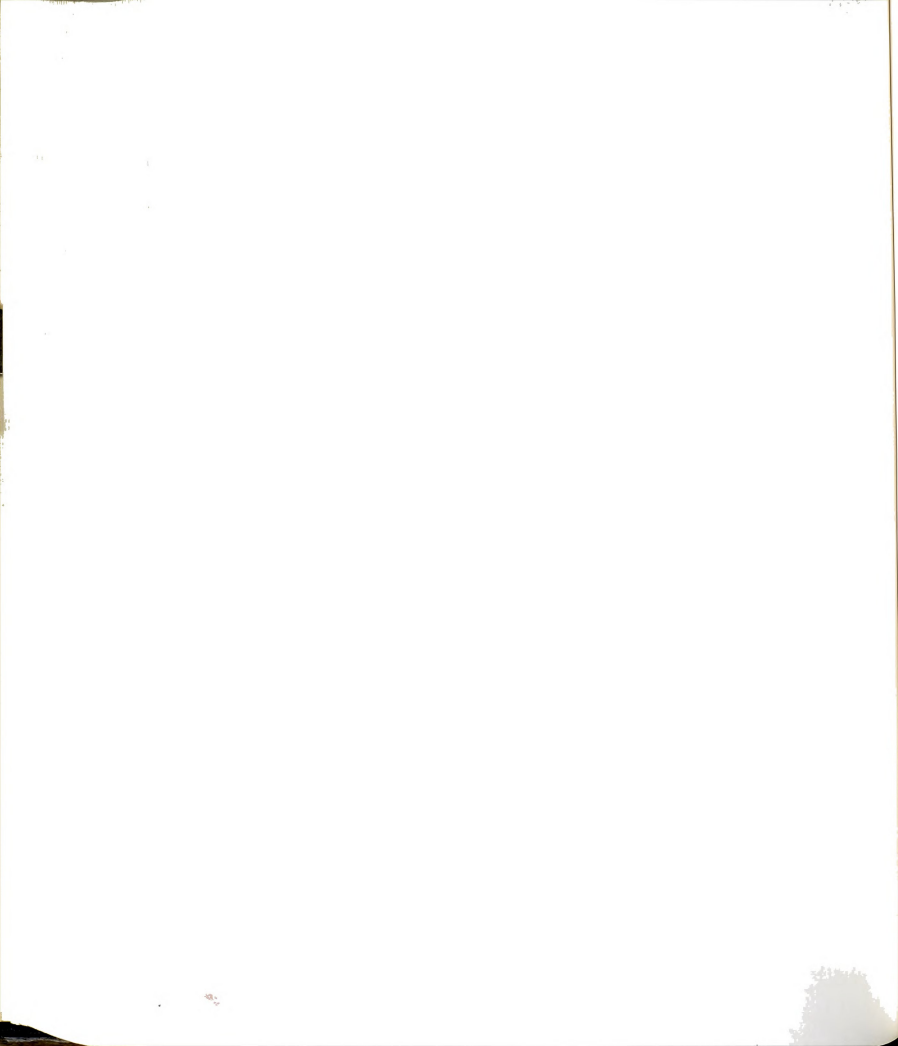
The following conclusions were drawn based on the data found in the research:

1. The Rural Development Department Personnel were younger in age than personnel in the Extension Department. In the case of farmers, data show that most of them were over 50 years old.

2. The Extension Directors and Agents had more experience than did the Rural Development Directors and Agents. Data revealed that during 1988 the Extension Department had more extension activities than did the Rural Development Department. Extension Agents believed that the Rural Development Department was getting more attention from the national government.

3. The majority of Extension Agents believed they were performing effective and efficient work with the farmers. Similar feelings were shown among the Rural Development Department. But over two-thirds of the farmers responded negatively to the effectiveness of both the departments. The majority of the farmers indicated that they were receiving agricultural information from sources other than the two departments. Parents, neighbors, salesman, etc, were viewed as reliable sources of information.

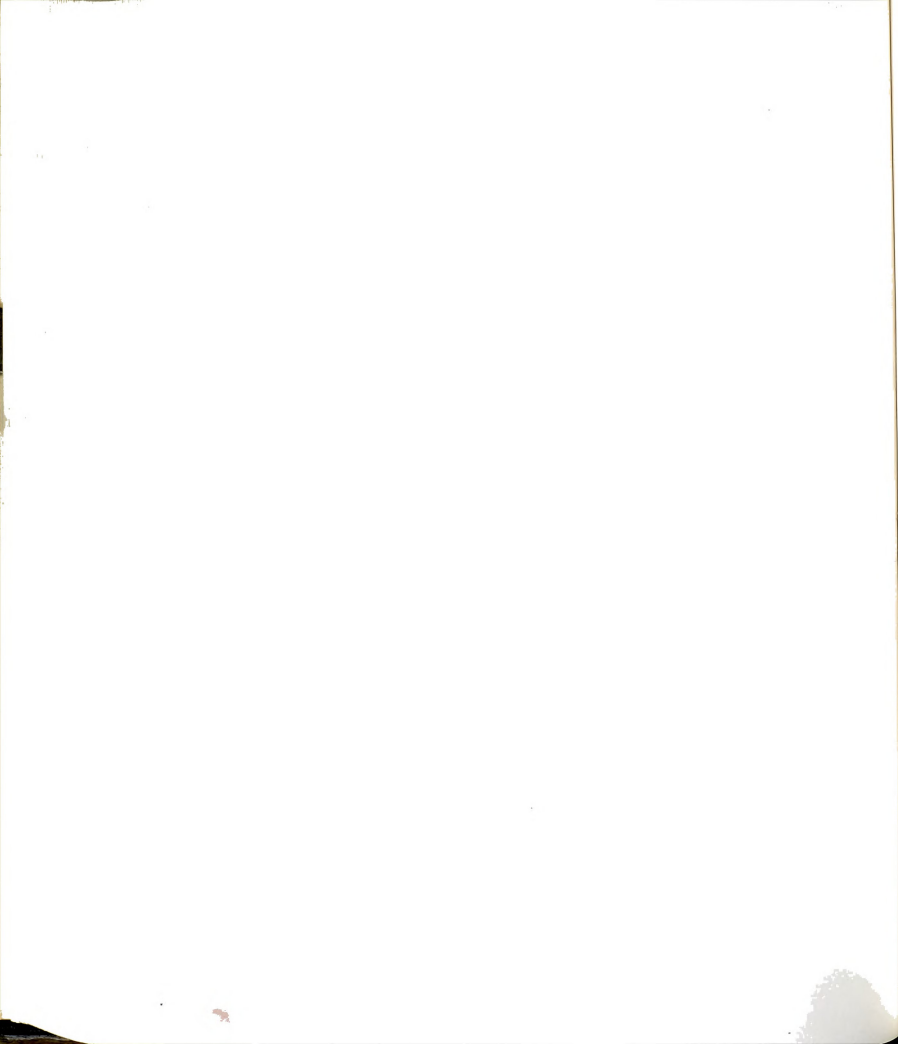
4. Extension Agents and Rural Development Personnel perceived that collaboration between the two departments was



important. The Rural Development Department placed more emphasis on obtaining collaboration and coordination between the two departments. Such linkages between the groups were perceived to be a means for improving services to the*** farmers. This is a reaffirmation of conclusion drawn by many researchers in other countries (UNDP, 1991; Axinn & throrat, 1972; Axinn, 1978; Minot, 1984; Loomis, 1965; Lionberger & Gwin, 1982). There was disagreement between the two Departments in terms of joining the two departments into one. Rural Development Directors and Personnel supported the concept of combining the two Departments.

5. Extension Agents and Rural Development Personnel indicated that the Extension Department and Rural Development Department were not collaborating and coordinating their program efforts.

6. In terms of educational purposes, there were no significant differences between the two departments. But in terms of cliental served there was a significant difference between the two departments. The Extension Department put more emphasis on agricultural production involving large scale farmers and the Rural Development Department put more emphasis on the small scale farming communities. This is a reaffirmation of conclusions drawn by other researchers in other countries (DiFranco, 1966). The Extension Department emphasized horticultural activities more, while the Rural Development Department dealt more with dry land farmers.

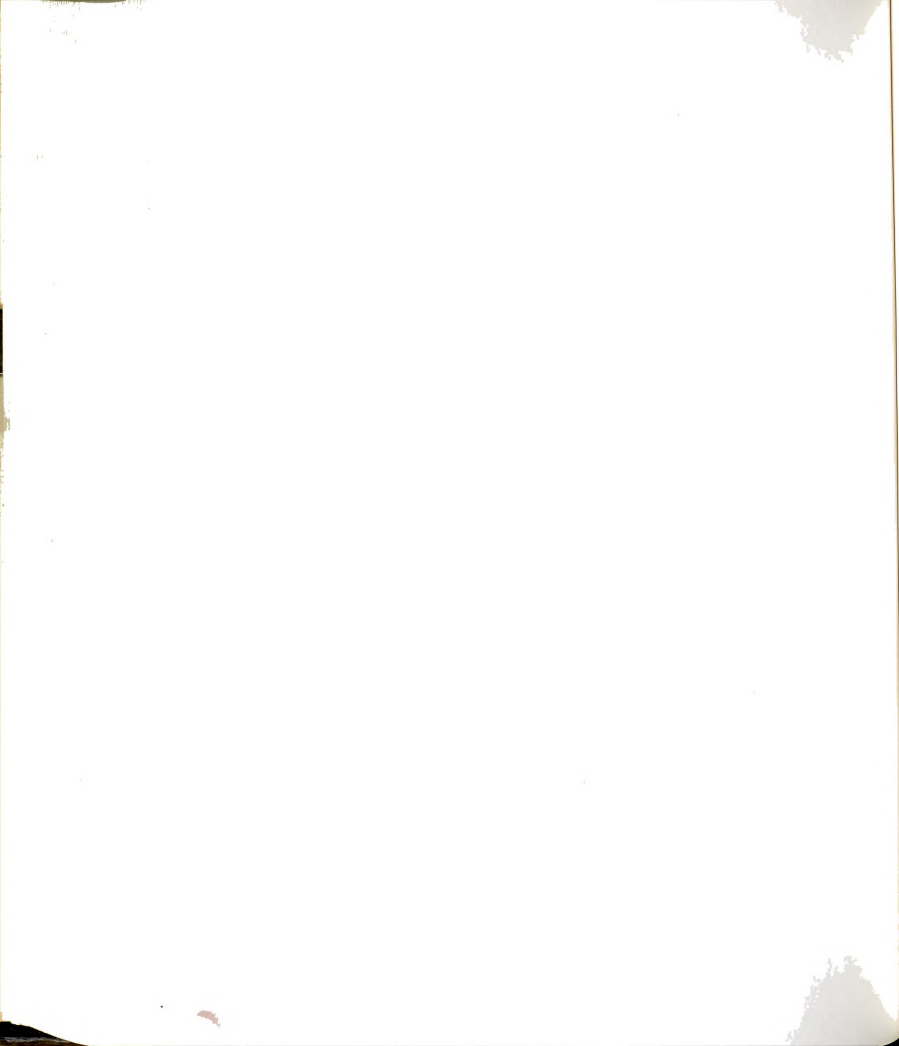


7. The results indicated that farmers were getting their useful information from sources other than those of Extension services. This is a reaffirmation of conclusion drawn by scholars in other countries about the other sources of information that farmers can have (Lionberger & Gwin 1988; Ban & Hawkins 1988). Farmers indicated that Extension Agents and Rural Development Personnel had low contact and low concern about the farmers' needs. Overall, the farmers were not satisfied with the Extension and Rural Development services in the State of Khorassan.

8. Data indicated that there was no significant difference between the two departments in terms of teaching methods. Both departments put negative value on newspapers, telephone, and newsletters as means to convey extension to the people.

9. It is concluded that the Rural Development Department preferred to apply more hands on education methods compared to the more theoretical approaches preferred in Extension teaching. The Extension Department preferred individual teaching methods, whereas Rural Development preferred group teaching methods. Mass media methods were not used by either department. The groups prefer to teach different subjects.

10. It appeared from the data that Extension Agents felt they had more expertise in most of the production practices than did Rural Development Personnel.

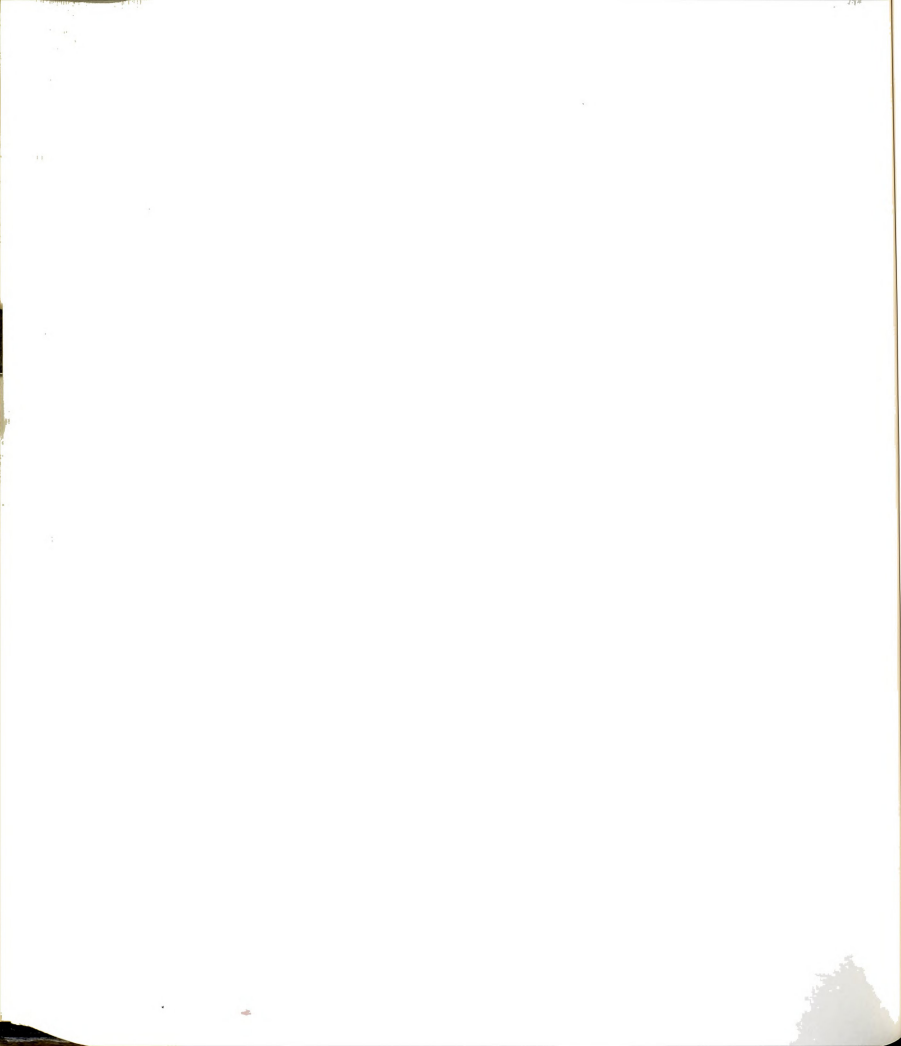


11. Findings showed that, in general, there was no significant difference when self-ranking the area of advice to the clientele between the two departments' agents. But the Rural Development Department put more emphasis on forage production, and the Extension Agents emphasized use of fertilizers and land leveling. This was in agreement with DiFranco (1966) finding relative to the study of Some-aspects of extension worke. Farmers provided perceptions which were similar regarding the areas of advice received from the two departments.

12. In terms of time allocation, the Rural Development Directors put more time in program planning than did Extension Directors, but there were no significant differences in time allocation for educational activities. Findings showed Extension Directors perceived that the agents spend more time in non-educational activities, such as collecting census data, input supplies, etc.

13. Most of the farmers mentioned that agents from both agencies visited them at least once a year. While both Extension Agents and Rural Development Personnel indicated they visited the farmers every three months. There was no consistency between the perceptions of farmers, Extension Agents, and Rural Development Personnel in this regard.

14. Both Extension and Rural Development Departments indicated that they had negligible linkages with the educational and research organizations. This is a



reaffirmation of the conclusion drawn by scholars in other countries. (Axinn, 1987).

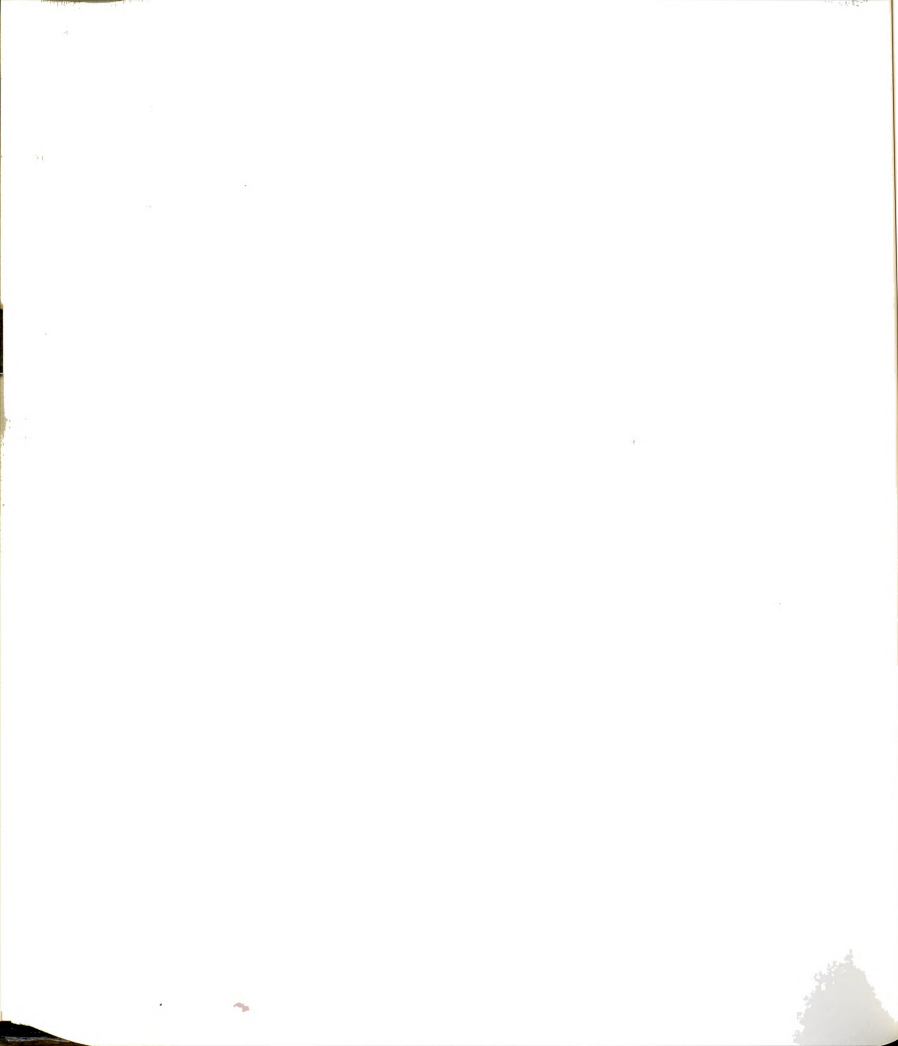
15. A majority of Extension Agents indicated that they advised the farmers in more of the subjects areas compared to the Rural Development Personnel.

16. Farmers perceptions in relation to contact with the two departments indicated a larger number of the farmers were visited by Extension Agents than by Rural Development Personnel. This is a reaffirmation of conclusions drawn by scholars in other countries. (UNDP, 1991).

17. A majority of the farmers (90 %) indicated that they have never been asked to participate in program planning by the Extension Agents or Rural Development Personnel. They felt that it is very important for them to know about the programs developed for them by the government.

18. Data indicated that 49.4% of the owners had 1 to 5 hectares of land, which is very small for employment of modern technology in agricultural farming. This is a reaffirmation of conclusions drawn by other researcher in others countries (world Bank, 1984).

19. The majority of the farmers indicated that merging the two departments to one would be a pre-requisite for future agricultural development in Iran. Farmers indicated that both groups were providing duplicated services as did the Extension Agents and Rural Development Personnel.



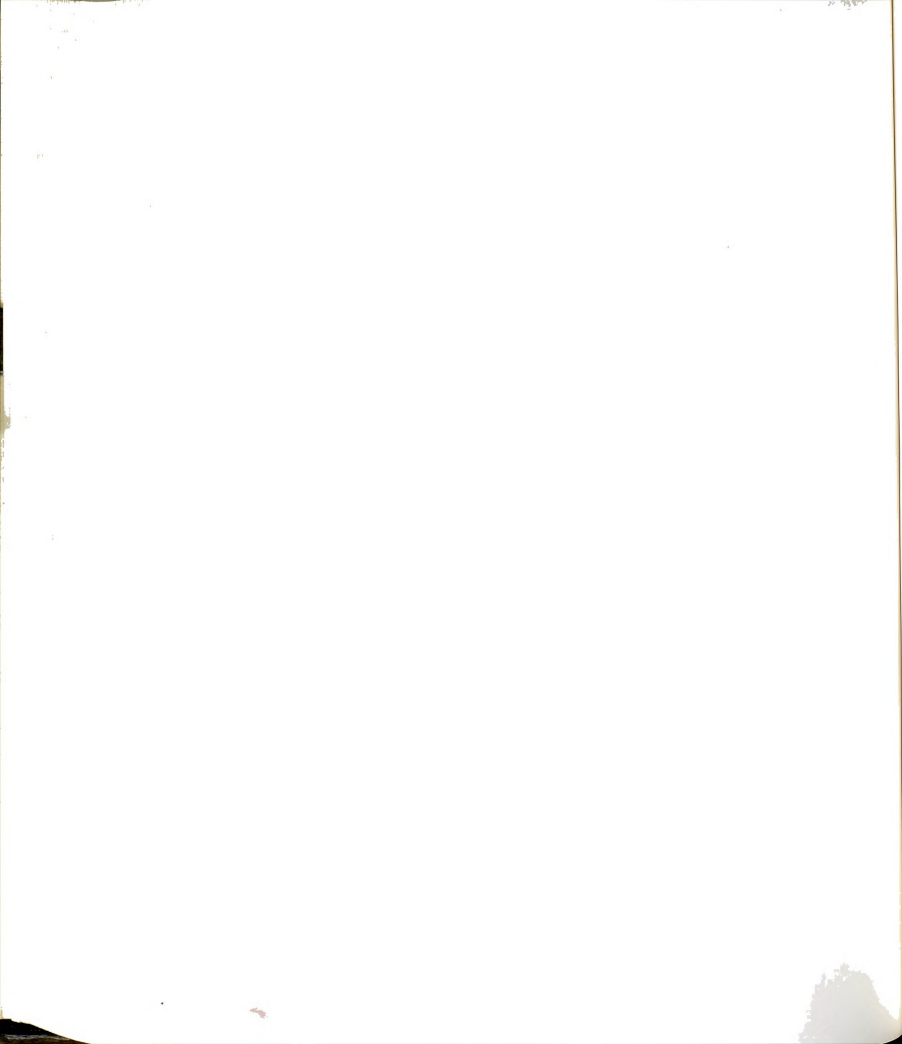
Recommendations

In this section there are several recommendations which are readily recognized from the finding and conclusions of this study.

1. Working with the same community and doing the same job among the rural people and serving different groups of the farmers developed negative attitudes in the rural society especially when the majority of the farmers are illiterate. The activities of the two extension groups divided the rural people into pro-extension or anti extension groups or pro-rural development or anti rural development, and created obstruction and negativism among the agents which reduces the effectiveness of the two department activities among the farmers. Joining the two departments can be an effective and proper action for agricultural development in State of Khorassan.

One of the recommendations for the improvement of agricultural development regards the linkages between the researcher organizations and the groups studied. Action should be taken to strengthen institutional linkages between the extension system and the agricultural related organizations.

A range of the alternatives could help in improving linkages between the agricultural organizations of Khorassan. One of the alternatives which should be considered, is selection of a committee which includes staff



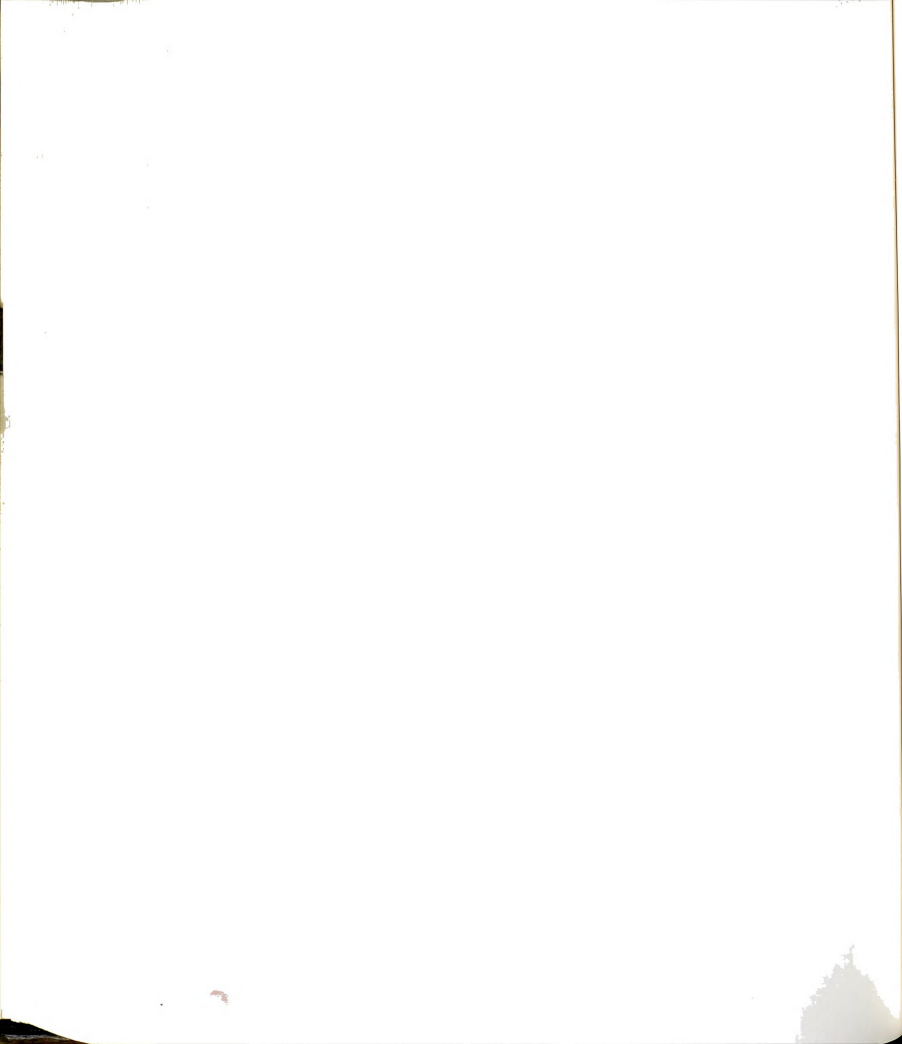
of the college of agriculture, staff of research centers, staff of Extension Department and Rural Development Department with representative farmers for joint planning. Before establishing such a committee, it is important to look at alternative models or systems within other sectors of Khorrassan, and other countries outside of Iran if necessary.

To improve linkages and relation ships between the Extension and Rural Development Department the use of committees can be a vehicle. Expectations should be kept modest at the beginning so that mutual trust among the committee members can be enhanced.

Another activity which would improve linkages is in the area of planning and conducting on-farm trials. In order to develop and sustain effective linkages among Extension Agents, Rural Development Personnel, and researchers, the current policies, if necessary, should be reviewed and modified if needed. The modification should result in getting the trials carried out in a joint manner between farmers and Extension Agents in that geographical area.

Frequent workshops in which Extension Agents, researchers, and Rural Development Personnel are equally able to present and discuss immediate concerns related to their institutions and roles should be conducted.

2. To increase the level of role consensus between the Extension and Rural Development organizations in the



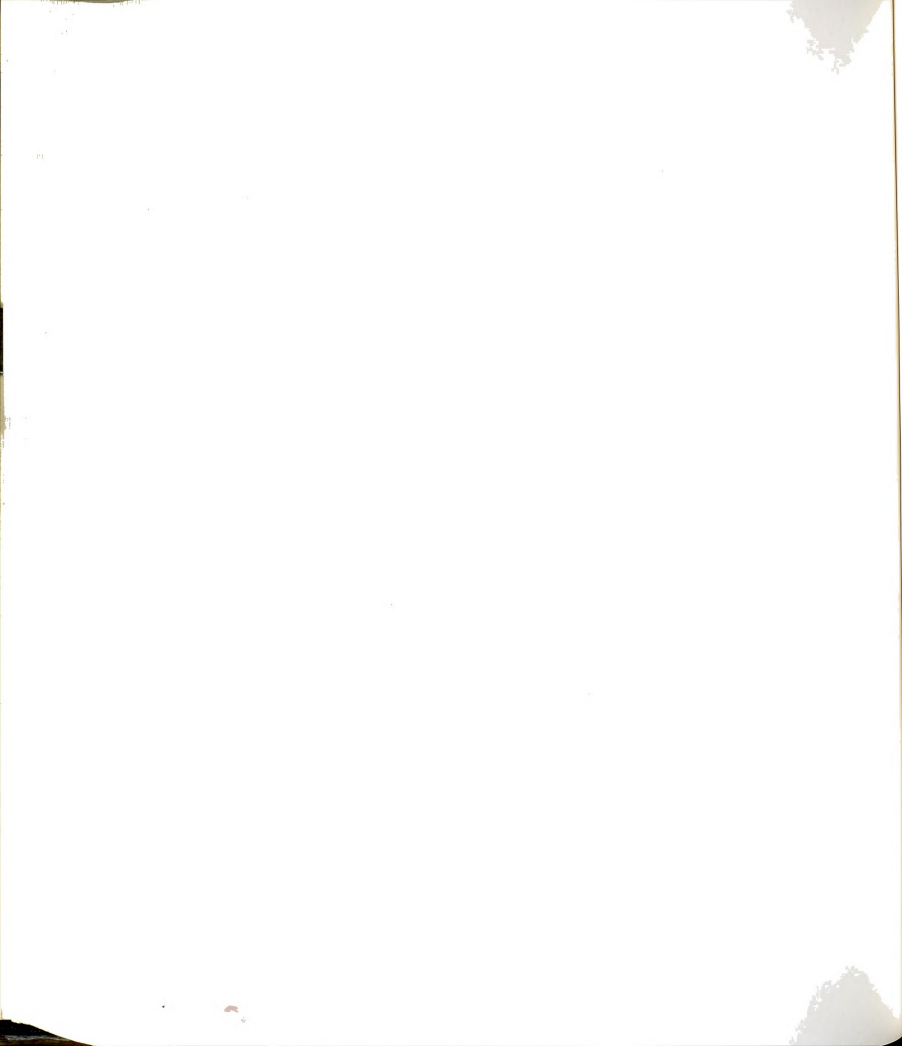
State of Khorrassan, the current organizational structure should be evaluated and the position descriptions for the two organizations should be re-evaluated in order to eliminate the duplication of tasks, as well as to clearly provide strength and responsibilities for the two organizations.

3. The findings emphasize that small farmers are the majority and an important in the State of Khorrassan. Therefore these farmers should be given adequate technical and communication support

2. which are essential for increasing agricultural productivity and production. Cooperative farming may be the main way of solving these serious problems.

4. A training program should be developed for Extension Agents and Rural Development Personnel in the State of Khorrassan that would include training in: personnel management, extension program planning, program evaluation, program development, public relations, soil conservation, marketing, cooperative activities and agricultural subjects.

5. All the extension Agents and Rural Development Personnel were male. Involvement of women in extension activities is one of the important criteria in rural development. One half of the total population are women. So both departments should emphasize the recruitment of-women



in extension activities.

6. A Majority of the farmers were illiterate in the State of Khorrassan. Mass literacy programs should be introduced to increase the level of understanding of the farmers.

7. Because of the advanced age of the farmers, and a movement by the young people from rural areas to cities, a shortage of farm labor will unfold in the near future. therefore, extension agents and Rural development personnel should takes necessary steps to engage young people in farming.

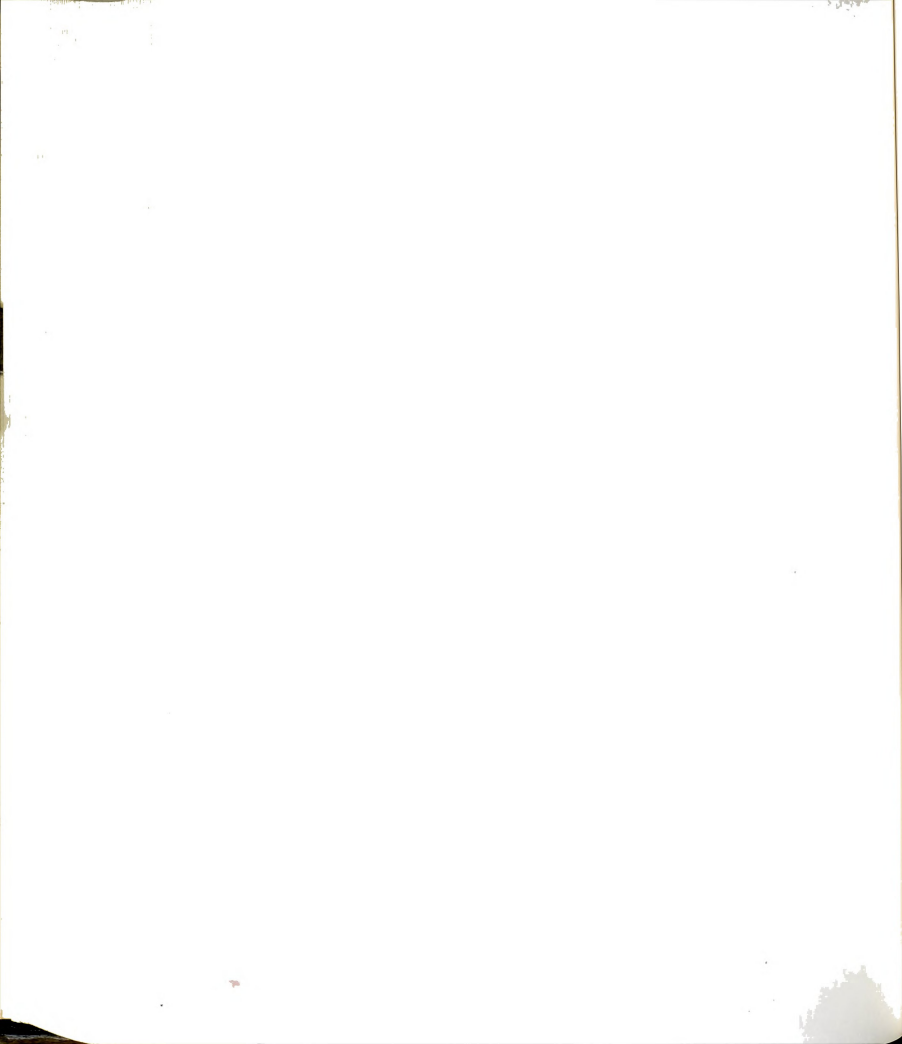
Recommendation For Future Research

The list below is recommended for future research:

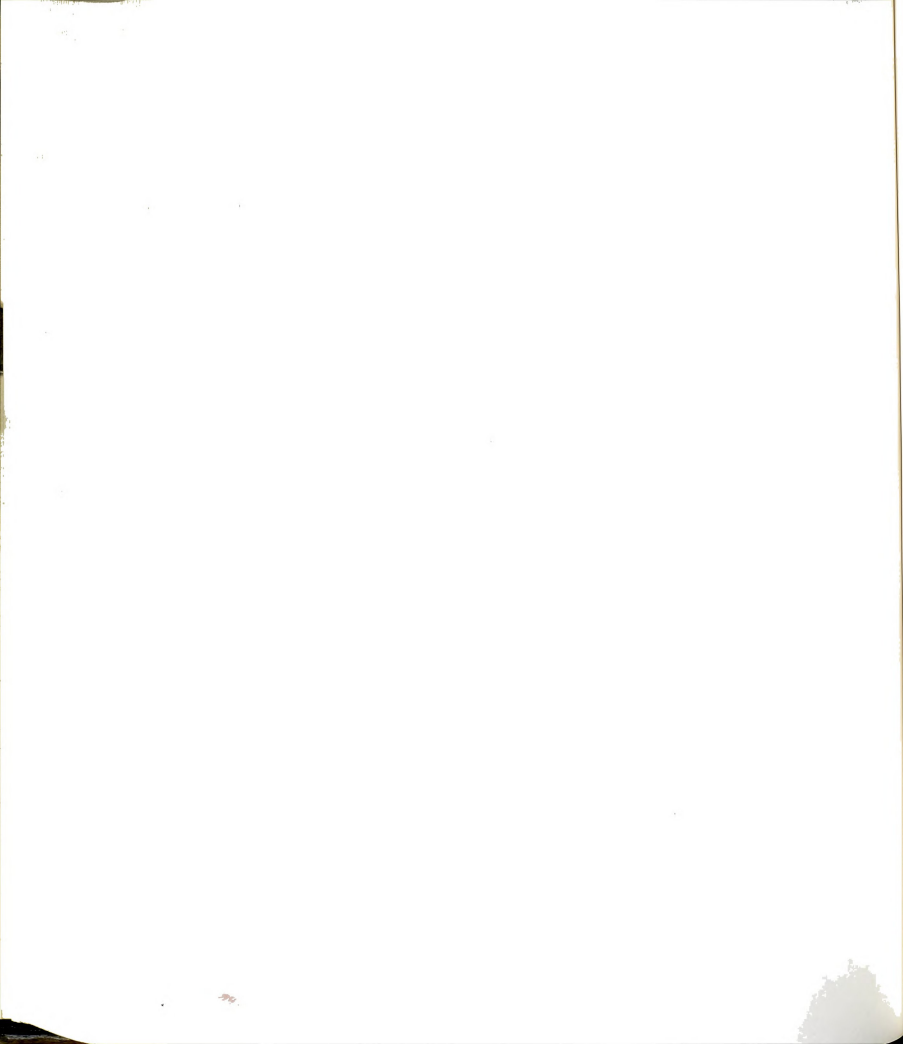
1. Replicate the study in other states to provide further evaluation information to draw generalizations about the two departments and activities.

2. Conduct a study assessing the relationship between job satisfaction and training needs, management roles, and effectiveness of their field worker and Agents.

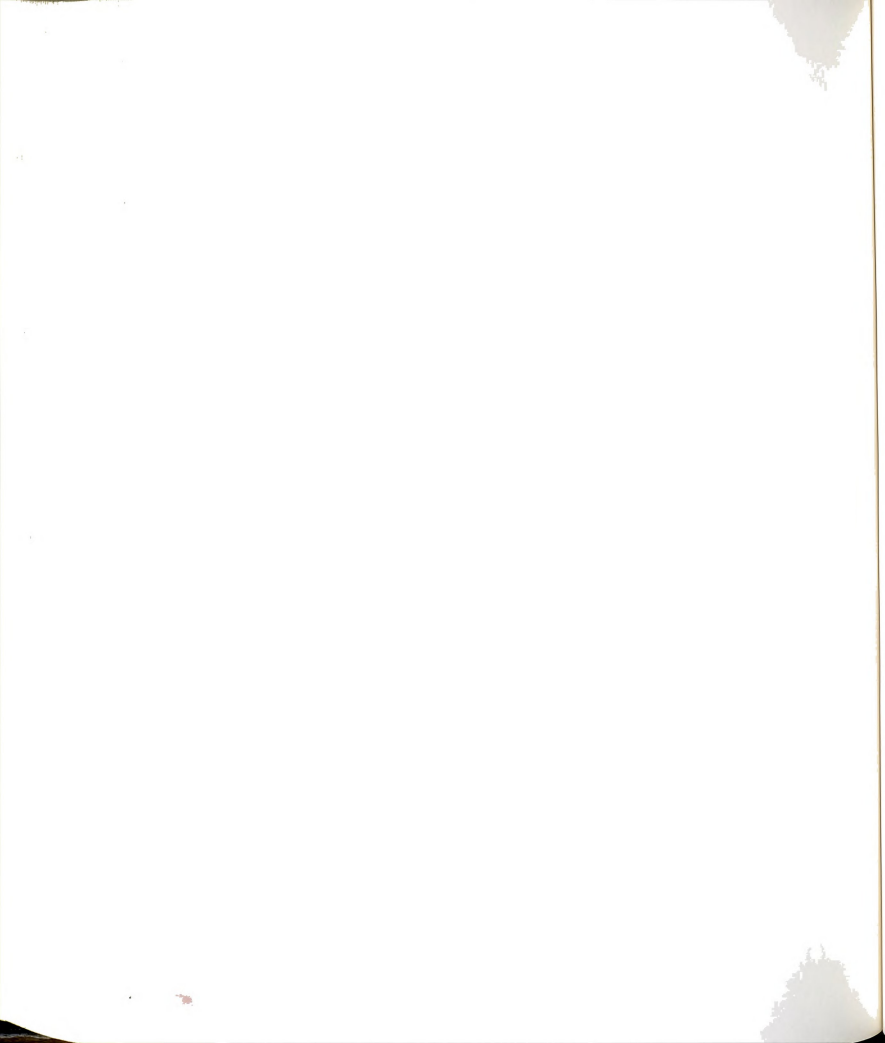
3. Conduct research on organizational effectiveness in relation to the availability of supply and inputs of agricultural goods (such as fertilizer, equipment, pesticides, etc.).



4. Conduct a research assessing the impact of training programs on the performance of Extension administrators and Rural Development administrators.



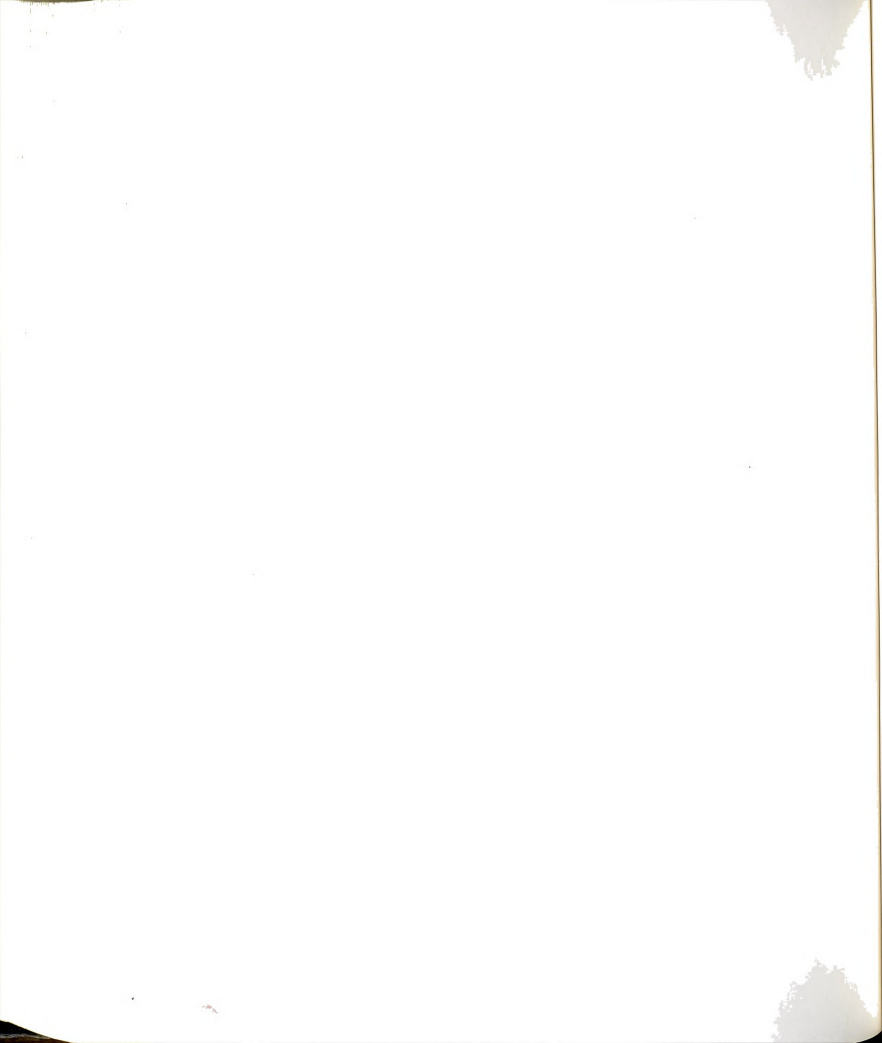
APPENDICES -A



Appendix A-1.--Perception of Extension Directors on the Purpose of Extension Education

Statements	Extension Directors N = 23	Rural Development Directors N = 20	t	p
	Mean S.D	Mean S.D		
1. Coordination of needs and research	4.1 0.8	4.0 1.1	0.27	0.39
2. Transfer of technology and innovations	4.8 0.6	4.8 0.4	0.44	0.33
3. Increase knowledge and skills	4.9 0.4	4.8 0.4	0.52	0.31
4. Hands on Education	4.6 0.7	4.7 0.6	0.71	0.25
5. Assistance with training and visits	4.5 0.8	4.8 0.5	1.55	0.06
6. Support the people's growth and change	4.7 0.6	4.6 0.7	0.48	0.32
7. Assist farmers in training improved inputs	4.7 0.8	4.8 0.5	0.47	0.32
8. Help farmers to help themselves	4.4 0.7	4.4 1.0	0.32	0.37
9. Link local organizations	3.9 1.2	4.1 1.3	0.50	0.31
10. Increase Production	4.6 1.1	4.8 0.5	0.65	0.26
11. Support free input facilities	1.8 1.2	1.8 0.9	0.08	0.47
12. Prepare working facilities	3.0 1.5	3.3 1.3	0.57	0.30
13. Assess the needs of the farmers	3.8 1.2	4.1 1.0	0.64	0.29

Directors responded to these items on a 5 point Likert type scale with: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly agree.

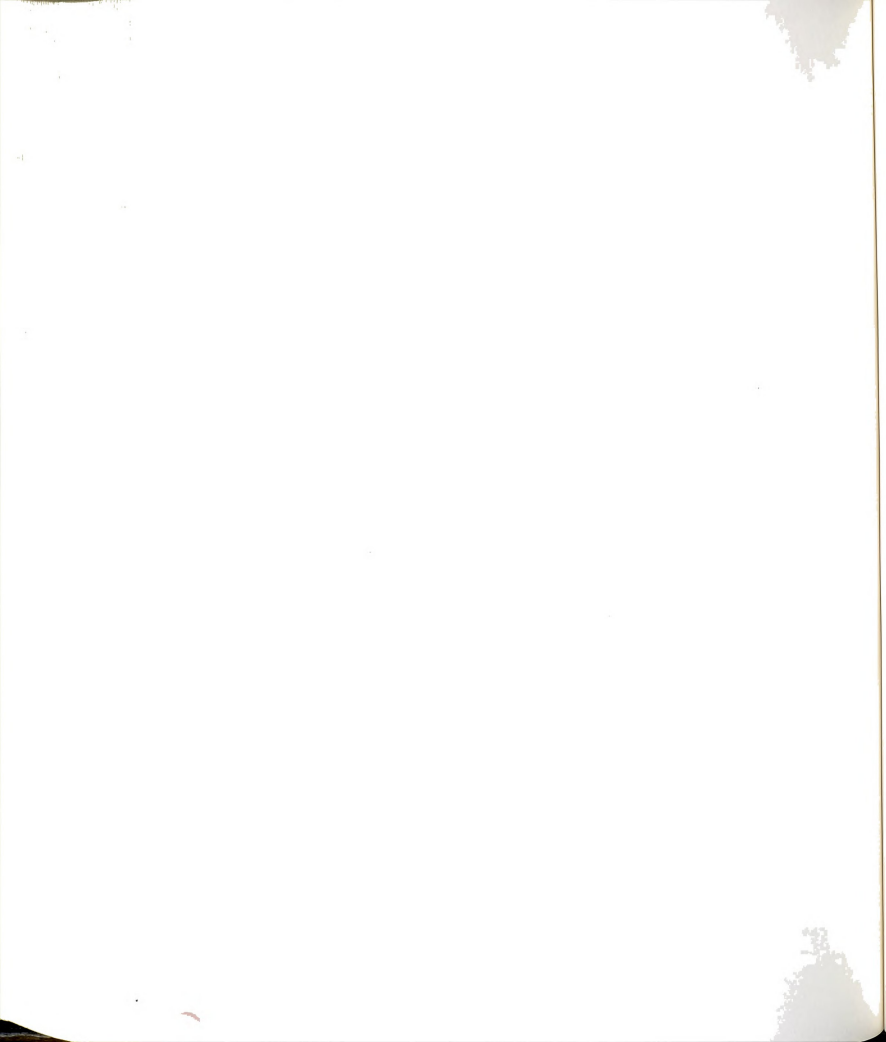


Appendix A-2.--Perception of Extension Directors in the Purpose of Extension (clients served)

Statements	Extension Directors N = 23		Rural Development Dir N = 20		t	p
	Mean	S.D	Mean	S.D		
1. Serving large scale farmers	3.77	40	3.00	1.34	1.95*	0.03
	1.17					
2. Serving small scale farmers	3.65	41	4.50	0.81	2.25*	0.01
	1.46					
3. Serving landless farmers	1.91	40	1.80	1.08	0.31	0.38
	1.12					
4. Serving farmers growing cash crops	3.87	41	3.40	1.43	1.13	0.13
	1.23					
5. Serving farmers dealing with forage	3.61	41	4.20	0.93	1.62	0.05
	1.34					
6. Serving farmers dealing with vegetables	2.43	41	1.40	0.58	3.11*	0.00
	1.35					
7. Serving horticulture farmers	3.09	41	1.70	0.90	3.81*	0.00
	1.35					
8. Serving farmers dealing with irrigation lands	4.43	41	4.35	0.73	0.36	0.36
	0.77					
9. serving dry land farmers	2.64	40	3.75	1.64	2.23*	0.02
	1.64					

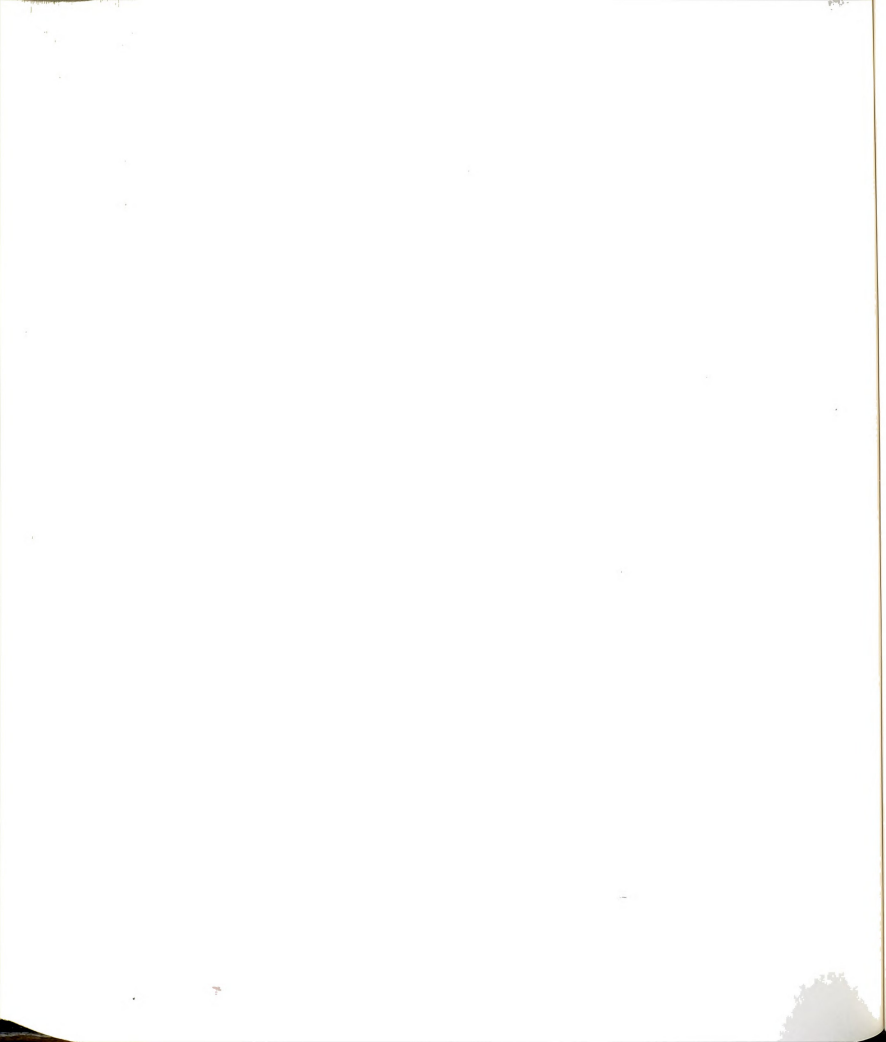
Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:

5 = strongly agree 4 = agree
 3 = neutral 2 = disagree
 1 = strongly disagree.



Appendix A-3.--Perception of Directors in Relation To
Teaching Methods Prefer

Teaching Method	Extension Development Director N = 23			Rural Director N = 20	
	Mean S.D	DF	S.D	Mean t	p
<u>Materials and media</u>					
Importance of Using Posters as a Teach- ing methods	3.61 1.17	41	3.8 0.68	0.63	0.27
Importance of Using T.V. as a Teaching methods	4.2 1.07	41	3.8 1.15	0.94	0.32
Importance of Using Newspapers as a teaching methods	2.7 1.36	41	2.20 0.74	1.70*	0.05
Importance of using radio as a teaching Methods	4.2 0.94	41	4.20 1.00	0.08	0.47
Showing film as a teaching methods methods	4.61 0.71	41	4.60 0.6	0.04	0.48
Using Fair Exhibits as a Teaching methods	3.91 1.10	41	3.50 1.2	1.26	0.11
Other teaching method (role play ,theater	4.30 0.75	17	4.6 0.5	0.67	0.26
<u>Individual methods</u>					
Importance of farm visit as a teaching	4.50 0.77	40	4.6 0.7	0.64	0.27
Importance of office call as a teaching Methods	3.5 1.20	40	2.2 0.83	3.83*	0.00
Importance of using telephone as a teaching methods	2.9 1.30	41	1.7 0.78	3.44*	0.00

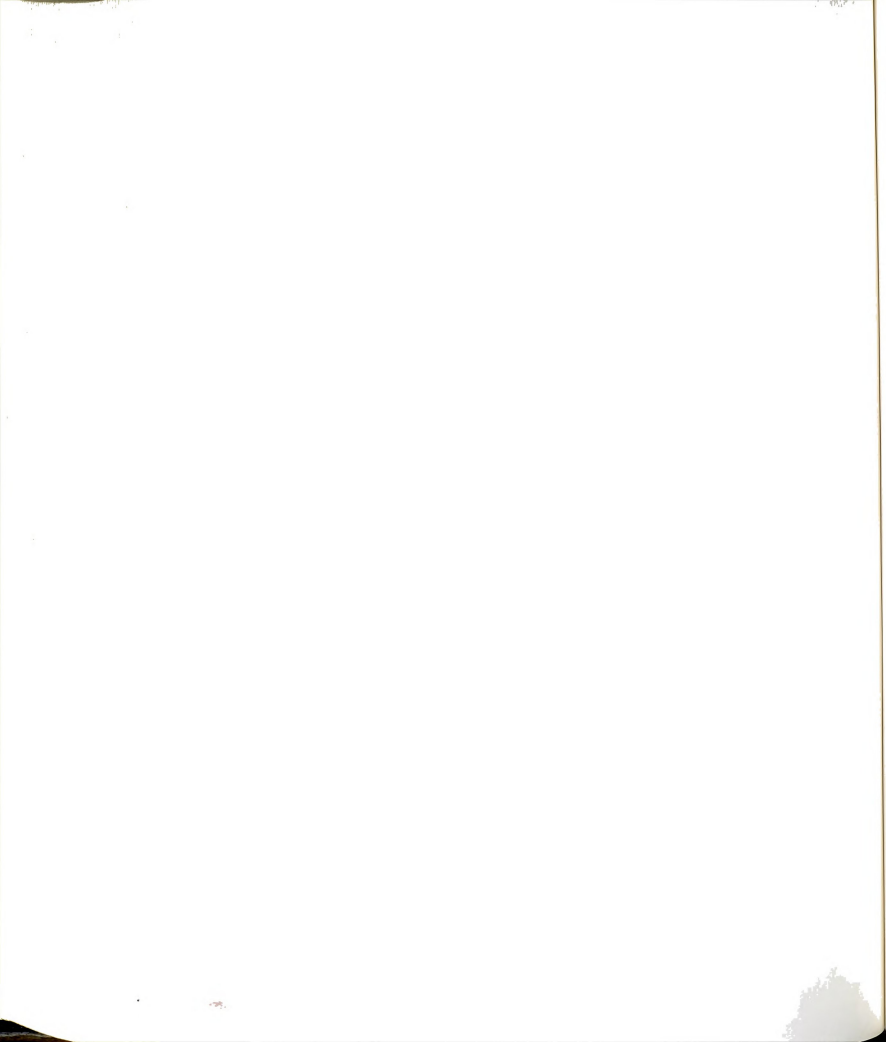


Appendix A-3.--Continued.

Teaching Method	Extension Director N = 23	DF	Rural development Director N = 20	t	p
	Mean S.D		Mean S.D		
Using letters as a Teaching methods	2.9 1.52	41	2.4 0.92	1.66	0.06
<u>Group methods</u>					
Using ag expo as a teaching methods	4.1 1.02	41	3.65 1.55	1.24	0.11
Using farmer classes as a teaching methods	4.4 0.68	41	4.60 0.55	0.46	0.32
Using ag days as a teaching methods	3.65 1.18	41	3.10 1.34	1.56	0.07
Group Teaching	4.1 0.80	41	3.6 1.07	1.98*	0.03
Field Trips as a teaching methods	4.4 0.71	41	4.4 0.66	0.50	0.48
Group Projects as a teaching methods	4.2 0.90	41	4.1 1.05	0.56	0.29

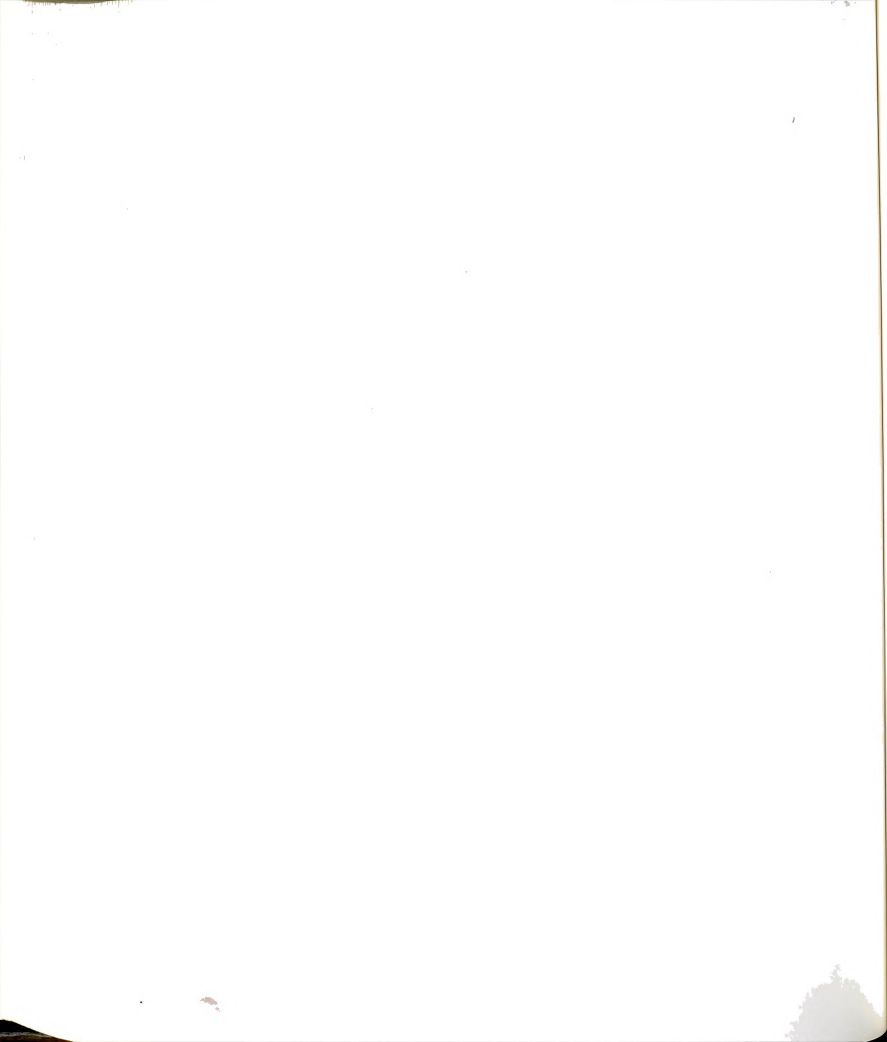
* Significant differences were found. which perception of teaching method were significantly different were:
Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with:

5 = strongly agree 4 = agree
3 = neutral 2 = disagree, 1 = strongly agree.



Appendix A-4.--Directors Perception of Importance of Areas Preferred by Their Agencies.

	Groups	No	Mean	S.D	t	p
Approved seeds.	Group 1	23	4.65	0.56		
	Group 2	20	4.85	0.48	1.2	0.12
Dry land farming	Group 1	23	3.00	1.22		
	Group 2	20	4.10	1.45	2.6*	0.01
Fertilizer.	Group 1	23	4.61	0.57		
	Group 2	20	4.10	0.77	2.43*	0.01
Pest Control	Group 1	23	4.35	0.76		
	Group 2	20	4.10	1.09	0.85	0.30
Herbicides	Group 1	23	4.00	0.93		
	Group 2	20	4.10	1.22	0.30	0.40
Vegetables	Group 1	23	3.30	0.90	5.01	0.00
	Group 2	20	1.70	1.20		
Fruit trees	Group 1	23	3.48	0.83		
	Group 2	20	1.75	1.22	5.37*	0.00
Soil management	Group 1	23	3.78	1.06		
	Group 2	20	4.00	1.22	0.61	0.28
Tillage practice	Group 1	23	3.83	1.27		
	Group 2	20	4.45	0.86	1.81*	0.04
Planting equipment	Group 1	23	3.87	1.31		
	Group 2	20	4.30	1.05	1.27	0.11
Field sprayers	Group 1	23	3.74	1.22		
	Group 2	20	3.80	1.46	0.16	0.43
Harvesting equipment	Group 1	23	4.04	1.08		
	Group 2	20	4.15	1.15	0.31	0.38
Tillage practice	Group 1	23	4.17	1.01		
	Group 2	20	4.65	0.79	1.70*	0.05
Animal breed	Group 1	23	3.91	1.21		
	Group 2	20	3.65	1.59	0.60	0.28



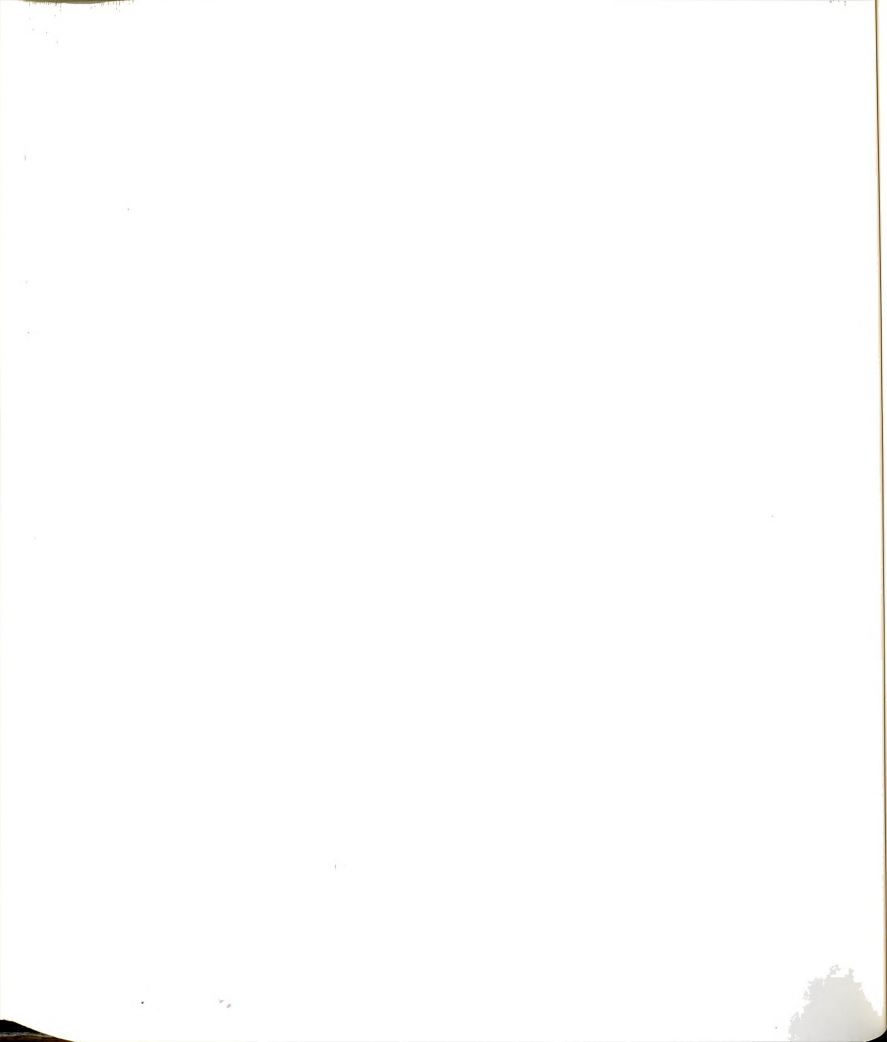
Appendix A-4.--Continued

Poultry breed	Group 1	23	3.74	1.30	0.81	0.31
	Group 2	20	3.35	1.80		
credit	Group 1	23	3.09	1.28	2.98*	0.00
	Group 2	20	4.20	1.08		
Market price	Group 1	23	3.00	1.41	1.54	0.06
	Group 2	20	3.65	1.28		
Storage	Group 1	23	3.22	1.61	0.40	0.35
	Group 2	20	3.40	1.24		
packaging	Group 1	23	3.00	1.56	0.33	0.37
	Group 2	20	2.85	1.31		
Farm cooperative	Group 1	23	4.04	1.30	0.25	0.40
	Group 2	20	3.95	1.07		
Forage crop	Group 1	23	3.83	0.92	2.00*	0.03
	Group 2	20	4.40	0.92		

Group 1 = Extension Director

Group 2 = Rural Development Director

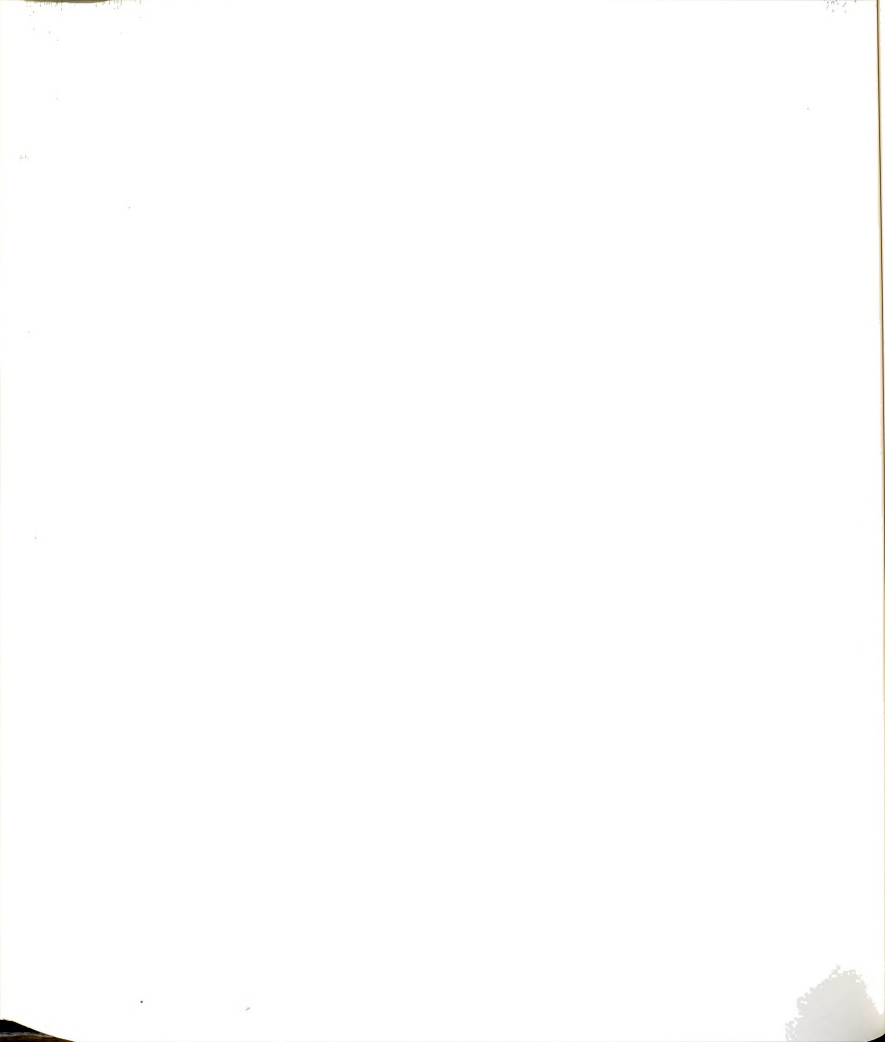
*The results of the t-test indicated a statistically significant difference.



Appendix A-5.--Mean and Standard Deviation of Directors Perception in Relation to Strengthening Agricultural Extension Systems in Khorassan

Statement	Extension Director	Rural development Director	2-tail t	p
	Mean S.D	Mean S.D		
Statement 1	4.56 0.90	4.20 1.06	1.23	0.23
Statement 2	3.74 1.14	4.65 0.67	-3.14*	0.00
Statement 3	4.61 0.78	4.45 1.10	0.11	0.58
Statement 4	4.78 0.52	4.80 0.52	-0.11	0.91
statement 5	4.78 0.52	4.90 0.31	-0.89	0.38
Statement 6	4.44 1.08	4.45 0.83	-0.05	0.96
Statement 7	4.39 1.03	4.85 0.49	-1.18	0.08
Statement 8	4.61 0.84	4.75 0.55	-0.64	0.52
Statement 9	4.78 0.42	4.65 0.75	0.73	0.47
Statement 10	4.70 0.64	4.65 0.88	0.20	0.84
Statement 11	4.61 0.78	4.75 0.55	0.67	0.50

Extension and Rural Development Directors responded to these items on a 5 point Likert type scale with: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree. Statements:



Statements of Appendix A-5.

Statement 1. Strong research extension linkage.

Statement 2. Integration of services of the Extension Department and Rural Development Department.

Statement 3. Strengthening the research capacity to meet the needs of the farmers.

Statement 4. Strengthening the knowledge and skills of the extension personnel through in service training.

Statement 5. Mobilizing extension specialists to train field level workers.

Statement 6. Reducing the duplication of work between Extension Department and Rural Development Department.

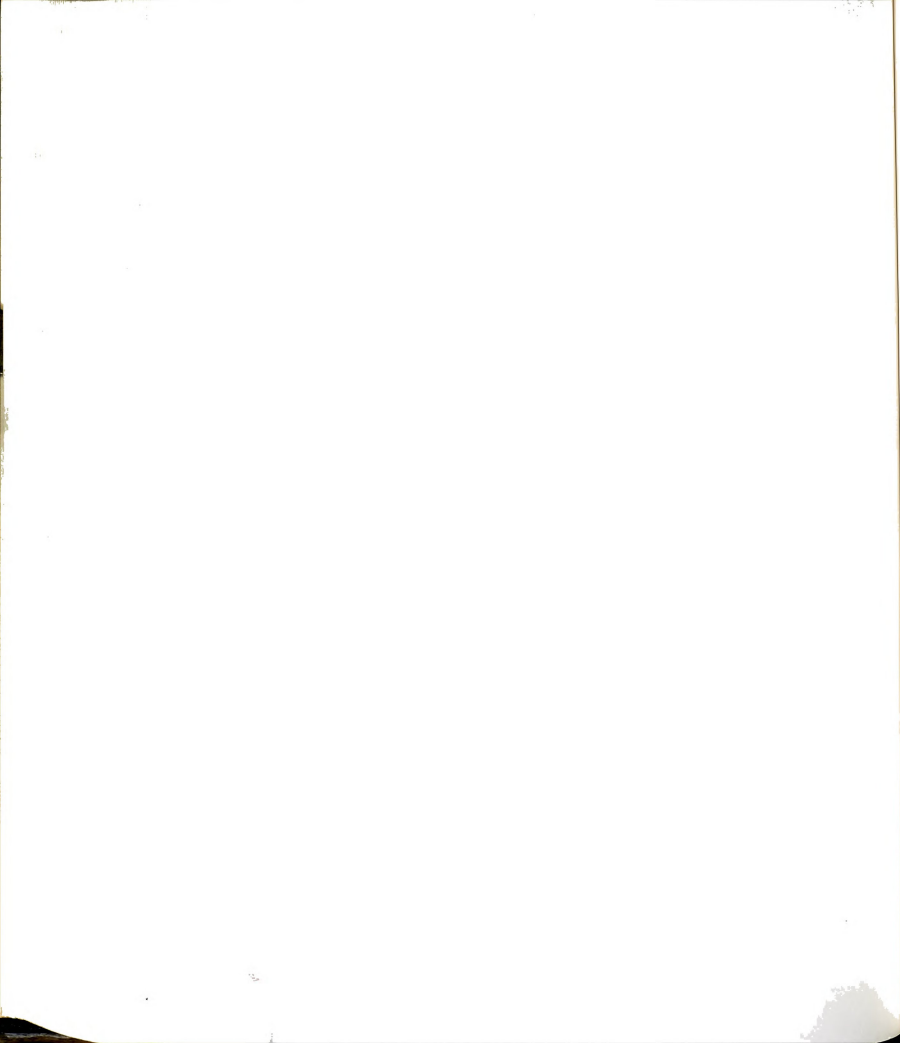
Statement 7. A coordination of local level agencies such as cooperatives, credit bank, extension and rural development. Decentralization of decision making (i.e. planning, implementation, and evaluation of extension programs.

Statement 8. Involving local people in extension programming.

Statement 9. Greater number of extension specialists and field level personnel.

Statement 10. Strengthening the mobility (transportation) and communication facilities.

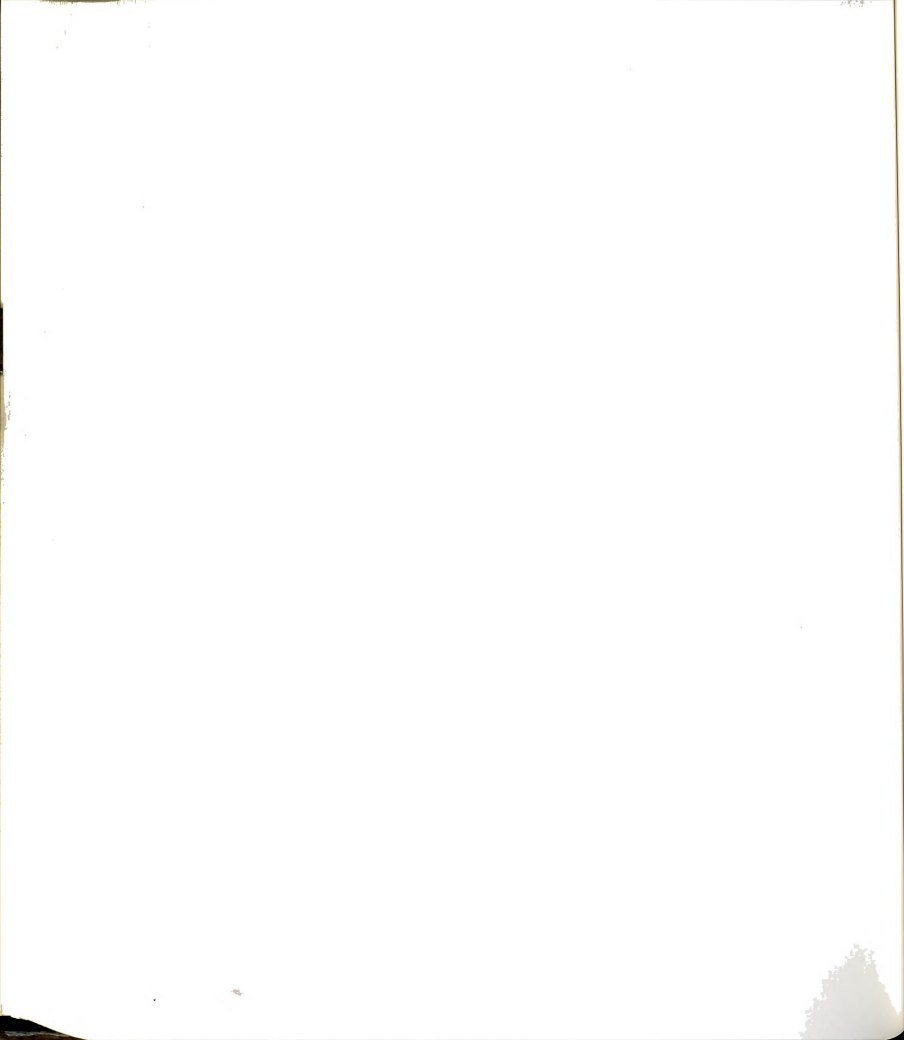
Statement 11. Maintaining higher levels of commitment, dedication, and morale of staff by increasing their salary and facility specialists and field level personnel.



Appendix A-6.--Directors Perception of their Agents in
Relation to Provision of Assistance to farmers

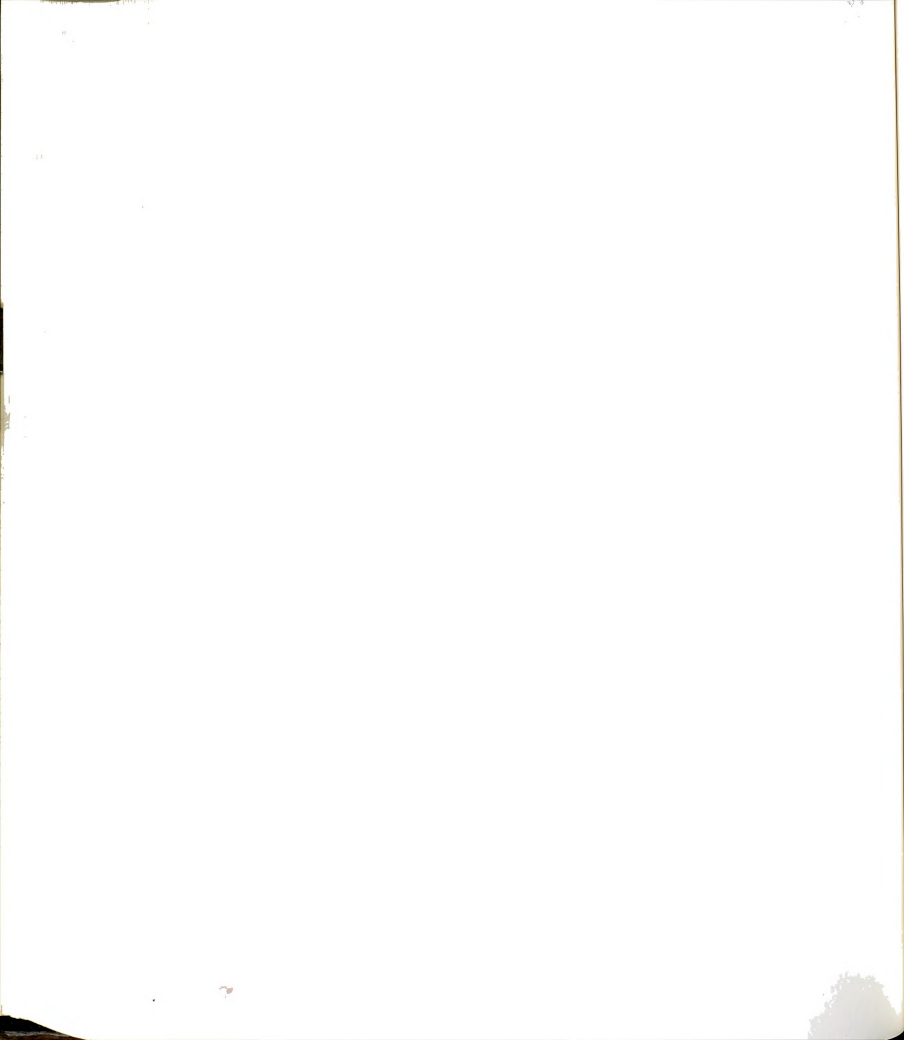
State- ment	Groups	No	Mean	S.D	2-tail t	p
**1-	Group1*	23	2.00	1.17	-1.53	0.13
	Group2*	20	2.55	1.19		
**2-	Group1	23	2.48	1.59	-1.14	0.26
	Group2	20	2.95	1.00		
**3-	Group1	23	3.30	0.70	1.75*	0.09
	Group2	20	2.85	0.99		
**4-	Group1	23	3.13	0.92	-0.08	0.94
	Group2	20	3.15	0.67		
**5-	Group1	23	3.04	0.98	-1.11	0.27
	Group2	20	3.35	0.81		
**6-	Group1	23	3.21	0.95	00.07	0.95
	Group2	20	3.20	0.70		
*Group 1 = Extension Director				*Group 2= Rural Development		

- **Statement 1. To what extent your organization organize seminar at which researcher present and demonstrate to the farmers their latest finding.
- **Statement 2. To what extend do your Rural Develop Personnel or Extension Agents developed written plans for each seminar or other training program.
- **Statement 3. To what extent do your Extension Agents or Rural Development personnel prepare demonstration plot.
- **Statement 4. To what extent do your Extension Agents or Rural Development Personnel take farmers on field trips or to visit research station.
- **Statement 5. To what extent is the organization effective in solving farmers problems.
- **Statement 6. To what extent do you feel the organization is active in farmers educational needs.



Appendix A-7.--Perception of Extension Agents and Rural Development Personnel Regarding the Importance of Extension Teaching Methods

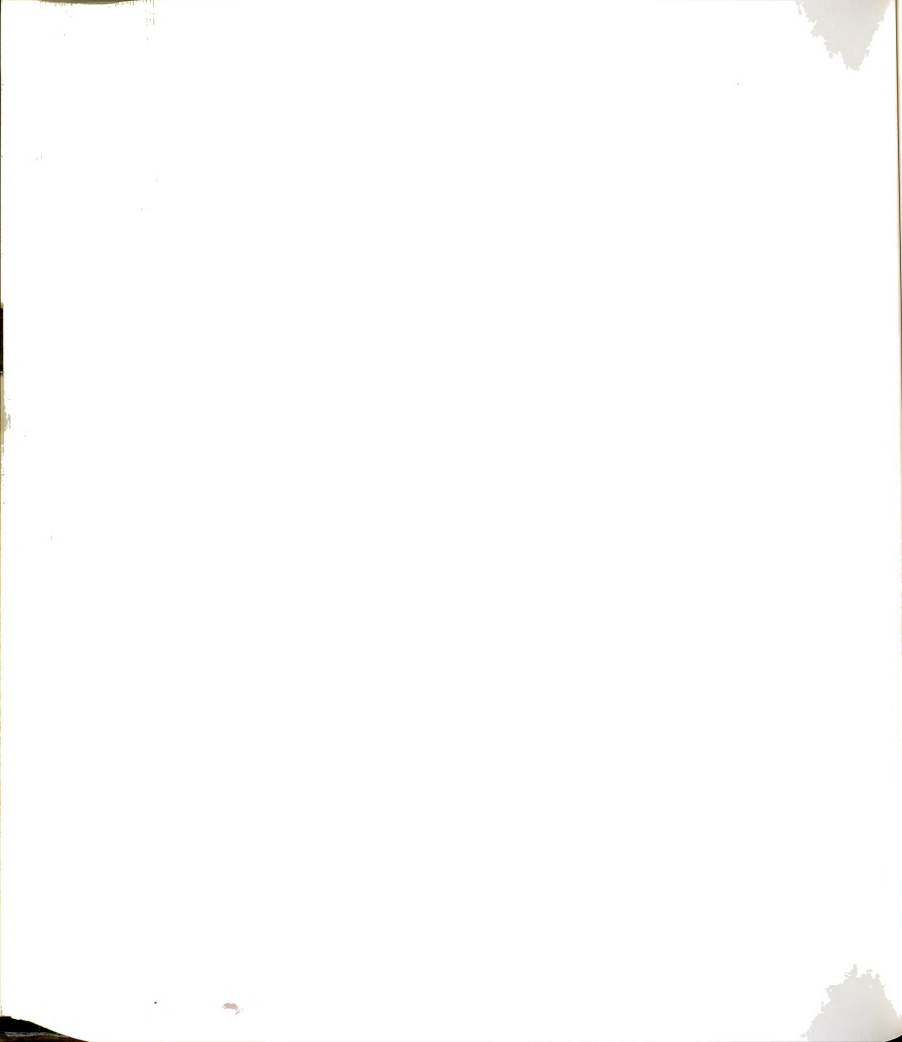
Method	Extension-Agent		Rural Development		
	DF	Mean S.D	Mean S.D	t	p
Individual Methods					
Farm visits	72	4.56 0.82	4.53 1.06	0.11	0.45
Office calls	72	4.00 0.96	2.90 0.98	4.71*	0.00
Letters/not telephone	72	3.30 1.12	2.93 1.66	1.27	1.03
Group Methods					
Exhibits at Agriculture shows	72	3.86 1.04	3.73 0.93	0.55	0.30
Farmers' classes	72	4.23 0.82	4.47 0.72	1.28	0.10
Field demonstrations	72	4.34 0.98	4.33 0.98	0.03	0.48
Field days	71	3.57 1.16	3.34 1.29	0.22	0.25
Group meetings	72	4.09 1.02	4.13 0.81	0.19	0.42
Tours/field trips	72	4.32 0.82	4.37 0.71	0.26	0.40
Group projects	72	3.86 1.01	3.67 1.27	0.53	0.52
Materials and Media.					
Live specimen & samples	72	3.95 0.94	4.39 0.75	2.10*	0.02
Leaflets and bulletins	73	4.14 0.62	4.29 0.77	0.83	0.29
Pictorials/Illustrations	73	4.00 0.98	3.97 0.82	0.15	0.44



Appendix A-7. Continued perception of Extension Agents and Rural Development Personnel Regarding the Importance of Extension Teaching Methods

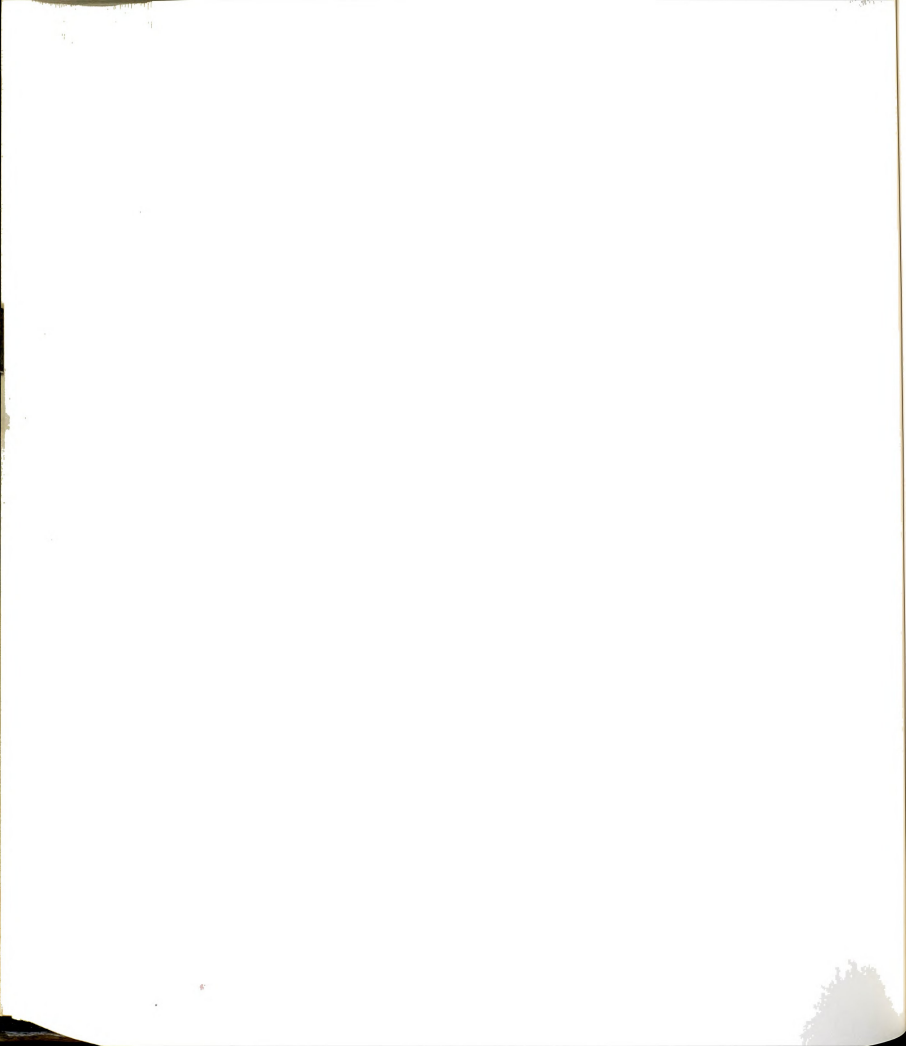
Method	Extension-Agent		Rural Development		
	DF	Mean S.D	Mean S.D	t	p
Television	73	3.80 1.16	4.00 0.88	0.82	0.30
News letters	73	3.52 1.12	3.26 0.88	1.09	0.14
Radio	73	3.64 1.19	3.58 0.71	0.23	0.41
Films & Slides	73	4.30 0.87	4.23 0.66	0.37	0.36
Videos & Films (Cinema)	73	4.14 1.10	4.16 0.77	0.11	0.46
Posters & Charts	73	2.84 1.11	2.71 0.92	0.53	0.30
Manuals	73	3.43 1.16	3.52 0.88	0.40	0.35
Other (Specify)					

Agents responded to these items on a five(5) point likert type scale with: 1=SD=Strongly Disagree 2=D=Disagree
3=N=Neutral 4=A=Agree 5=SA=Strongly Agree
* Significant at $\alpha=0.05$



Appendix A-8.--Mean and Standard Deviation of Agents Level of knowledge about Agricultural Subjects Areas

Area	Agent	No Cases	Mean	S.D	t	p
Crops	G1	31	2.55	0.81	2.17*	.03
	G2	43	2.86	0.41		
Pest-control	G1	31	2.13	0.85	2.43*	.02
	G2	43	2.53	0.59		
Herbicide product	G1	31	2.00	0.89	0.35	.73
	G2	44	2.07	0.79		
Animal product	G1	29	1.41	0.73	4.29*	.00
	G2	43	2.16	0.72		
Poultry product	G1	30	1.57	0.86	2.08*	.04
	G2	43	1.95	0.72		
Dry land farming	G1	30	2.37	0.81	0.21	.84
	G2	43	2.32	0.84		
Forage product	G1	31	2.68	0.70	1.32	.19
	G2	43	2.44	0.79		
Farm machinery	G1	31	2.32	0.87	0.94	.35
	G2	44	2.14	0.82		
Soil fertility	G1	30	1.97	0.81	0.30	.77
	G2	43	2.02	0.80		
Soil	G1	30	1.50	0.63	0.72	.47
	G2	43	1.63	0.82		
Marketing	G1	31	1.48	0.68	1.16	.25
	G2	43	1.67	0.72		
Irrigation	G1	31	2.10	0.75	2.02*	.05
	G2	44	2.45	0.76		
Animal power	G1	30	1.47	0.73	1.30	.20
	G2	43	1.72	0.88		
Local equipment	G1	31	1.71	0.78	0.41	.68
	G2	43	1.79	0.86		

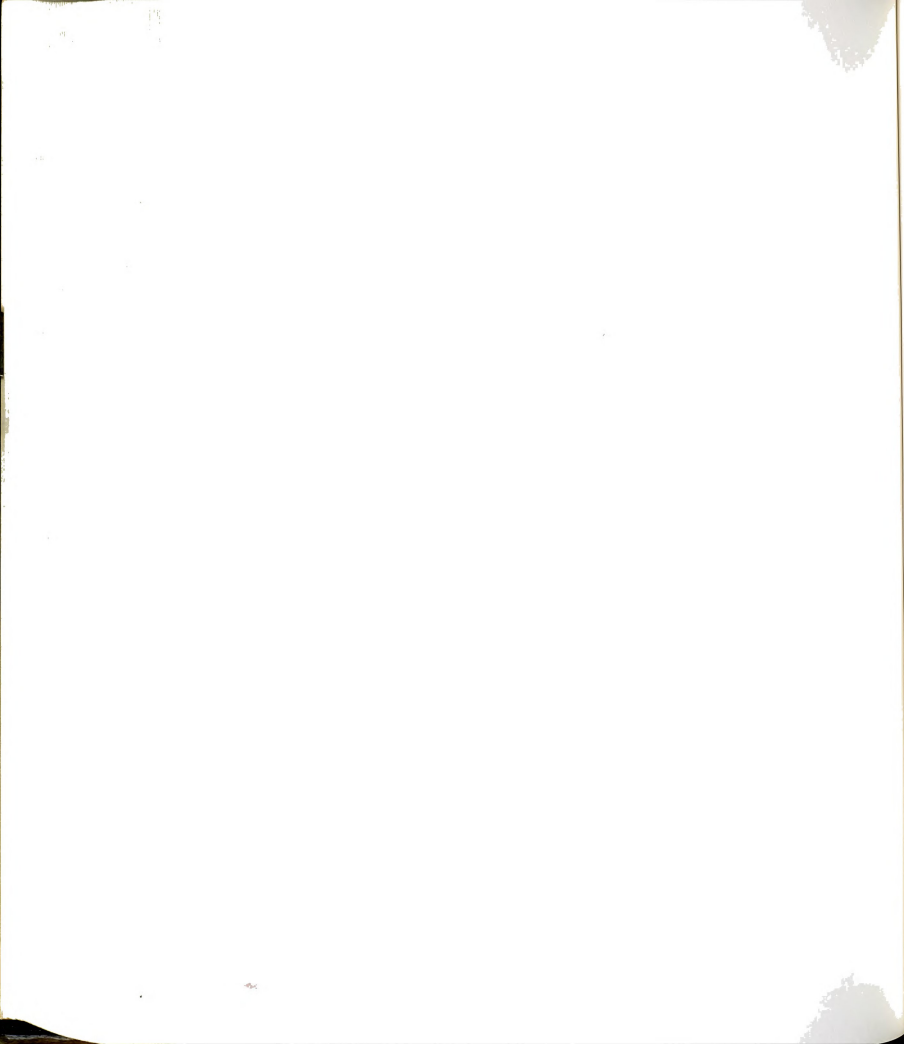


Appendix A-8.--Continued

Area	Agent	No Cases	Mean	S.D	t	p
Farm manage- ment	G1	31	2.16	0.90	0.52	.61
	G2	42	2.26	0.77		
Coopera- tive Ext	G1	31	1.64	0.75	2.16*	.03
	G2	43	2.07	0.88		
Bee keeping	G1	30	1.53	0.78	2.95*	.00
	G2	43	2.09	0.81		
Animal health	G1	31	2.39	0.76	3.00*	.00
	G2	34	2.90	0.72		
Tillage practice	G1	31	2.55	0.77	0.45	.65
	G2	43	2.63	0.73		
Adjust- ment	G1	31	2.10	0.87	0.48	.63
	G2	43	2.19	0.73		
Institio- nal work	G1	31	1.77	0.76	2.46*	.02
	G2	43	2.21	0.74		
Farm loan	G1	31	2.16	0.86	2.45*	.02
	G2	43	2.60	0.69		
Farm equipment	G1	31	1.77	0.81	0.23	.82
	G2	44	1.82	0.84		
coop- rative	G1	31	1.68	0.79	0.10	.92
	G2	44	1.66	0.81		
Demon- stration plots	G1	31	2.39	0.76	3.00*	.09
	G2	44	2.90	0.72		

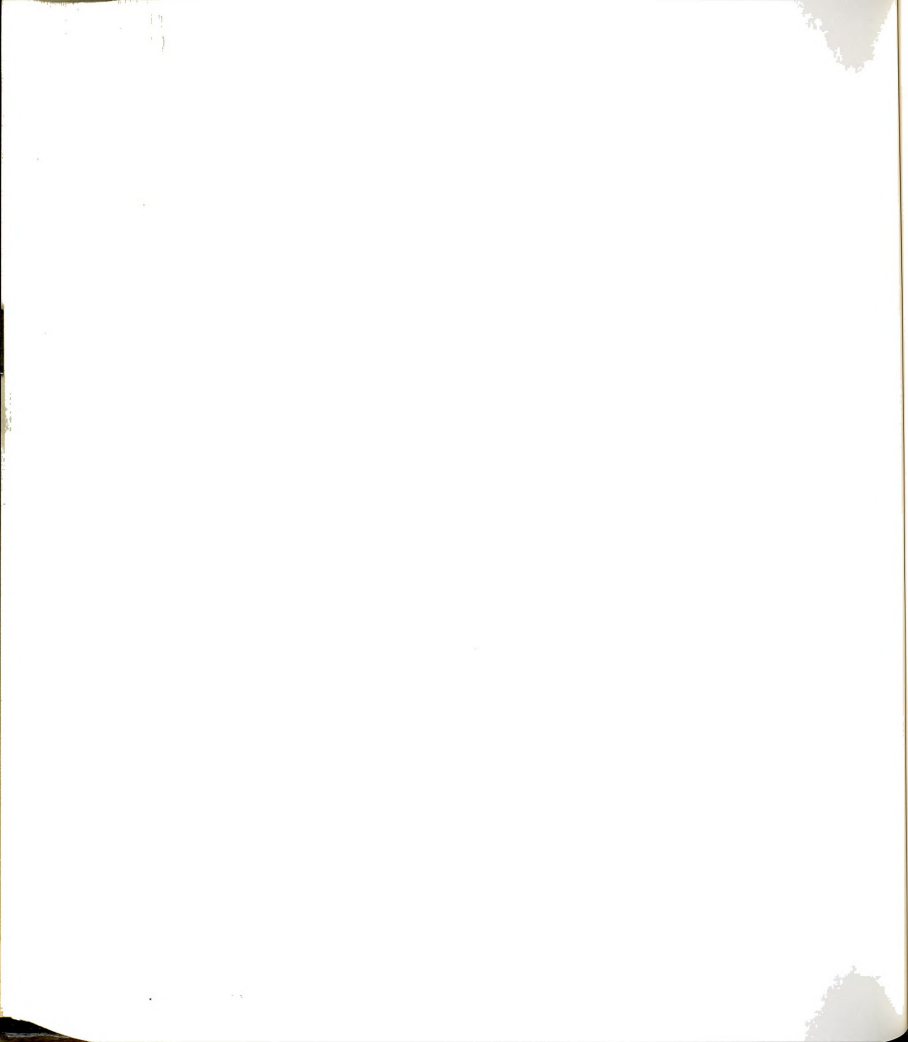
Extension agents and Rural Development personnel responded to these items on a 5 point Likert type scale with: 5 = very comfortable, 4 = comfortable, 3 = neutral, 2 = uncomfortable, 1 = very uncomfortable.

*The results of the t-test indicated a statistically significant difference.



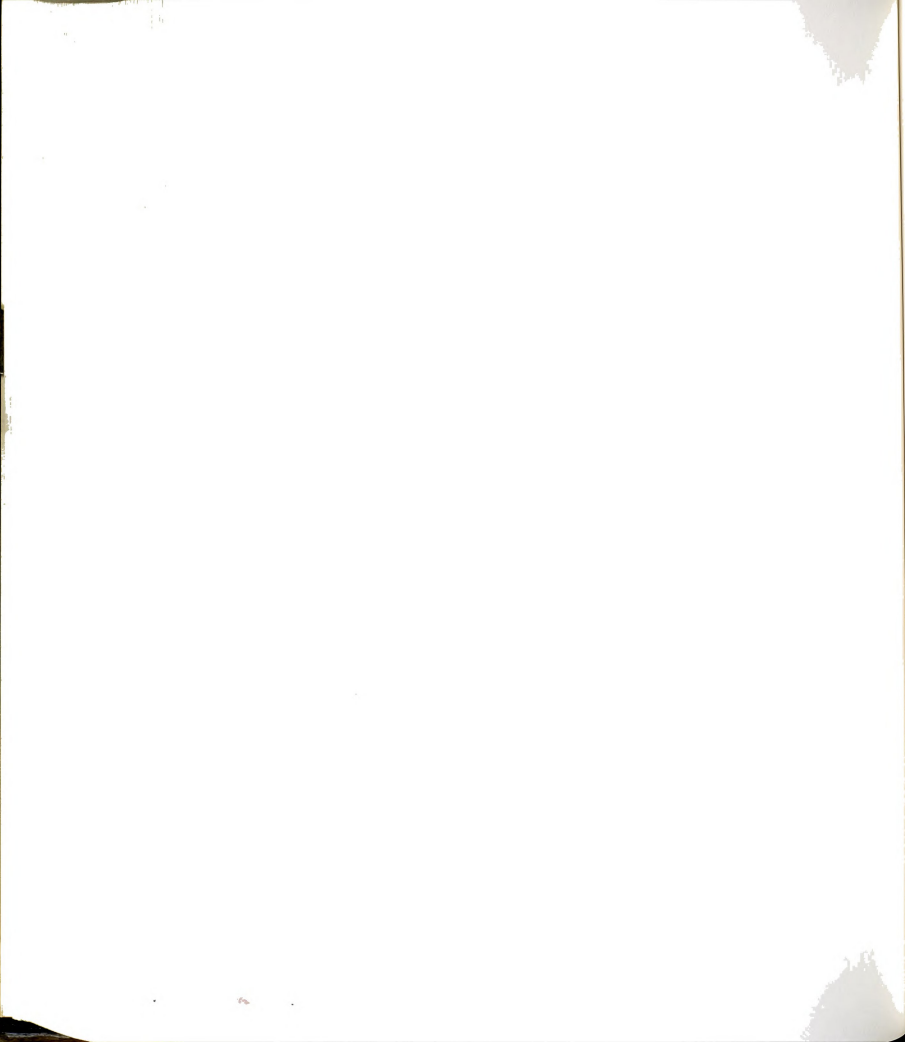
APPENDIX A-9.--Perception of Extension Agents and Rural Development Personnel Regarding Areas of Teaching.

	Extension Agent N = 44	Rural Development Personnel N=31
Areas	Yes No/ (%)	Yes No/ (%)
Approved seeds	39/88.6	22/71.0
Dry land farming	27/61.4	18/58.1
Use of fertilizers	41/93.2	23/74.2
Use of pesticides	41/93.2	21/67.7
Use of herbicides	38/86.4	20/64.5
New varieties of vegetables	18/46.9	03/09.7
New varieties of Fruit trees	26/59.1	04/16.1
Improvement of Soil management	28/63.6	20/65.5
Tillage equipment	41/93.2	27/87.1
Planting equipment	37/84.1	25/80.6
Fertilizer	39/88.1	23/74.2
Harvesting equipment	36/81.8	23/74.2
Tillage practices	43/97.7	26/83.9
Improved animal breeds	28/37.3	03/16.1
Improved poultry breeds	21/28.0	02/06.5
Institutional credit	13/29.0	08/25.8
Market price	14/31.8	03/06.8
Storage and post harvest practices	37/84.1	14/45.2
Packaging and trans- portation	12/27.3	07/22.6
Farm cooperative	24/54.5	09/29.0
Forage crop	39/88.6	26/83.9
Beekeeping	32/72.7	05/16.1
Rural handcrafts	11/25.0	02/06.5
Irrigation	41/93.2	22/71.0
Land leveling	42/93.2	21/67.7
Farm management	37/95.5	21/67.7
Soil fertility	39/88.1	22/71.0
Others(silk worm, cotton,and...etc)	09/20.5	04/12.9



Appendix A-10.-- Extension Agent and Rural Development
Personnel perception of Linkages with Organizations

Organization category	Extension Agent N = 44	Rural Development N = 31	t	p
	Mean S.D	MEAN S.D		
Linkage with agricultural College and universities	0.68 0.85	0.90 0.82	1.16	0.13
Agricultural research station	1.27 0.69	1.23 1.01	0.24	0.40
Agricultural bank	1.41 0.78	1.45 0.98	0.22	0.41
Credit institutions	0.86 0.89	1.06 0.98	0.91	0.32
Rural Development research station	0.30 0.59	1.77 1.04	7.73*	0.00
Farm Machinery Organizations	0.98 0.87	1.10 0.82	0.59	0.28
Fertilizer agencies	1.27 1.10	1.60 0.87	1.50	0.07
Pesticide research center	1.66 0.82	0.90 1.00	3.54*	0.00
Animal research center	1.25 0.80	0.48 0.80	4.03*	0.00
Soil research center	1.18	0.77	2.60*	0.02
Forestry research center	0.84 0.85	0.58 0.79	1.32	0.09
Dry land farming research station	0.84 0.93	1.68 0.86	3.91*	0.00
Cooperative organizations	2.07	1.30	4.20*	0.00
Other	1.50 1.12	1.75 1.09	0.28	0.39



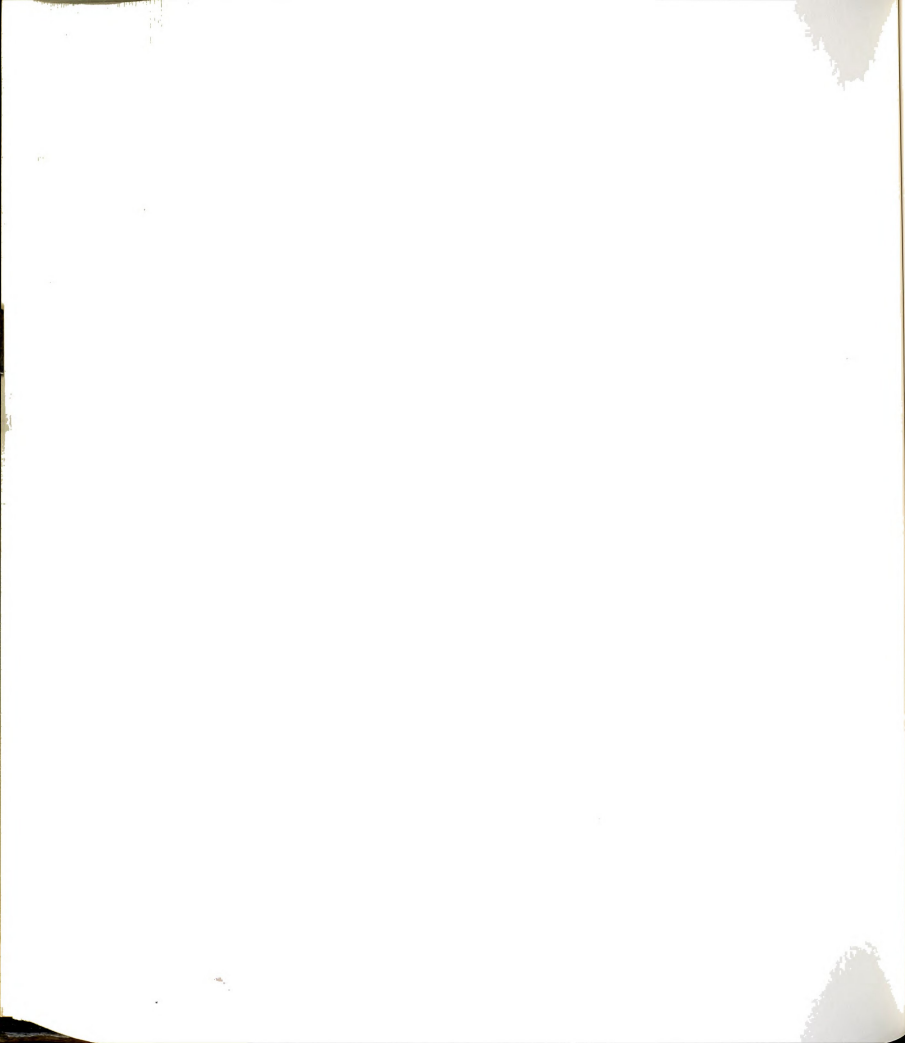
Appendix 11. Agent Perceptions Regarding Provision of Assistance to Farmers

Statement	Extension Agents N = 44	Rural Development Personnel N =31	t	p
	Mean S.D	Mean S.D		
Do you organize seminars at which researcher searchers present and demonstrate their latest findings to the farmers	2.59 1.05	2.68 0.96	0.36	0,36
Do you develop written plans for each seminar	2.70 0.89	2.32 0.96	1.74*	0.04
Do your develop demonstration plots for The farmers	3.14 0.81	2.29 1.08	3.81*	0.00
Did you Have extension extension classes For the farmers in 1989	2.77 1.22	2.14 1.14	2.02*	0.02
Did you take farmers for field trips or visits the the research stations in 1989	1.93 1.18	2.13 1.10	0.74	0.26
Do you know about research station the state	2.50 1.22	1.97 1.12	1.90*	0.03

Agents respondent to these items on a 5 point Likert type scale with: 0 = None 1 = Little 2 = Some
3 = Much 4 = Very Much

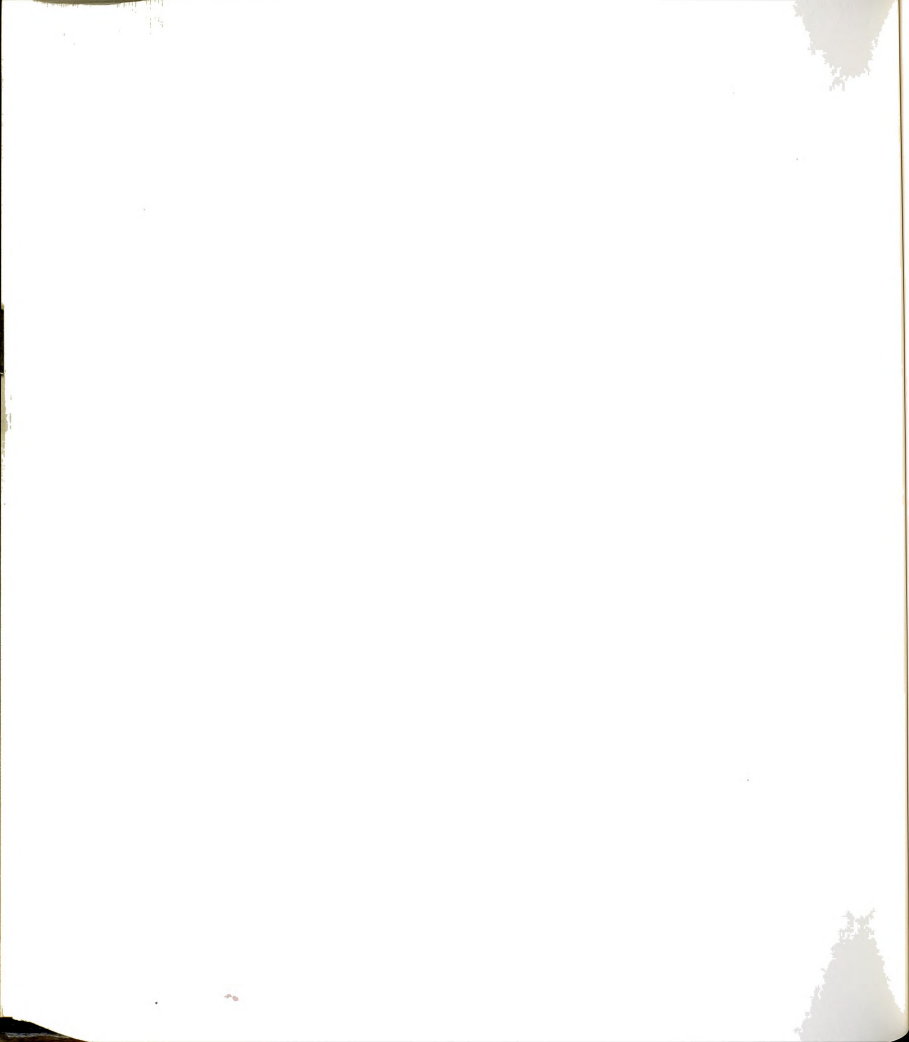
DF = 73

*Significant differences were found.



**Appendix A-12.--Extension Agents and Rural Development
Personnel Perception Regarding Training Needs**

Area of training	Extension Agents N = 44		Rural Development Personnel N = 31		t	p
	Mean S.D	Mean S.D	DF			
Tractor skills	2.40 1.09	2.77 1.04	73		1.43	0.8
Tractor operation	2.25 1.33	2.71 1.08	73		1.56	0.06
Primary tillage	2.41 1.24	2.71 1.02	73		1.10	0.14
Secondary tillage	2.36 1.21	2.71 0.89	73		1.34	0.09
Row crop planter	2.50 1.52	2.90 0.96	73		1.50	0.07
Harvesting equipment	2.57 1.10	2.77 1.13	73		0.78	0.28
No tilt farm operation	1.77 1.49	2.29 1.40	73		1.59	0.07
Dry land machinery	2.23 1.54	2.68 1.00	73		1.65	0.05
Post harvesting equipment	2.09 0.95	2.32 1.12	73		0.94	0.32
Irrigation equipment	2.16 1.17	2.65 1.06	73		1.82*	0.03
Pest control equipment	2.55 1.34	2.77 0.87	73		0.82	0.29
Soil conservation equipment	2.50 1.20	3.13 0.83	72		2.50*	0.00
Animal production	2.30 1.08	2.71 0.60	73		1.56	0.06



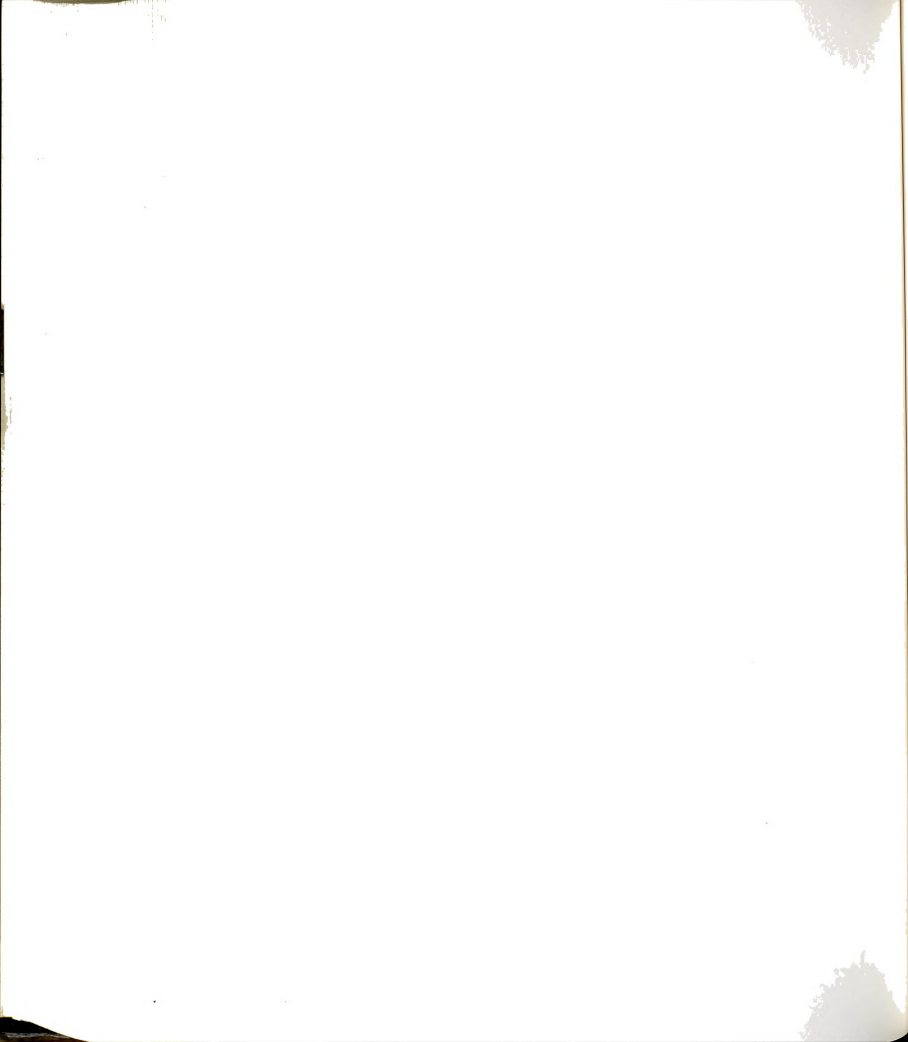
Appendix A-12. continued

Marketing	2.11 0.98	3.00 73 1.05	3.69*	0.00
Management of research plot	2.16 1.09	2.97 73 1.00	3.24*	0.00

*The results of the t-test indicated a statistically significant difference.

Appendix A-13.--Perception of Farmers in Relation With Area advice by Extension agent and Rural Development

Area	Extension Agent		Rural Development	
	Responded Number	Yes/(%)	Responded Number	Yes/(%)
Crop, Seed Fertilizer	233	183/78.5	214	147/68.7
Farm Machinery	228	049/21.5	214	048/22.4
Soil con- servation	227	034/15.0	213	020/ 9.4
Soil Fertility	228	033/14.5	214	026/12.1
Marketing of ag Production	228	009/ 3.9	214	008/ 3.8
Dry land Farming	228	024/10.5	213	028/13.2
Use of Pesticides	229	134/59.8	216	077/35.6
Use of Herbicides	228	071/31.1	216	040/18.5
New Varieties of vegetables	227	009/04.0	216	007/03.2
New Varie- ties of trees	228	034/14.9	216	006/02.8
Bee Keeping	228	003/01.3	216	007/03.2
Hand Crafts	228	006/02.6	215	015/07.0
Food Pro- cessing	228	005/02.2	216	008/03.7



APPENDIX B
SURVEY INSTRUMENTS



Questionnaire For Director and Manager

This questionnaire is designed to assess the director and manager of the research station, extension agencies, and rural development department in their expectations of their agencies in the development of agricultural mechanization in the state of Khorassan in The Islamic Republic of Iran.

Part I

A. Background Information:

Please write appropriate answers on the lines provided for each of the following:

1. What is your title or position _____.
2. Highest level of education _____.
3. How many years you have been in this position? _____.
4. How long have you been working in an extension related job _____?
5. To which agency do you belong?
 _____ a) Department of agriculture?
 _____ b) Jihad Sazandeghi
 _____ c) others
6. Number of extension or rural development personnel in your department? _____
7. Have you received any special training related to your personal job?
 _____ YES _____ NO

If yes, could you specify:

- a. _____
- b. _____
- c. _____

8. How many of the following group extension activities were completed during the past year?

<u>Group activities comlrtd</u>	<u>appropriate number</u>
Farmer training courses /workshop	_____
Farmers' field days	_____
Radio listening group	_____
Farmer contacts	_____
Group tours	_____
Other (please specify)	_____

Part II. Purpose of the Department:

Please indicate the extent of your agreement or disagreement on the following statements, using the scale below.

9. The purpose of the Extension work of my department is:

- | | |
|--|-------------|
| a. transfer of technology and innovations from the research station to the farmers | SA A N D SD |
| b. to support people's growth and change. | SA A N D SD |
| c. to assist farmers in obtaining improved inputs such as seed, fertilizer, pesticides, etc. | SA A N D SD |
| d. to enable farmers to help themselves. | SA A N D SD |



- | | | | | | |
|---|----|---|---|---|----|
| e. to link people with local organizational and institutional resources. | SA | A | N | D | SD |
| f. to increase farmers' knowledge and skills on approved farming practices. | SA | A | N | D | SD |
| g. to increase farmers' production and income. | SA | A | N | D | SD |
| H. to prepare free input facility. | SA | A | N | D | SD |
| I. to prepare Working facility. | SA | A | N | D | SD |
| J. need assessment | SA | A | N | D | SD |
| k. to link research and farmers needs | SA | A | N | D | SD |
| L. to educate farmers by doing | SA | A | N | D | SD |
| M. to educate farmer by T&V | SA | A | N | D | SD |
| N. others (specify) | SA | A | N | D | SD |

10. Clientele Served:

Please specify the primary group or groups that your organization serves and indicate the relative importance. If more than one group, please indicate the approximate division of time and effort (as a percentage) that your organization devoted to each group.

	Little Importance				Vary Importance	
	1	2	3	4	5	
a. Larger Commercial Farmers	_____	_____	_____	_____	_____	
b. Smaller Commercial Farmers	_____	_____	_____	_____	_____	
c. Landless Farmer	_____	_____	_____	_____	_____	
d. Farmers growing industrial crops(sugar beet, cotton, corn,	_____	_____	_____	_____	_____	
e. Farmers dealing with forage crops (corn, alfalfa)	_____	_____	_____	_____	_____	
F. farmers dealing with cereal crops	_____	_____	_____	_____	_____	
f. Farmers dealing with irrigated land.	_____	_____	_____	_____	_____	
g. dry land farming.	_____	_____	_____	_____	_____	

Part III. Expectations of the department :

Based on your perceptions, what percentage of time do you expect your agents to spend on the following activities?

11. Extension Planning and Support Activities:
 Conducting needs assessment, program planning,
 preparing reports, in-service training, program
 evaluation and other related activities.

_____ %



12. Educational Activities: Implementing educational programs such as providing information and technical assistance to clients, conducting on farm visits, demonstrations, educational meetings, field days and other educational activities. _____ %

13. Non-educational Activities: Carrying out non-educational activities such as; regulatory work, data collection (e.g. conducting agricultural census, crop forecasting), settling local disputes, work on other governmental programs and servicing local government. _____ %
 _____ %
 Total 100

Part IV. Teaching methods.

14. Please indicate the importance of each of the following teaching methods that should be used by your personnel. Circle the appropriate number that reflects the relative importance of each method.

Adaptation of the following materials and media:

	not important	very important
Extension Posters	1.....2.....3.....4.....5	
Television	1.....2.....3.....4.....5	
News paper articles	1.....2.....3.....4.....5	
Exhibits at the fairs	1.....2.....3.....4.....5	
Newsletters	1.....2.....3.....4.....5	
Radio	1.....2.....3.....4.....5	
Film	1.....2.....3.....4.....5	
Other (Please specify)	1.....2.....3.....4.....5	

Part IV. Teaching methods continued

Individual methods:

Farm visits	1.....2.....3.....4.....5
Office call	1.....2.....3.....4.....5
Letters/notes	1.....2.....3.....4.....5
Telephone	1.....2.....3.....4.....5
Group methods:	
Exhibits at agricultural	1.....2.....3.....4.....5
Farmers classes	1.....2.....3.....4.....5
Field days	1.....2.....3.....4.....5
Group meetings	1.....2.....3.....4.....5
Tours/field trips	1.....2.....3.....4.....5
Group projects	1.....2.....3.....4.....5

Part V. Perceptions Related to Provision of assistance to the Farmers

Please circle a number from 0 through 4 on the scale to the right of each item. 0 = None 1 = Little 2 = Some 3 = Much 4 = Very Much

15. To what extent does your department organize seminars at which researchers present and demonstrate to the farmers their latest findings? 0 1 2 3 4

16. To what extent do your field workers develop plans for each seminar or other training programs? 0 1 2 3 4



17. To what extent do your field workers prepare demonstration plots for the farmers? 0 1 2 3 4
18. To what extent do your field workers take farmers on field trips or to visit research stations? 0 1 2 3 4
19. To what extent do you think your department is helpful in solving the farmers problems? 0 1 2 3 4
20. To what extent do you feel that your department meets the educational needs of the farmers? 0 1 2 3 4

Part VI. Expectations of the department concerning the subject area coverage:

21. Please indicate the importance of each of the following subject areas in your department. Circle the appropriate number that reflects the relative importance of each method.

	not important				very important
a. approved seed varieties	1	2	3	4	5
b. dry land farming of crops	1	2	3	4	5
c. using fertilizer	1	2	3	4	5
d. using pesticides	1	2	3	4	5
e. using herbicides	1	2	3	4	5
f. new varieties of vegetables	1	2	3	4	5
g. new varieties of fruit trees	1	2	3	4	5
h. improved soil management	1	2	3	4	5
i. tillage equipment	1	2	3	4	5
j. planting equipment	1	2	3	4	5
k. fertilizer equipment	1	2	3	4	5
l. harvesting equipment	1	2	3	4	5
m. tillage practices	1	2	3	4	5
n. improved animal breeds	1	2	3	4	5
o. improved poultry breeds	1	2	3	4	5
p. institutional credit	1	2	3	4	5
q. marketing	1	2	3	4	5
r. storage and post harvest	1	2	3	4	5
s. packaging, processing and	1	2	3	4	5
t. transportat	1	2	3	4	5
u. farm cooperative	1	2	3	4	5
v. forage crop practices	1	2	3	4	5

Part VII. Strengthening Extension Efforts:

22. Many factors influence the performance of extension activities, such as how well they are paid, mobility, the availability of teaching aids. In this section we would like to know the management style in your organization. Yes No

a. Are there any written and distributed evaluation procedures and criteria? _____

b. Is there an annual written evaluation on each staff? _____

c. Are field personnel notified of evaluation results? _____



- d. Are supervisors instructed on how to observe performance and provide counseling? _____
- e. Is pay distributed on a merit basis? _____
- f. Does a considerable range of salary exist based solely on performance? _____
- g. Does extra training result in higher pay for the same job? _____
- h. Are promotions based on performance? _____
- i. Are supervisors encouraged to recognize excellent work on the job? _____
- j. Does the system provide informal feedback to personnel on poor performance? _____
- k. Does the system provide for written reprimands? _____
- l. Does the system provide for punishment such as loss of pay or demotion? _____

23. Please give careful thought about your own experience and current work and mark the one that best expresses your opinion for each of the following:

SA = Strongly agree A = Mainly agree but somewhat disagree
 N = Neutral D = Mainly disagree but somewhat agree
 SD = Strongly disagree

In order to strengthen the extension efforts of your department, there is a need for:

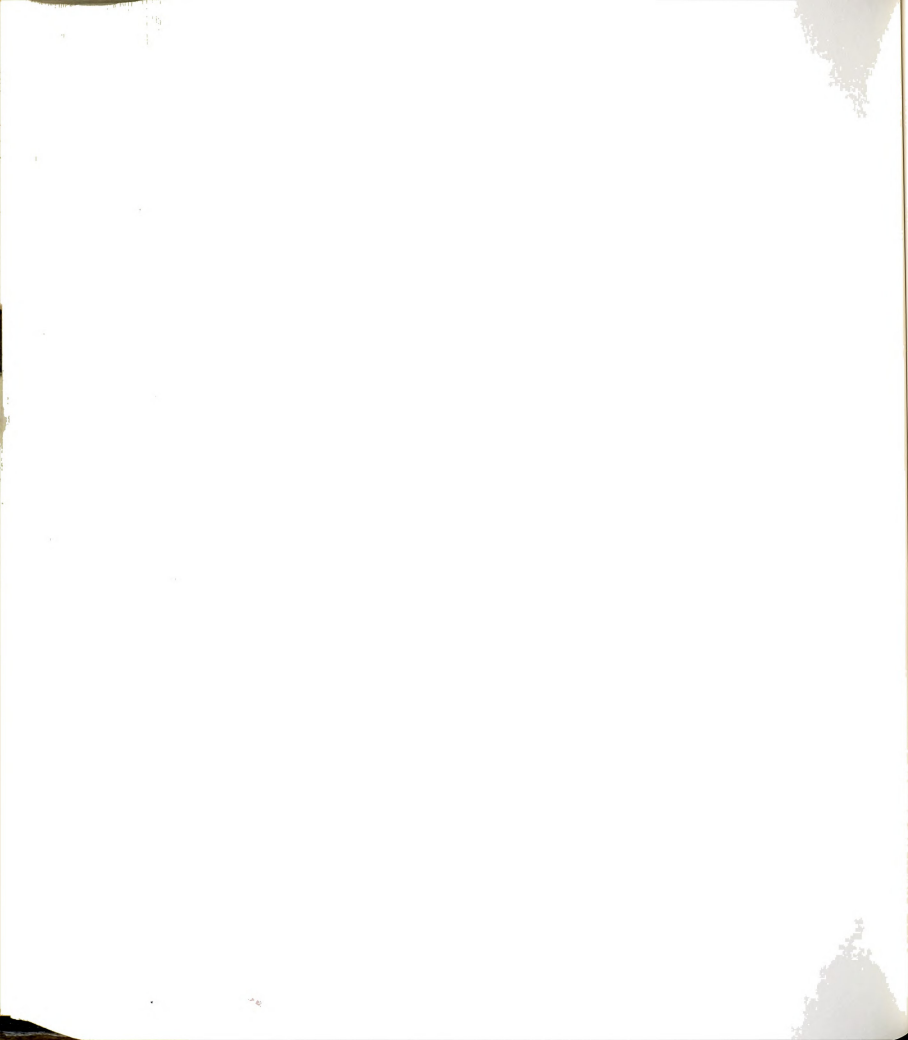
- | | | | | | |
|---|----|---|---|---|----|
| a. Strong research extension linkage | SA | A | N | D | SD |
| b. Integration of services of the Extension Department and Rural Development Department | SA | A | N | D | SD |
| c. Strengthening the research capacity to meet the needs of the farmers | SA | A | N | D | SD |
| d. Strengthening the knowledge and skills of the extension personnel through in service training. | SA | A | N | D | SD |
| e. Mobilizing extension specialists to train field level workers. | SA | A | N | D | SD |
| f. Strong evaluation and monitoring unit within the department | SA | A | N | D | SD |
| g. Reducing the duplication of work between Extension Department and Rural Development Department | SA | A | N | D | SD |
| h. A coordination of local level agencies such as cooperatives, credit bank, extension and rural development. | SA | A | N | D | SD |



- i. Decentralization of decision making (i.e. planning, implementation, and evaluation of extension programs) SA A N D SD
- j. Involving local people in extension programming. SA A N D SD
- k. Greater number of extension specialists and field level personnel SA A N D SD
- l. Strengthening the mobility (transportation) and communication facilities SA A N D SD
- m. Maintaining higher levels of commitment, dedication, and morale of staff by increasing their salary and facility SA A N D SD

24. I would appreciate any final comments or suggestions that you would like to make. Please use the space below for this purpose.

Thank you for your willingness to share your opinion about the cooperation and activities of the two agricultural extension services



Farmers Questionnaire

This interview schedule is designed to compare the farmers' participation in extension activities, and the relationship between the organization that are involved in the development and dissemination of agricultural mechanization and innovation in IRI in the State of Khorassan.

Part I General Information: Please write appropriate answer on the line provided for each of the following:

1. Age of the respondents _____ years
2. Sex: Male _____ Female _____
3. Marital Status: _____
4. Highest level of education _____
5. Size of Farm (in Hectares) _____
6. Type of Ownership:
 Do you own your own farm? _____
 Do you rent your farm? _____
7. (Option) Estimated income for 1989 (check one)
 _____ 20,000 ore less tomans
 _____ 21,000--040,000 tomans
 _____ 41,000--060,000 tomans
 _____ 61,000--080,000 tomans
 _____ 81,000--100,000 tomans
 _____ 100,000 _ or up

Part II. Expectations from the visits of the Extension and Rural Development Agents:

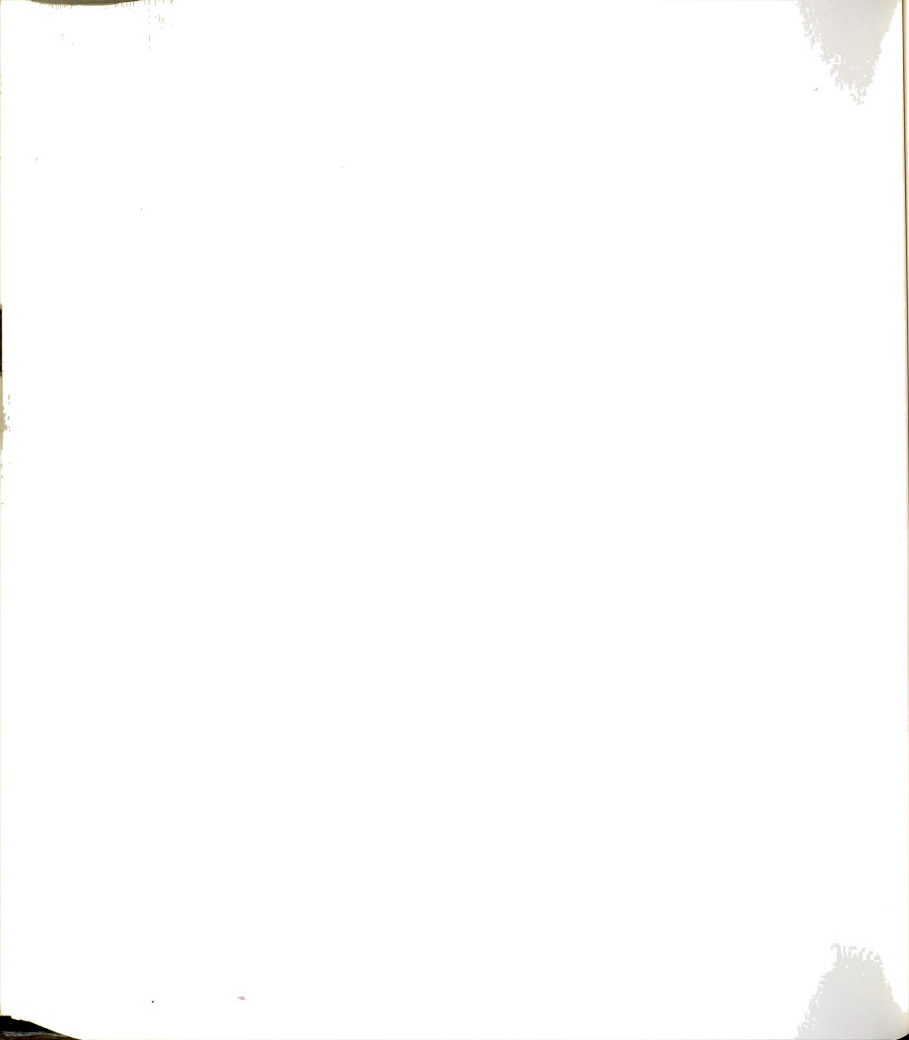
8. Have you had any contact with the extension worker during the last year (1989) _____ Yes _____ No (go to Ques. 9)
 If yes how often did you have contact with him/her?
 _____ Less than once in six months
 _____ Once in six to twelve months
 _____ More than once per year
9. Have you had any contact with the rural development worker during the last year (1989)? _____ Yes _____ No (go to Ques. 10)

If yes how often did you have contact with him/her?

- _____ a. Less than once in six months
- _____ b. Once in six to twelve months
- _____ c. More than once per year

10. If the answer of question 8 was yes, in which of the following areas does the extension agent give advice and direction to you?: (Please check as appropriate)

- | | yes | No |
|---|-------|-------|
| a. Crop production related categories such as seeds, fertilizer, plants, etc. | _____ | _____ |
| b. Farm equipment and machinery. | _____ | _____ |
| c. Soil conservation. | _____ | _____ |
| d. Soil fertility. | _____ | _____ |
| e. Marketing of agricultural production. | _____ | _____ |
| f. Dry land farming. | _____ | _____ |
| g. Using pesticides. | _____ | _____ |
| h. Using herbicides. | _____ | _____ |
| i. New varieties of vegetables. | _____ | _____ |
| j. New varieties of fruit trees | _____ | _____ |
| k. Bee Keeping | _____ | _____ |



- | | | |
|---------------------------------|-------|-------|
| l. Hand crafts | _____ | _____ |
| m. Fruit storage and processing | _____ | _____ |
| n. Transportation | _____ | _____ |
| o. Post harvest activities | _____ | _____ |
| p. Animal husbandry | _____ | _____ |
| q. Land preparation | _____ | _____ |
| r. Packaging | _____ | _____ |
| s. Others (please specify) | _____ | _____ |

11. If the answer to question 9 was yes, does the Rural Development Personnel give advice and direction to you: (please check as appropriate).

- | | Yes | No |
|--|-------|-------|
| a. Crop production related categories such as seeds, fertilizer, plant, etc. | _____ | _____ |
| b. Farm equipment and machinery. | _____ | _____ |
| c. Soil conservation. | _____ | _____ |
| d. Soil fertility. | _____ | _____ |
| e. Marketing of agricultural production | _____ | _____ |
| f. Dry land farming. | _____ | _____ |
| g. Using pesticides. | _____ | _____ |
| h. Using herbicides. | _____ | _____ |
| i. New varieties of vegetables. | _____ | _____ |
| j. New varieties of fruit trees | _____ | _____ |
| k. Bee Keeping | _____ | _____ |
| l. Hand crafts | _____ | _____ |
| m. Fruit storage and processing | _____ | _____ |
| n. Transportation | _____ | _____ |
| o. Post harvest activities | _____ | _____ |
| p. Animal husbandry | _____ | _____ |
| q. Land preparation | _____ | _____ |
| r. Packaging | _____ | _____ |
| s. Others (please specify) | _____ | _____ |

12. Do you have contact both agents? _____ Yes _____ No
 If yes do the two agents give the same services _____

_____ Yes _____ No
 If yes were both services necessary for you?
 _____ Yes _____ No

13. Which agency shares more updated information and new technology with you ?

- _____ a. Rural Development Personnel
 _____ b. Extension Agent
 _____ c. both
 _____ d. Neither

- 13a. Which agency field personnel do you consider are more competent in solving your farm problem?

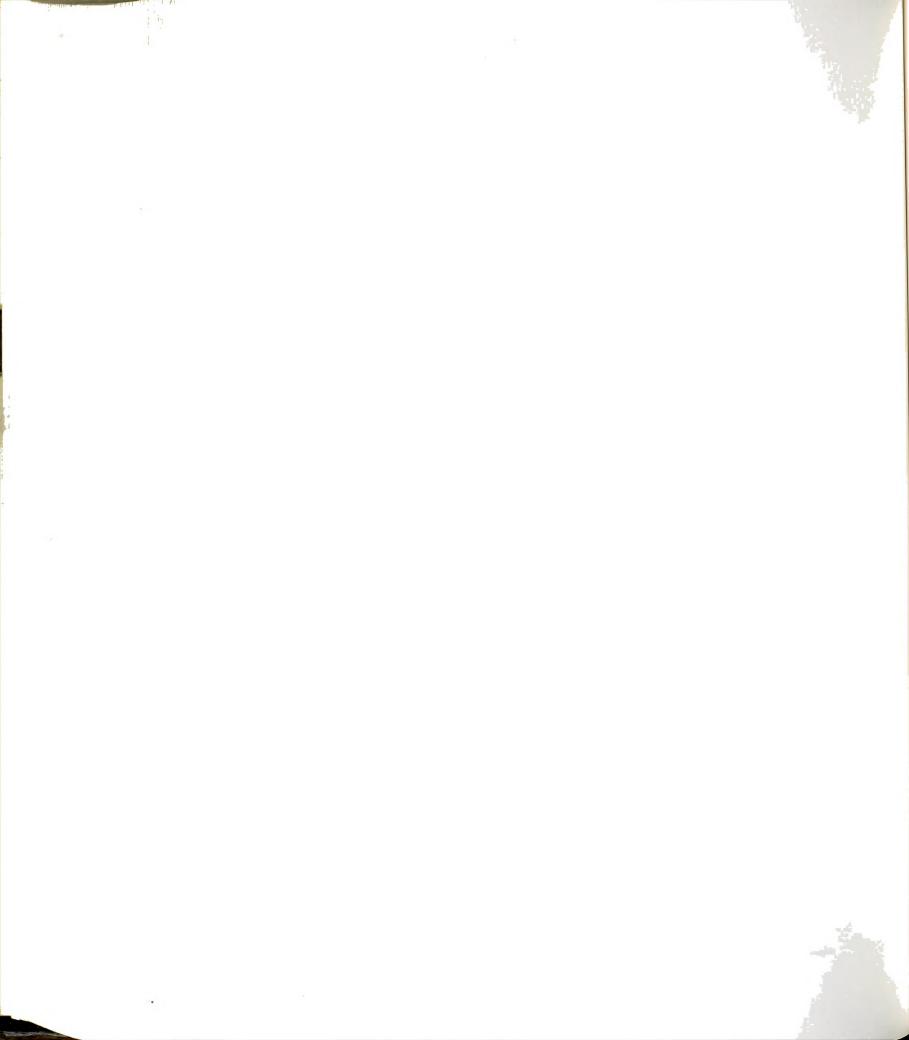
- _____ a. Rural development personnel
 _____ b. Extension agent
 _____ c. Both
 _____ d. Neither

- 13b. Which agency has more frequent contact with you?

- _____ a. Rural development personnel
 _____ b. Extension agent
 _____ c. Both
 _____ d. Neither

- 13c. Which agency has helped more, to solve your farm problem?

- _____ a. Rural development personnel
 _____ b. Extension agent
 _____ c. Both
 _____ d. Neither



13d. Which agency provides better answers to your needs?

- ☐ a. Rural development personnel
- ☐ b. Extension agent
- ☐ c. Both
- ☐ d. Neither

13e. Which agency do you prefer to visit more frequently?

- ☐ a. Rural development personnel
- ☐ b. Extension agent
- ☐ c. Both
- ☐ d. Neither

Part III. Percetion related to future of Extension Education

Please circle the best answer from the following questions. Give careful thought about your own experience and current work. Use the following directions:

SD-Strongly Disagree A-Mainly Agree but some what disagree
D-Mainly Disagree but SA-Strongly Agree but some what agree
N-Neutral

- | | |
|---|--|
| 14. Collaboration between Extension Agents, Rural development, and Farmers is very important for agricultural development | . SD D N A SA
.
.
. |
| 15. Seminars/demonstration activities organized by extension personnel from the Department of Agriculture are more beneficial than those organized by the rural development personnel from Jihad Sazandeghi | . SD D N A SA
.
.
.
.
. |
| 16. Seminars/demonstration activities organized by rural development personnel from the Department are more beneficial than those organized by the extension agent. | .SD D N A SA
.
.
. |
| 17. Collaboration between the Extension Agents and Rural Development personnel is a prerequisite to agricultural development. | .SD D N A SA
.
.
. |
| 18. Combining the two departments into one department is a prerequisite to agricultural development. | .SD D N A SA
.
. |
| 19. The extension agent from the Department of Agriculture visits me regularly. | .SD D N A SA
.
. |
| 20. The Rural Development Personnel visits me regularly. | .SD D N A SA
. |
| 21. The Extension agent is a rare fish to catch. | .SD D N A SA
. |
| 22. The Rural development personnel is a rare fish to catch. | .SD D N A SA
.
. |



23. For communication, the Agricultural Extension Agent prepares information, and resources, develops demonstration plots to better understanding. .SD D N A SA
24. For communication, the Rural Development Personnel prepares information, and resources, develops demonstration plots to better understanding. .SD D N A SA

Part IV. Perceptions Related to the Content of the Extension Message

25. The Extension Agent shares information on new technology that is suitable for the farmers of this area. . SD D N A SA
26. Rural Development Personnel shares information on new technology that is suitable for the farmers of this area. . SD D N A SA
27. The Extension Agents are in the area, and attempt to help us to find solutions to our farm problems. . SD D N A SA
28. Rural development personnel are in the area and attempt to help us to find solutions to our farm problems. . SD D N A SA
29. Extension Agents recommend new practices which are not available in our area. . SD D N A SA
30. Rural Development Personnel from Jihad recommend new practices which are not available . SD D N A SA
31. The best way that the Extension personnel use to teach-farmers is.
- a. Films and slides . SD D N A SA
 - b. Distributing Pamphlets . SD D N A SA
 - c. Posters . SD D N A SA
 - d. Demonstration plot . SD D N A SA
 - e. Seminars . SD D N A SA
 - f. Field Trips to the Extension Station. . SD D N A SA
32. The best way that the Rural Development Personnel use to teach-farmers is:
- a. Films and slides . SD D N A SA
 - b. Distributing Pamphlets . SD D N A SA
 - c. Posters . SD D N A SA
 - d. Demonstration plot . SD D N A SA
 - e. Seminars . SD D N A SA



f. Field trips to the extension station. . SD D N A SA

Part V Perceptions of participation and effectiveness

33. Have you ever been asked by the Extension Agent to participate in planning of extension activities.

☐ Yes
☐ No
☐ Not sure

34. Have you ever been asked by the Rural Development Personnel to participate in the planning of extension activities in your area?

☐ Yes
☐ No
☐ Not sure

35. If the answer to questions 39 or 40 were yes, did you find the activity useful?

☐ Yes
☐ No
☐ Not sure

36. Information you used on your farm (until now) has been provided by:

☐ Extension Agent
☐ Rural Development Personnel
☐ Others (neighbors, relatives, etc.)

Thank you for your willingness to share your opinion about the cooperation and activities of the two organizations. If you have any final comments or suggestions, I would appreciate it if you would write them in the space below.



Questionnaire For Extension Agent and Rural Development

This instrument is prepared to assess the extension agents and rural development personnel effectiveness of their agricultural extension work in the I.R. of Iran.

Part I: General Information:

A. Please write the appropriate answer on the line provided for each of the following questions.

- 1) _____ Age of the respondent years
- 2) _____ Sex (male , female)
- 3) _____ Marital status.
- 4) To which agency do you belong
 _____ a) Department of agriculture extension?
 _____ b) Jihad Sazandeghi
- 5) Your title or position _____
- 6) Area of specialization _____
- 7) Number of years of service _____
- 8) Number of farms in the area of your responsibility _____
- 9) Your highest level of education /training _____
- 10) Number of Villages you are serving _____

Part II. Area of skills.

11) In which area are you most comfortable in dealing with the farmers?

Please rank your expertise/skills using the following scale: 5 = Very comfortable 2 = Slightly uncomfortable.

4 = Comfortable 1 = Uncomfortable. 3 = Neutral

- _____ a. crop production
- _____ b. pest control
- _____ c. herbicides
- _____ d. animal husbandry
- _____ e. poultry
- _____ f. dry land farming
- _____ g. forage crops
- _____ h. farm machinery
- _____ i. soil fertilization
- _____ j. soil management
- _____ k. marketing of the farm crops
- _____ l. irrigation
- _____ m. efficient use of animal power
- _____ n. efficient use of local equipment
- _____ o. farm management
- _____ p. cooperative organization
- _____ q. bee keeping
- _____ r. veterinarian
- _____ s. land preparation
- _____ t. machinery adjustment
- _____ u. post harvest practices
- _____ v. solving non-educational problems
- _____ w. solving the farmers financial problems
- _____ x. solving the farmers equipmental needs
- _____ y. doing cooperative work
- _____ z. plot demonstrations
- _____ aa. others (please specify)

Part III. Activities and teaching methods .

12) For each of the following activities, please estimate on an average, how many extension activities completed each year.

<u>Activities</u>	<u>Average Number Completed</u>
-------------------	---------------------------------



	<u>Annually Per Office</u>
a. Individual farmer home visits	_____
b. Office visits by clients	_____
c. Group educational meetings	_____
d. On farm demonstrations	_____
e. Farm field days	_____
f. Other individual activities (please specify)	_____

13. Please indicate the importance of each of the following extension methods that are used by you. Circle the appropriate number that reflects the relative importance you place on each method.

<u>Individual method</u>	<u>Little Importance</u>			<u>Great Importance</u>	
Farm visits	1	2	3	4	5
office call	1	2	3	4	5
letters/notes	1	2	3	4	5
telephone	1	2	3	4	5
<u>Group methods</u>					
exhibits at agricultural shows	1	2	3	4	5
farmers classes	1	2	3	4	5
field demonstrations	1	2	3	4	5
field days	1	2	3	4	5
group meeting	1	2	3	4	5
tours/field trips	1	2	3	4	5
group projects	1	2	3	4	5
<u>Adaptation of the following materials and media</u>					
live specimens & samples	1	2	3	4	5
leaf & bulletins	1	2	3	4	5
pictorial/illustrated	1	2	3	4	5
television	1	2	3	4	5
News letters	1	2	3	4	5
Radio	1	2	3	4	5
Films & slides	1	2	3	4	5
video & films (cinema)	1	2	3	4	5
posters & charts	1	2	3	4	5
manuals	1	2	3	4	5
Other (please specify)	1	2	3	4	5

Area of extension covered by the agency:

14. Which of the following subject areas are covered by you.

<u>Subject areas</u>	<u>Do you cover this area?</u>	
	<u>Yes</u>	<u>No</u>
approve seed variety	_____	_____
dry land farming	_____	_____
using animal fertilizer	_____	_____
using pesticides	_____	_____
using herbicides	_____	_____
varieties of vegetables	_____	_____
varieties of fruit trees	_____	_____
management of soil conservation	_____	_____
primary tillage equipment	_____	_____
planting equipment	_____	_____
secondary equipment	_____	_____
harvesting equipment	_____	_____
land preparation	_____	_____
animal breeding	_____	_____
poultry breeding	_____	_____

institutional credit	_____	_____
marketing	_____	_____
post harvest practices	_____	_____
packaging and transportation	_____	_____
cooperative extension	_____	_____
forage planning	_____	_____
bee keeping	_____	_____
handcrafts	_____	_____
irrigation	_____	_____
land leveling	_____	_____
farm management	_____	_____
soil fertility	_____	_____
others (please specify)	_____	_____

Part II. Perceptions Related to Organization Linkages.

Please read each of the following statements and mark the one that best expresses your opinion for each of the following:

SD= Strongly disagree D=Mainly Disagree but somewhat agree
 N= Neutral A=Mainly Agree but somewhat disagree
 SA=Strongly agree.

	SD	D	N	A	SA
15. Collaboration between agricultural Extension, and the Department of Rural Development is vital.	_____	_____	_____	_____	_____
16. Joining of the department of Rural Development with the extension department is pre requisite for agricultural development.	_____	_____	_____	_____	_____
17. There is a high degree of cooperation between extension services and rural development personnel in Jihad?	_____	_____	_____	_____	_____
18. Extension agent knows to develop demonstration plot.	_____	_____	_____	_____	_____
19. Rural development personnel Know to develop demonstration plot.	_____	_____	_____	_____	_____

Part III. Perceptions related to Extension activities

Please circle a number from 0 through 4 on the scale to the right of each item. 0 = None 1 = Little 2 = Some 3 = Much 4 = Very Much

20. Do you organize seminars at which researcher present and demonstrate to the farmers their latest findings?	0 1 2 3 4
21. Do you develop written plans for each seminar or other training program?	0 1 2 3 4
22. Are you informed about the agricultural research in the state?	0 1 2 3 4
23. Do you Prepare demonstration plot for the farmers?	0 1 2 3 4

24. Do you take farmers on some field trips or to visit research stations? 0 1 2 3 4
25. Do you know about the number of research stations in the state? 0 1 2 3 4
26. To what extent do your extension activities educate the farmers? 0 1 2 3 4
27. Did you have extension classes for farmers during 1989? 0 1 2 3 4

Part IV Knowledge and Training about Mechanization & innovation:

To what extent do you need more knowledge and/or training in the following subject? G1 =None G2 =little G3 = Some G4 = Much G5 = Very much

	G1	G2	G3	G4	G5
28. Tractor service	_____	_____	_____	_____	_____
29. Tractor operation	_____	_____	_____	_____	_____
30. Primary tillage AND Secondary tillage	_____	_____	_____	_____	_____
31. Secondary tillage	_____	_____	_____	_____	_____
32. No tilled farming	_____	_____	_____	_____	_____
33. Row crop planter	_____	_____	_____	_____	_____
34. Field sprayers	_____	_____	_____	_____	_____
35. Dry land farming	_____	_____	_____	_____	_____
36. Harvesting equipment	_____	_____	_____	_____	_____
37. Post harvesting	_____	_____	_____	_____	_____
38. Irrigation	_____	_____	_____	_____	_____
39. Pest control	_____	_____	_____	_____	_____
40. Soil conservation	_____	_____	_____	_____	_____
41. Animal production	_____	_____	_____	_____	_____
42. Marketing	_____	_____	_____	_____	_____
43. Others (specify)	_____	_____	_____	_____	_____

44. (Please rank the priority that you give to each type of extension activity. Give rank in percentage form.)

	<u>rank order</u>	<u>%allocation</u>
Individual	_____	_____
Group.	_____	_____
Mass media activities	_____	_____

45. Do you visit the farm which you are responsible for better production?

- _____ a. Once every month _____ d. Once in 8-12 months
- _____ b. Once in 2-3 months _____ e. Once in over 12 months
- _____ c. Once in 4-8 months

Part V Linkages With Other Organizations:

46. How would you rate your working relationships with the following agencies? Please circle your answers based on the following scale:

0 = no Linkages 1 = little linkages
2 = good linkages 3 = excellent linkages

- | | | | | |
|-------------------------------------|---|---|---|---|
| a. Agricultural college/ university | 0 | 1 | 2 | 3 |
| b. Agricultural research station | 0 | 1 | 2 | 3 |
| c. Agricultural bank | 0 | 1 | 2 | 3 |
| d. Credit institutions | 0 | 1 | 2 | 3 |
| e. Rural development station | 0 | 1 | 2 | 3 |



f. Farm machinery organization/dealership	0	1	2	3
g. Fertilizer agencies	0	1	2	3
h. Pesticide research center	0	1	2	3
i. Animal research center	0	1	2	3
j. Soil research laboratory	0	1	2	3
k. Forestry research station	0	1	2	3
l. Dry land farming research station	0	1	2	3
m. Cooperative organization	0	1	2	3
n. Others (Please Specify)	0	1	2	3

47. How frequently do you have linkage with the university and college of agriculture?

- ☐ a. once every month
- ☐ b. once every 6 month
- ☐ c. once a year
- ☐ d. none

48) How often do you communicate with the research/experiment station?

- ☐ a. once every three month
- ☐ b. once every six month
- ☐ c. once a year
- ☐ d. none

Part VI. Perceptions of Effectiveness:

It seems that both the Extension Agents and the Rural Development Personnel give services to the farmers. Please give your frank opinion to the following questions:

49. Which agency (Extension or Rural Development) shares more updated information and new technologies with the farmers?

- a. Rural Development Personnel
- b. Extension Agents
- c. Both
- d. Neither

50. Which agency (Extension or Rural Development) develops more effective demonstration plots?

- a. Rural Development Personnel
- b. Extension Agents
- c. Both
- d. Neither

51. Which agency is able to provide information which the farmers are able to understand and which is useful to them?

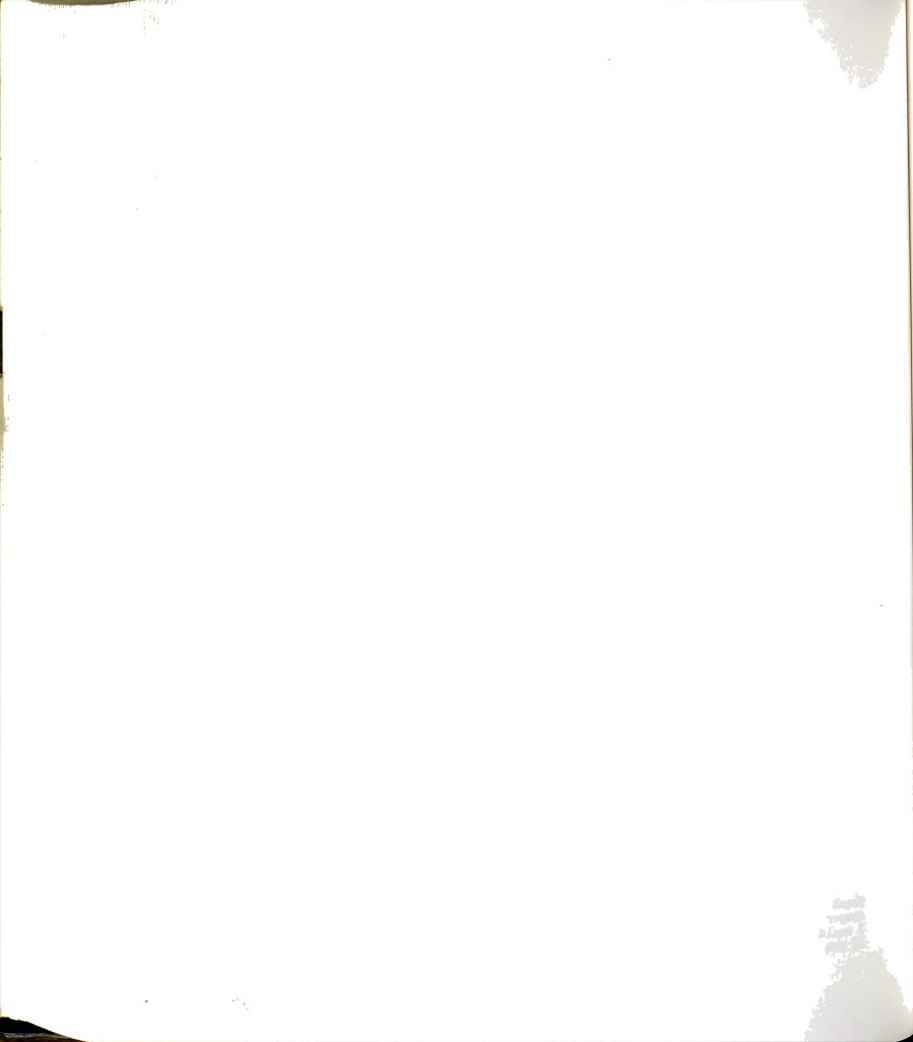
- a. Rural Development Personnel
- b. Extension Agents
- c. Both
- d. Neither

52. Which agency develops more training programs for the development of the agents personal skills?

- a. Rural Development Personnel
- b. Extension Agents
- c. Both
- d. Neither

53. What suggestions would you offer in order to strengthen the extension services for the farmers in this region? Please list as many as you think are important.

Thank you for your willingness to share your opinion about the cooperation and activities of the two agricultural extension services. I would appreciate it, if you have any final comments or suggestions, if you would write them in the space below.



پرسشنامه عمومی مردمان کشاورزی اداره ترویج و جهاد سازندگی

این پرسشنامه ضرایب شده و برای بررسی و مقایسه وضعیت کشاورزی مریخ کشاورزان
اداره ترویج کشاورزی و مریخ جهاد سازندگی در استان خراسان

نست اول: اطلاعات عمومی

لطفاً کاملترین پاسخهای خود را در جملات زیر بنویسید و در ارتباط با هر یک از سؤالات
زیر منقسمه درج کنید.

۱- سن جواب دهید سال

۲- وضعیت جنسی (مرد زن)

۳- وضعیت تاهل متاهل مجرد

۴- محل کار

_____ الف. جهاد سازندگی

_____ ب. اداره ترویج

_____ و. بستان سازندگی

۶- شخص بارشته چنانچه می باشد

۷- میزان سابقه کار با خدایت سال

۸- تعداد مزرعه که شایستگی آن به شما است

۹- شرکت با رسته خدمات با تعصبات

۱۰- تعداد ویسهای که چنانچه می باشد در آنجا فعالیت می کنید

۱۱- در گذشته از سازمان زیرساختی استفاده می کردید یا کشاورزان همکار می کنید. لطفاً نتیجه
به درجه بندی پیشنهادی در مقابل درج کنید. (میزان را بنویسید)

۵. خیلی راحت	درجه بندی
۴. راحت	۵. بسیار
۳. متوسط	درادن به
۲. تقریباً نامناسب	بیشتر
۱. نامناسب (راحت نیست)	

درجه بندی

الف. معمولاً ترواجی ملاک

ب. دفع آفات

پ. طریقه کشت

ت. دادرار

ث. مردار

ج. زیادت درم

ح. زیادت مملو

خ. مانع آلا گانت

د. حاصلخیز خاک

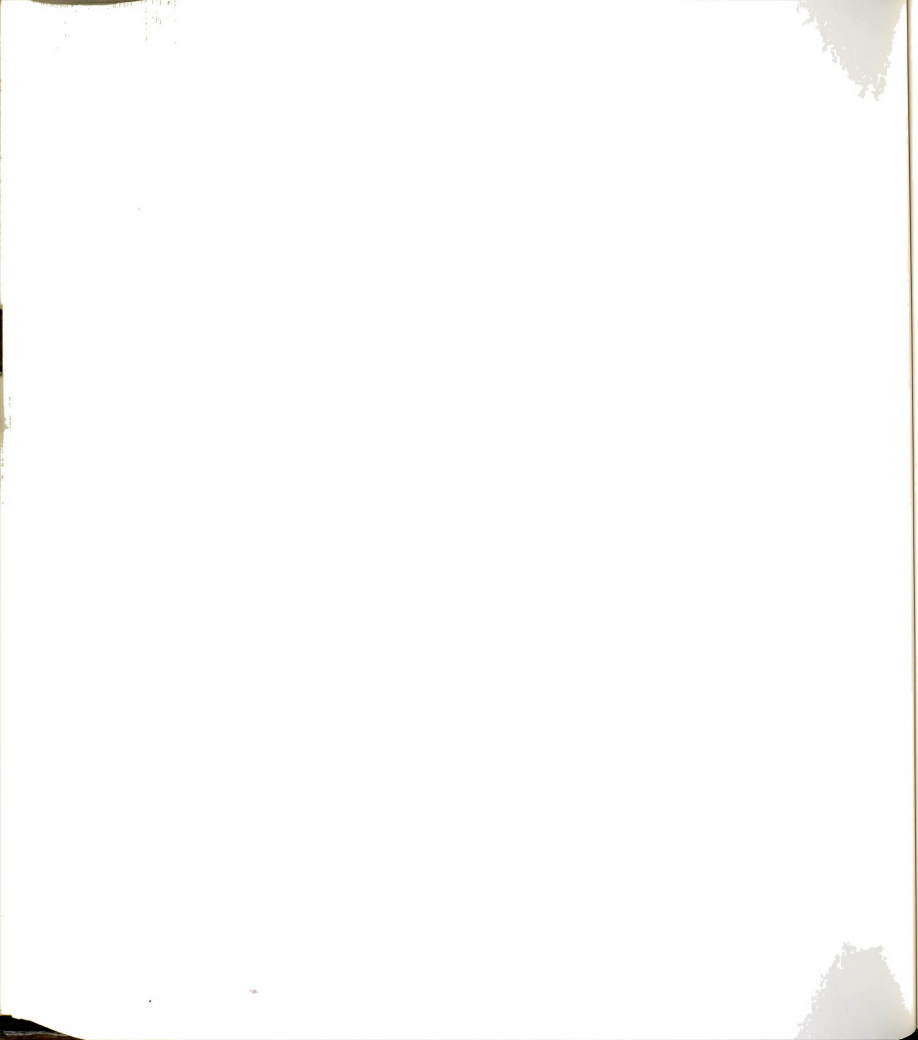
ذ. خاک شناسی

ر. بازارهای بسته شدن معمولاً کشاورزان

ز. آبشار

س. استفاده از نیروی حیوانی باراندان بهتر

ش. استفاده از ماشین کش باراندان بهتر



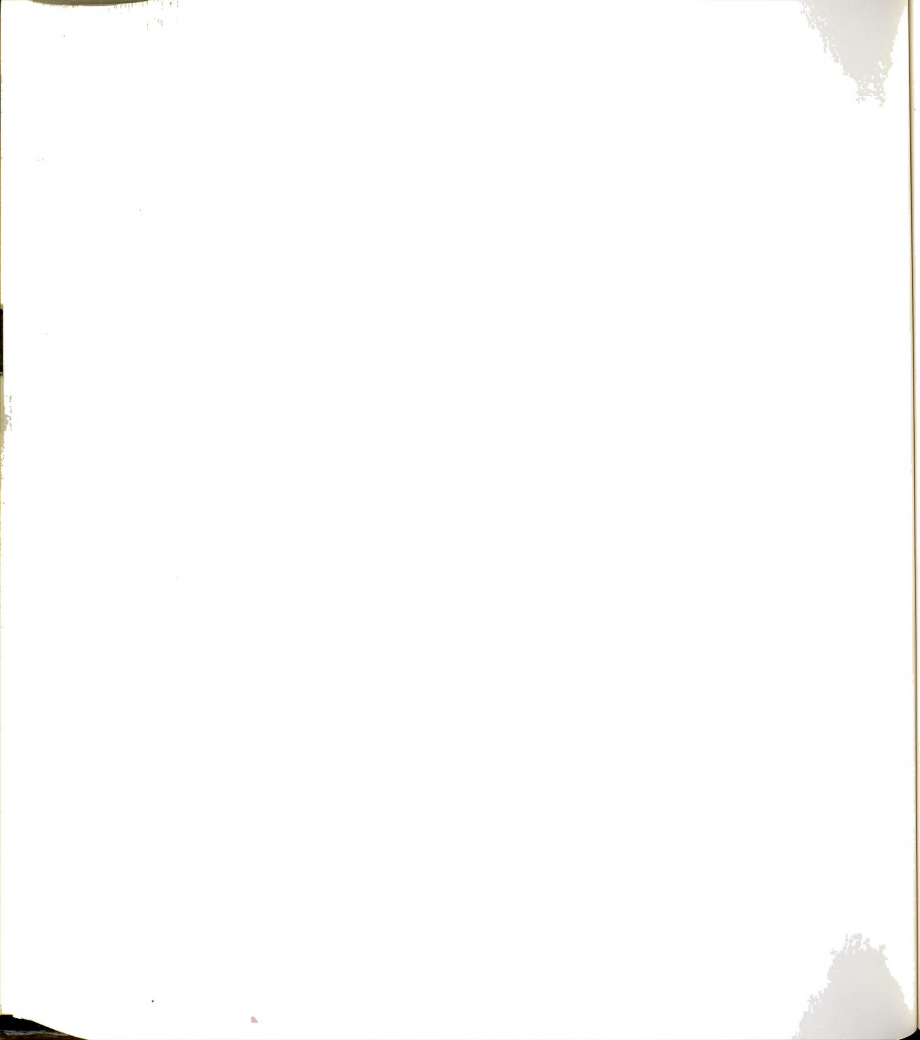
_____	و - ایجاد میزان آزمایشی
_____	ن - انجام کارهای تعاضی
_____	پ - رفع نیازهای کشاورزان
_____	ل - رفع مسائل مادر کشاورزان
_____	ک - رفع مسائل اداون کشاورزان
_____	ج - تسهیلات مائین های کشاورزان
_____	د - مشایط آماده کردن زمین
_____	ز - راهبرشی
_____	ط - زسوداری
_____	س - سازماندهی و تعاضی ها
_____	ه - مدیریت

۱۲ - لطفاً برآورد کنید برای هر یک از مسائل زیر به چه ترتیب مشایط چه تعداد از فعالیتها را
توجهی شکل و با اجرا گذاشته اند

تعداد مشایط توجهی انجام شده در سال	فعالیت
_____	ملاقات های انفرادی در منزل مادر مزده کشاورزان
_____	ملاقات در محل اداره مادر فتر
_____	ملاقاتها در گروهی
_____	اجرای مزارع ناهشی و آموزشی
_____	اجرای ریز کشاورزان با مزده
_____	مشایط دیگر (لطفاً مادر آوری نامیده)

۱۳ - لطفاً با نتیجه به سهم بودن یا نرسیدن به برنامه ها توجهی زیر که جنبه مالی
در رابطه با آمیزش کشاورزان مورد استفاده قرار می دهد با علامت دایره ای مشخص
کنید .

روسی انفرادی	خوبی سهم نیست	با خوبی سهم است
بازدید از مزده	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
در باره کشاورزان در فتر کار	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
اخلال کشاورزان توسط نامدها	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
تلفن	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
روزی های گروهی	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
اجرای ناهشیهای کشاورزان	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
کلاسهای باز آوری	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
اجرای مزارع ناهشی	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
اجرای ریز کشاورزان	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
سیارو ملاقاتها در گروهی	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
بازدید های گروهی	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
سازمان پروژه های گروهی	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰
سازمان دیگر (لطفاً بیان کنید)	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰	۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰



اسناد مورد نیاز برای تهیه سس پرس در

.....	صح آیزر سیمهای وانسی
•	۱	۲	۲	۱	استفاده از حشرات نروسی
•	۱	۲	۲	۱	استفاده از پسرمان نروسی
•	۱	۲	۲	۱	استفاده از شمشیر
•	۱	۲	۲	۱	مدرسه غبار
•	۱	۲	۲	۱	استفاده از راد بر
•	۱	۲	۲	۱	نمایش فیلم و اسلاید
•	۱	۲	۲	۱	نمایش فیلم ویدئویی
•	۱	۲	۲	۱	استفاده از جدا اول
•	۱	۲	۲	۱	استفاده از کتابچه ها را هنر

سائل دیگر (لطفاً یاد آور نشاند)

۱۰۴- غالباً هر چند وقت با مراکز تحقیقات و آموزش با مزار آزمایش تماس دارید

الف. هر سه ماه یکبار

ب. هر شش ماه یکبار

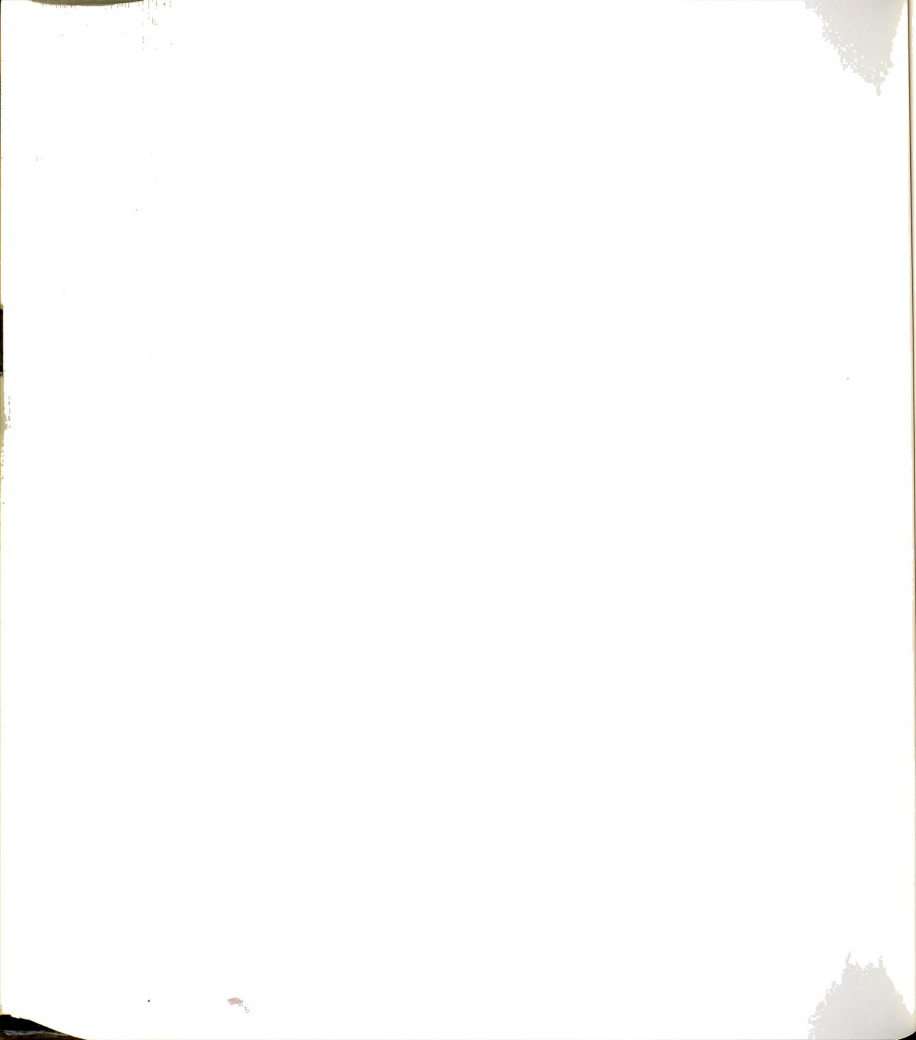
پ. هر سال یکبار

ت. هیچ تماس ندارم

موضوعات تهیهی که توسط مروج انجام می گیرد

۱۰۵- کدام یک از موضوعات زیر بیشتر شما آموخته شده است

موضوع	آشنایی با موضوع را آموخته ام	پیش
بندی اصلاح شده و تاشیده شده	_____	_____
زراعت دریم	_____	_____
استفاده از کید حیوانی	_____	_____
استفاده از سیم در نوع آفات سانی	_____	_____
استفاده از تاشیده شده	_____	_____
وابسته های حد در سبزی	_____	_____
وابسته ها حد در میوه	_____	_____
مدیریت و حفاظت خاک	_____	_____
مانع های آماده کردن زمین	_____	_____
مانع های گانت	_____	_____
مانع های رانت و کید باغچه ها	_____	_____
مانع های برداشت	_____	_____
نمونه آماده کردن زمین	_____	_____
اصلاح نژاد دامها	_____	_____
اصلاح نژاد ضعیف	_____	_____
اشارات باغچه ها	_____	_____
بازارهای	_____	_____
نمونه ارن بعد از برداشت	_____	_____
سسته بندی و حمل نقل	_____	_____
نمایش ها و ریختن	_____	_____



_____	_____	طوبه دار
_____	_____	زنبور دار
_____	_____	منابع ریستانی
_____	_____	آبار
_____	_____	شطح زین
_____	_____	نهریت مزونه
_____	_____	حاشیه‌های حاک
_____	_____	ساختن در یکر لفظاً هر تعداد هستند با آبار
_____	_____	نابند

نکته ۱: بهر بیس و دردت سائل شکلاتی .

لغظاً "نکته زیر را مطالعه کنید و با توجه به نظریه شخصی شما و تجربه‌ها که دارید بهر بیس حباب را با توجه به ارتفاع درجه بندی که بیس بیس شده ملاک گذارن کنید .

SD	خیلی مخالف
D	در واقع مخالف اما بعضی موارد میانی
N	حالت متوسط
A	در واقع میانی اما بعضی موارد مخالف
SA	خیلی موافق

۱۶ - هم آهنگی بین اداره توزیع و بخش کشاورزی جهاد سازندگی از

SA	A	N	D	SD	سازیم است
SA	A	N	D	SD	۱۷ - ادامه نمودن سازمان جهاد و اداره کشاورزی
					از سائل اولیه بهر بیس کشاورزی است

۱۸ - هم آهنگی خیلی زیاد بین اداره توزیع و بخش کشاورزی جهاد سازندگی، و بسید

SA	A	N	D	SD	دارند
SA	A	N	D	SD	۱۹ - ممیلاً "مربوب کشاورزی اداره توزیع جهت آموزش گزینان آبیضی بهر بیس بهر بیس
					می آیند

۲۰ - ممیلاً "مربوب کشاورزی جهاد سازندگی جهت آموزش گزینان آبیضی بهر بیس بهر بیس

SA	A	N	D	SD	می آیند
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نکته دوم : بهر بیس و دردت اثرات کار آبیضی .

لغظاً "بهر بیس حباب سائل تیره را با توجه به درجه بندی که پیش بیس شده، مشخص نماید .

0	هیچ
1	خیلی کم
2	کم
3	در حد متوسط
4	در حد عالی و خوب

۲۱ - توجه حدی در دستیارها که تشکیل مید میسلف آخری دست آورد همسان

4	3	2	1	0	خوب را در اختیار کشاورزان قرار می دهند
---	---	---	---	---	--

۲۲ - درجه حدی شاد و رنگ تشکیل سنار : با در یکر برآورد آموزش برنامه ریزی

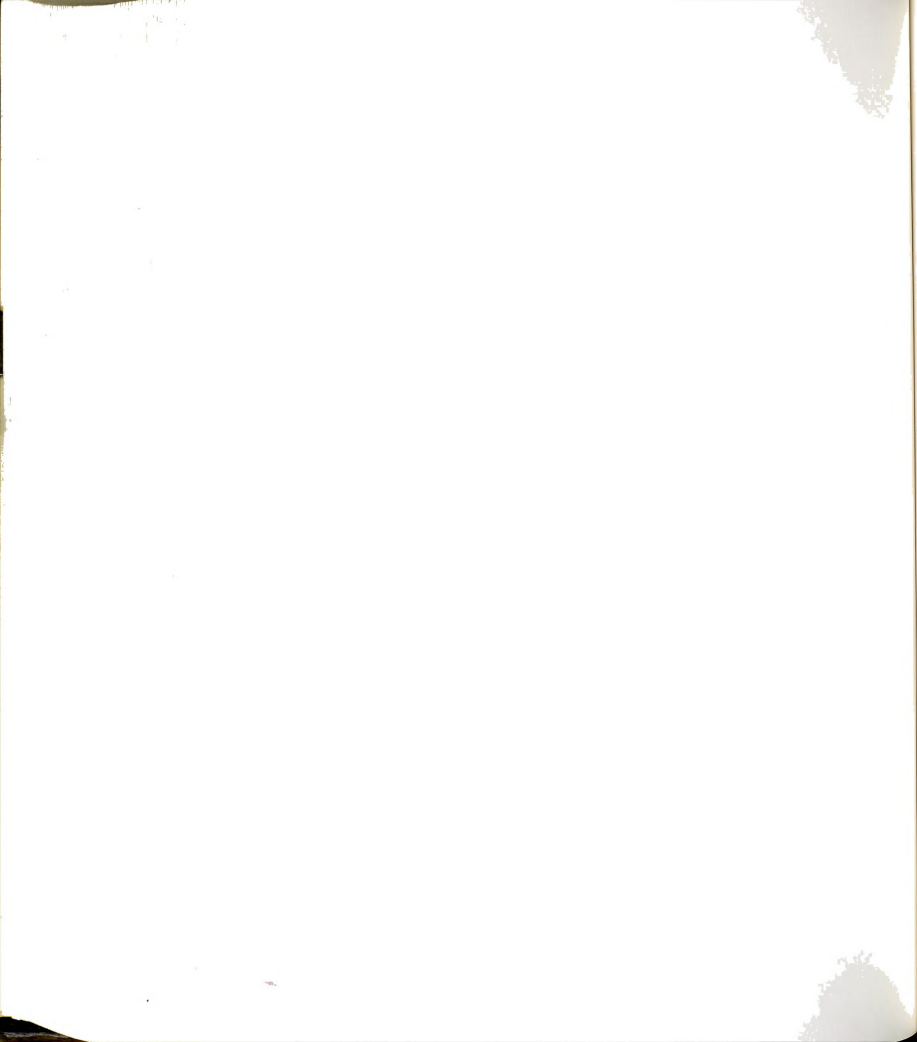
4	3	2	1	0	بهترین گش انجام مید مید
---	---	---	---	---	-------------------------

۲۳ - آبا سائل از کار تحقیق کشاورزی در سطح استان - درجه

4	3	2	1	0	
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۲۴ - درجه حدی شاد و رنگ کشاورزی از گزینان آبیضی که ادامه میسلف استفاده

4	3	2	1	0	می کنند
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- ۲۵- درجه حدی نشانه‌های از راجعت باز به مرکز تحقیقات می‌رسد
 ۲ ۱ ۰ ۲ ۳ ۴
 ۲۶- اختلاص از تعدد از مرکز تحقیقات در راستای غراس - راه ارید
 ۲ ۱ ۰ ۲ ۳ ۴
 ۲۷- درجه حدی بر بندها - آمیزش منسل نشانه‌های از آمیزش می‌رسد
 ۲ ۱ ۰ ۲ ۳ ۴
 ۲۸- آباء و اجداد ۱۶ کلاس باز آمیزش برای گشتاها
 ۲ ۱ ۰ ۲ ۳ ۴

نمونه چهارم: یعنی من و در آن مسائل باز آمیزش در رابطه گشتاها می‌گشتاها
 و نیز آفرین های حدی گشتاها در وجه حدی باز به اختلاص و آمیزشها لازم در رابطه
 با محصولات - بل در آید با جوده به درجه حدی در دست - چپ کا نه بیشتر جواب داد حاصل
 منابع علامت گذارن می‌گردد .

۱۶- سریش و نگه‌دارن تراکتور	همچ	کم	مات	زیاد	خیلی زیاد
۲۰- آب و هوا تراکتور					
۲۱- آب و هوا آماره گردن زن					
۲۲- آب و هوا تراکتور					
۲۳- آب و هوا تراکتور					
۲۴- آب و هوا تراکتور					
۲۵- آب و هوا تراکتور					
۲۶- آب و هوا تراکتور					
۲۷- آب و هوا تراکتور					
۲۸- آب و هوا تراکتور					
۲۹- آب و هوا تراکتور					
۳۰- حفاظت و نگه‌دارن خاکها					
۳۱- آب و هوا تراکتور					
۳۲- آب و هوا تراکتور					
۳۳- آب و هوا تراکتور					
۳۴- آب و هوا تراکتور					
۳۵- آب و هوا تراکتور					
۳۶- آب و هوا تراکتور					
۳۷- آب و هوا تراکتور					
۳۸- آب و هوا تراکتور					
۳۹- آب و هوا تراکتور					
۴۰- آب و هوا تراکتور					
۴۱- آب و هوا تراکتور					
۴۲- آب و هوا تراکتور					
۴۳- آب و هوا تراکتور					

۱۶- آب و هوا تراکتور

۱۷- آب و هوا تراکتور

۱۸- آب و هوا تراکتور

آمیزش افراد	درجه حدی	درصد و نسبت که آن اختصاص می‌دهند
آمیزش های گروهی		
آمیزش از طریق ارتباط جمعی		

۱۹- آب و هوا تراکتور

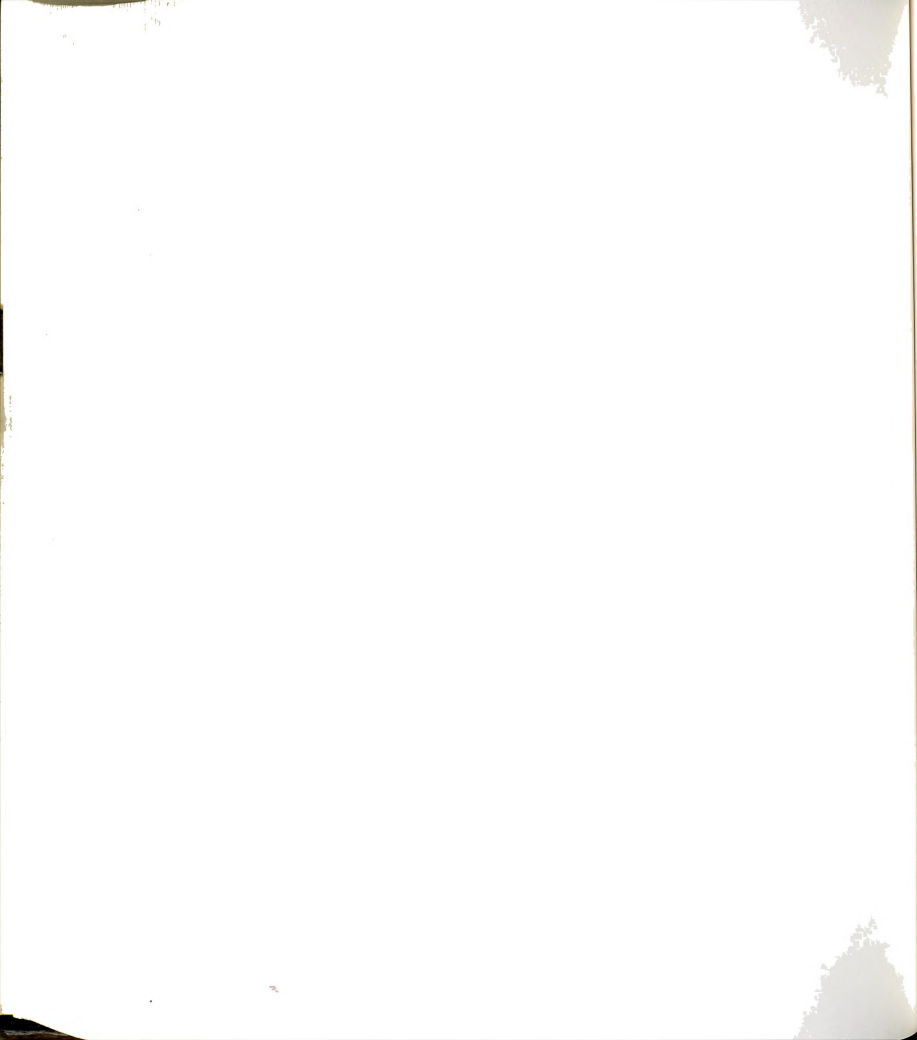
۲۰- آب و هوا تراکتور

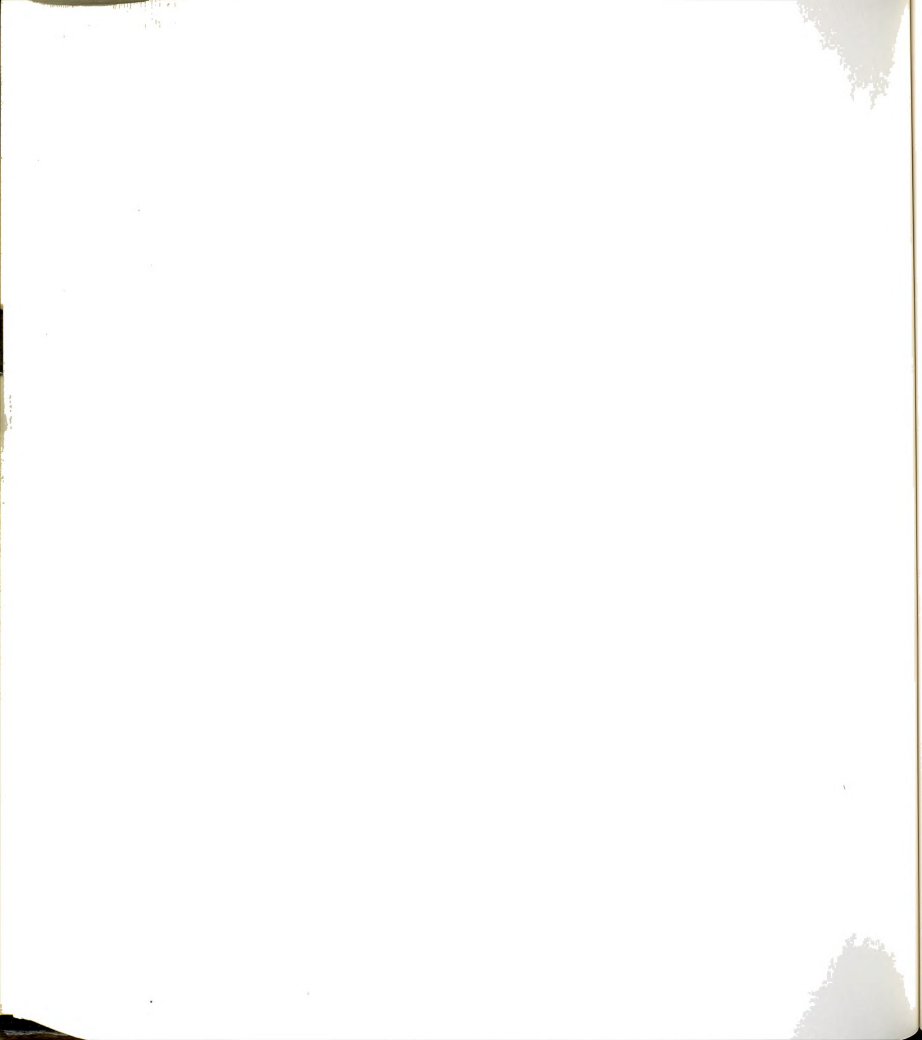
۲۱- آب و هوا تراکتور

۲۲- آب و هوا تراکتور

۲۳- آب و هوا تراکتور

۲۴- آب و هوا تراکتور





۵۰- کدام سازمان (اداره ترویج یا جهاد سازندگی)
گوشه بازاریابی و آمیزشی بعد از امر آجیز کشاورزان می تواند پیس پیس می کنند

الف - مروج جهاد سازندگی

ب - مروج اداره ترویج

پ - هر دو

ت - هیچ کدام

۵۱- کدام سازمان (اداره ترویج یا جهاد سازندگی) بهترین نیاند اطلاعاتی که
کشاورزان آموختن کنند و می تواند استفاده قرار دهند و اختیار کشاورزان فراهم می کند .

الف - مروج جهاد سازندگی

ب - مروج اداره ترویج

پ - هر دو

ت - هیچ کدام

۵۲- کدام سازمان (اداره ترویج یا جهاد سازندگی) بیشتر کارهای بازاریابی برای
مروجین خود تشکیل می دهند .

الف - جهاد سازندگی

ب - اداره ترویج

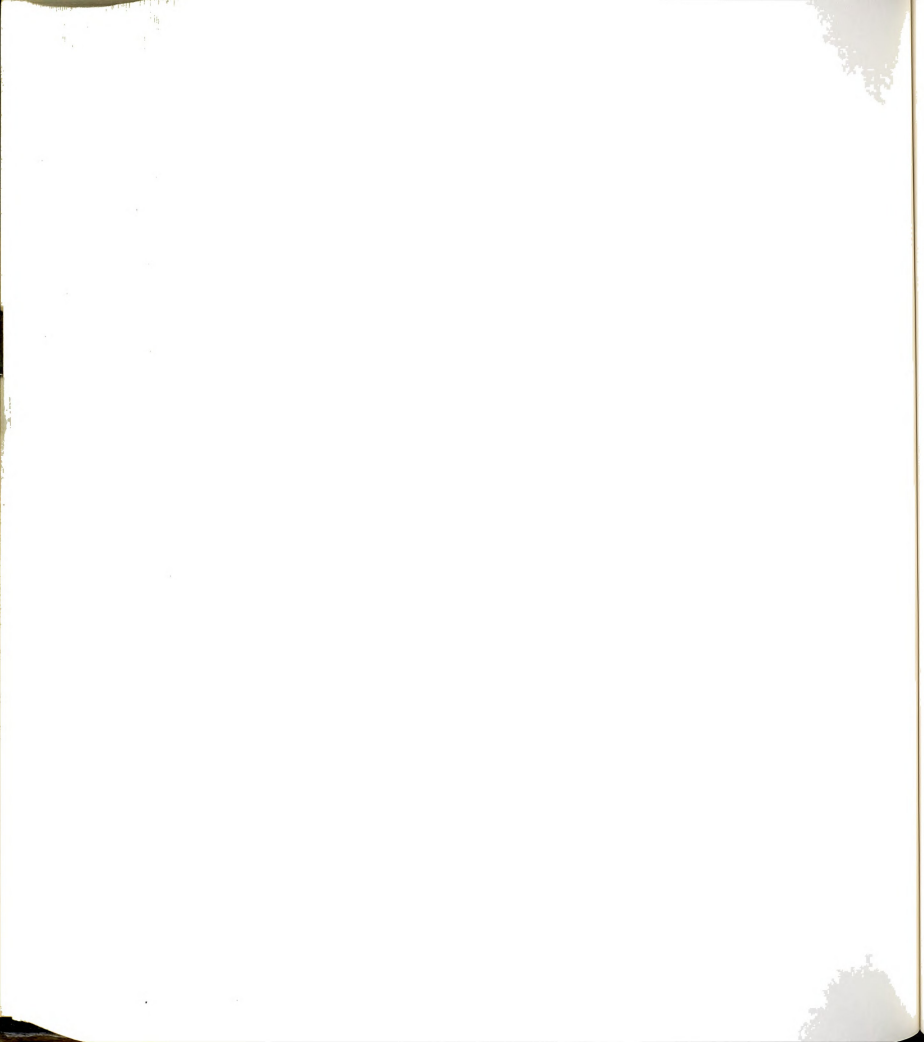
پ - هر دو

ت - هیچ کدام

۵۳- چه پیشنهاد برای بهترین کار کشاورزان که با پیس توسط این دو سازمان
انجام گیرد دارند .

لطفاً با توجه به اولویت در پشت صفحه با منته جداگانه بیان نمایید

در خانه از همکاران صمیمانه شما شناسایی کنید و با هم اگر امکان نظر خاص دارند
بیان نمایند و نهایتاً شمارا از خداوند متعال خواستارم . پت



سده نهم

برداشتند و میباید به بیان و تدقیق

این پروتستانه طراحانی شده برافه از برای نظرات مدیران و مسئولین اداره ترویج
کتابهای ترویجی، تدوین کتابهای ترویجی، سازماندهی و پرداختن به خواسته سازمان
از عرصه‌ها که برای بهترین کتابهای ترویجی، سازماندهی و پرداختن به خواسته سازمان
مجاز داشته شد.

تست اول: (۱۰ نمره)

لغز ۱: آخرین و بهترین جیب را در مصلحتی تعیین شده در ارشاد با استفاده از زیر

مربوط دارید.

۱- به جهت سازمانی

۲- به جهت عالی و عالی که تکمیل نموده اند

۳- به جهت سال در این به جهت خدمت نموده

۴- به جهت سال در جهت مربوط به ترویج کتابهای ترویجی و کتابهای ترویجی

۵- در کتاب سازمان کتابهای ترویجی

الف () در اداره ترویج کتابهای ترویجی

ب () در کتابهای ترویجی

۶- در کتابهای ترویجی که با کتابهای ترویجی و کتابهای ترویجی

۷- کتابهای ترویجی که در کتابهای ترویجی و کتابهای ترویجی

فلسفه ()

() کتابهای ترویجی که با کتابهای ترویجی و کتابهای ترویجی

الف ()

ب ()

ب ()

۸- تعداد کتابهای ترویجی که در کتابهای ترویجی (۱۳۶۷) توسط سازمان
تکمیل کرده است :

آزمون و کتابهای ترویجی

تعداد اتمام شده

کتابهای ترویجی که در کتابهای ترویجی

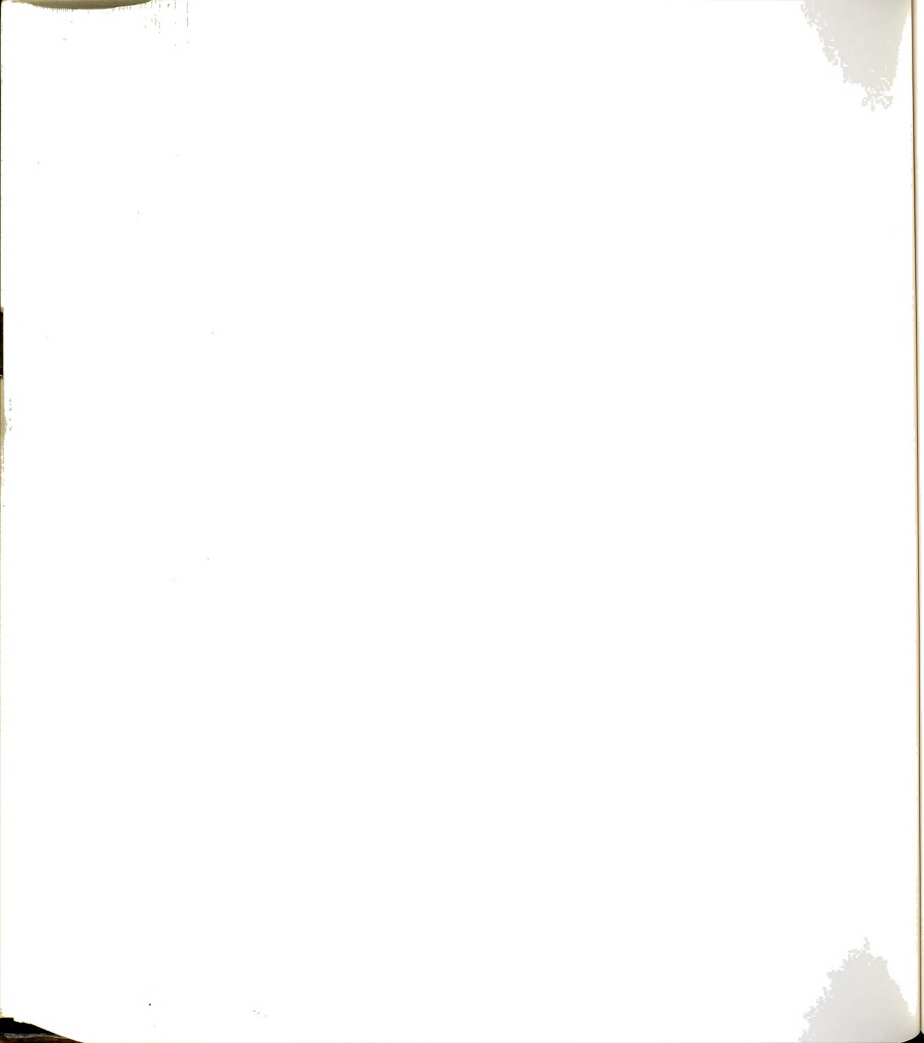
آخری در کتابهای ترویجی

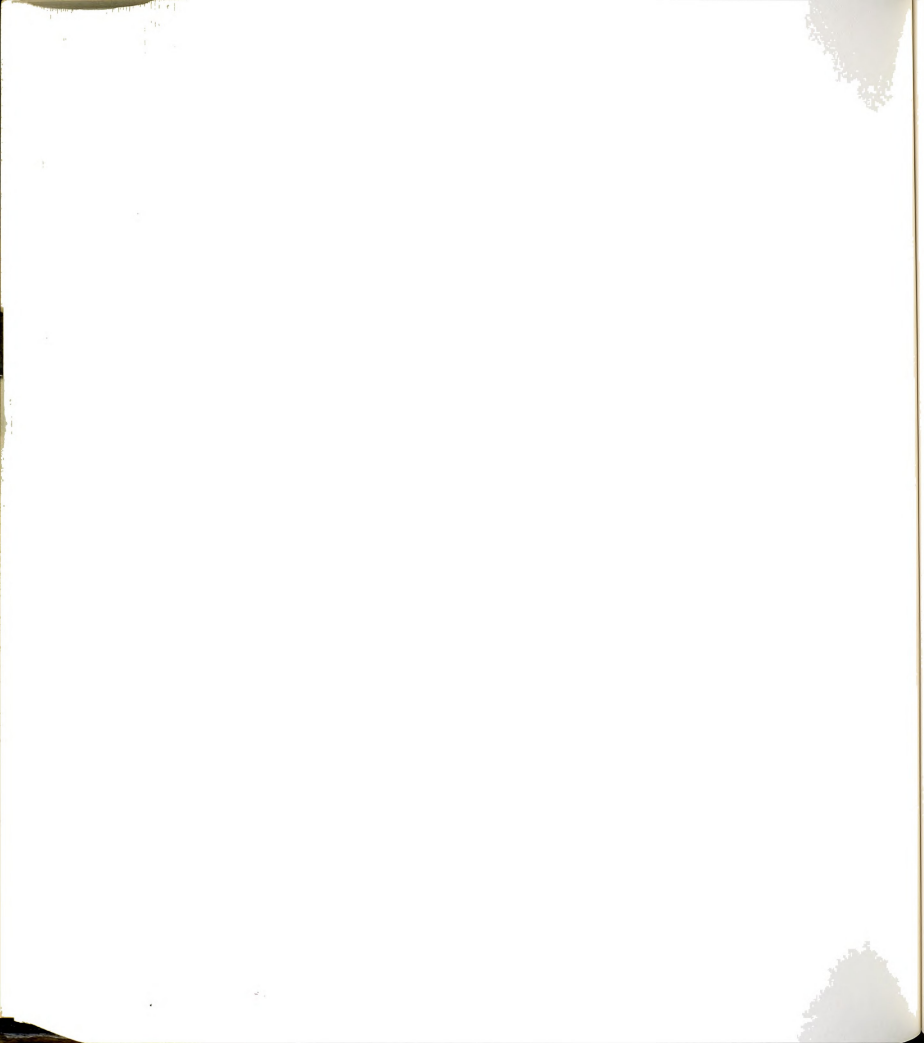
آخری در کتابهای ترویجی که در کتابهای ترویجی

آخری در کتابهای ترویجی

آخری در کتابهای ترویجی که در کتابهای ترویجی

کتابهای ترویجی (کتابهای ترویجی)





۱- سرویس دادن به گشایوزان در مرد :

لطف شخصی کنید گروه با گروه ها تو که سازبان شایسته ترست به آجیزش خدمت کردن آنها اقدام می نماید همچنین با توجه به نمره گذاری نسبت به حجم بودن و نمره هم بودن آنها را مرتب کنند تا گشایوزی و همچنین در صد خدمات که برای گروه با گروه ها داده میشود مشخص کنید .

درصد خدمت	خوبی مهم نیست	تا	خوبی مهم است
	۱	۲	۳
گشایوزانی که دارای زمینهای بهتر هستند .	—	—	—
گشایوزانی که دارای زمینهای کوچک هستند .	—	—	—
رستاقهایی که اصلاً زمین گشایوزی ندارند .	—	—	—
گشایوزانی که محصولات نداشتی مثل چغندر رقت ، ذرت ، انجیر ، کاشیف میکنند .	—	—	—
گشایوزانی که محصولات زراعتی طوطی ای گشت میکنند مثل ذرت ، طوطی ای پیونده کاری ندارند .	—	—	—
گشایوزانی که محصولات زراعتی مثل قلات گشت میکنند .	—	—	—
گشایوزانی که محصولات زراعتی مثل صیفی جات پیسری کاری دارند .	—	—	—
گشایوزانی که دارای باغات میوه هستند .	—	—	—
گشایوزانی که زراعت آبی دارند .	—	—	—
گشایوزانی که دام کاری دارند .	—	—	—
مسائل دیگر . لطفاً نام ببرید .	—	—	—

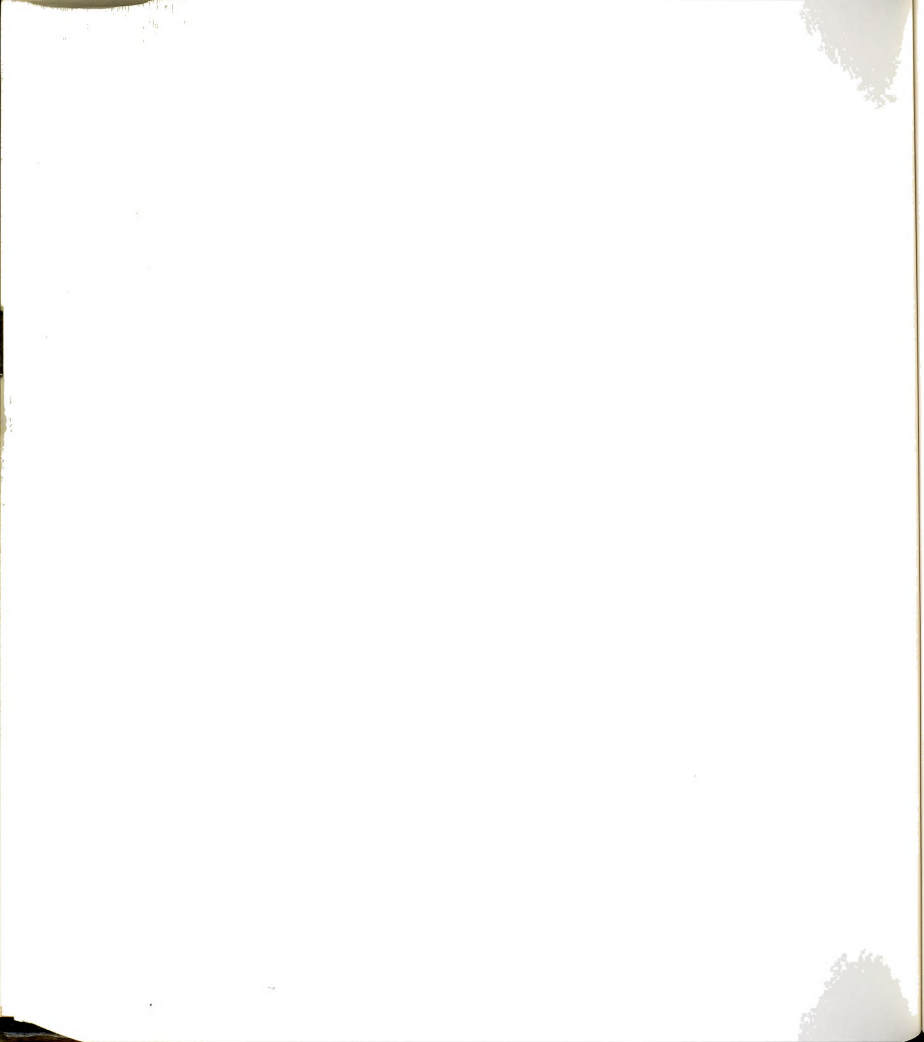
نکست سوم . انتقادات سازبان و اداره :

با توجه به نظرات جناب عالی چند درصد از کارمندان سازبان شما در رابطه با کارهای ذیل صرف میشود .

۱- کارهای برتانه و رمزی و کارهای خدماتی : شامل

تمهقات در رابطه با نیازها ، سرتا به رمزی ،
مزارع ، آجیزش بین خدمت و زمینهای کارهای
انجام دهنده و در سرتا به حساب .

درصد زمان مصرفی



۱۲- کارهای آمیزش : شامل :

۱- اهراس نمودن - بنامه های آمیزش از قبیل انتقال
الایات به گنّه نیزان ، مازنه به از مزارع ، اهراس
گوشه ها ، شایتر و آردایش سیمپاره ، و شس و ریز
گشا ورزه و ده پاره ، شامل محیط به آمیزش

۱۳- کارهای غیرآردیش : شامل کارهایی که ارتباط آمیزش ندارند

شامل جمع آرد ، آماره جمع آرد ، اطلاعات هدایتنا
رغم اختلافات ، مثل ۴ و ۵ پرسائل در پیش .

۱۴- لطفاً با توجه به مهم بودن روشهای آمیزش ، دلیل که مابین محیط مروج گشا ورزه -
سازبان ششاه اهراس در پدیده با علامت گذاری دایره ای روی شماره مورد نظریه سؤال مسا
پاسخ گویند .

به اجرا گذاشتن با استفاده نمودن از وسایل و ابزار کمی و معی

پوستهای ترویجی	ششاه مهم نیست	ششاه مهم است	ششاه مهم است
۱	۲	۳	۴
ششاه مهم نیست	۱	۲	۳
رویتنا سه	۱	۲	۳
شرکت در رساندن ۳ مای گشا ورزه و تشکیل غرنه ها	۱	۲	۳
فرستادن اخبار و اطلاعات توسط نامه	۱	۲	۳
راد پو	۱	۲	۳
ششاه مهم	۱	۲	۳
مسائل دیگر (لطفاً یادآوری نشاند)	۱	۲	۳

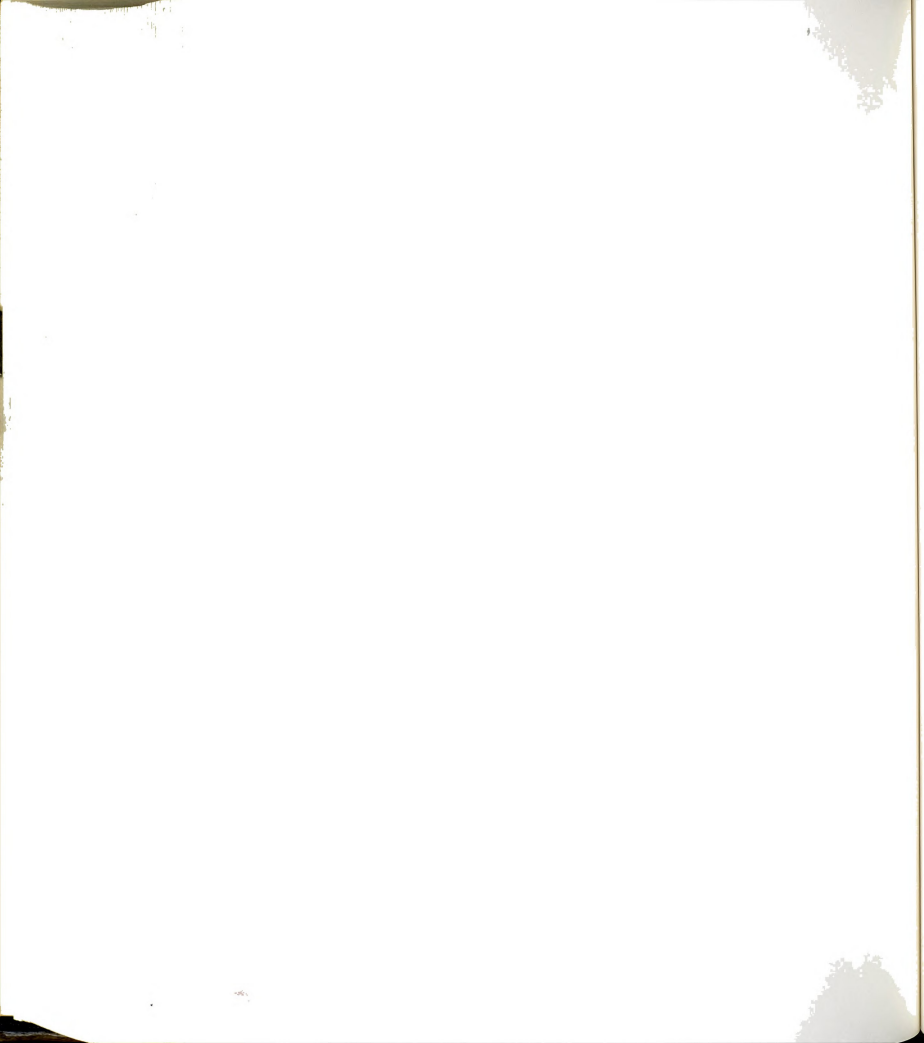
روشهای انفرادی

۱	۲	۳	۴
مازنه به از مزارع با غرنه گشا ورزه	۱	۲	۳
نفسا خواندن به دفتر کار	۱	۲	۳
استفاده از نامه یا یادداشت	۱	۲	۳
استفاده از نقشه	۱	۲	۳

روشهای گروهی

۱	۲	۳	۴
شرکت در رساندن ششاه گشا ورزه	۱	۲	۳
تشکیل گلاسهای مازنه آمیزش	۱	۲	۳

۱	۲	۳	۴
اهراس رویتنا ورزه	۱	۲	۳
علامت های مروج	۱	۲	۳
مازنه به مروج و رویتنا ورزه	۱	۲	۳
اهراسی هرزه های مروج	۱	۲	۳



قسمت چهارم - نظریاتی در مورد میزبانی غذاها :

لذا از برای کسب نتیجه سه نمره از مژ تا چهار است راست به چپ با نتیجه به راهنما

راهنما	۰ = هیچ
نمره مژداری	۱ = خیلی کم
	۲ = کم
	۳ = تا حدی
	۴ = خیلی

۱- تا چه اندازه سازمان شما ستاد مای
 می که در آن تحقیق نتایج کار -
 تحقیقات خود را به اطلاع کتای روزان
 میرساند تشکیل میدهند ؟

۱- تا چه اندازه سازمان مریضین روستای
 شما برای مریضین را به بیمارستانها
 تشکیل میشود قلا بر نامه روستای
 میباشد ؟

۱- تا چه اندازه مریضین سازمان شما
 گرت های شما برای آمیزش کتای روزان
 تشکیل میدهند ؟

۱- تا چه اندازه مریضین سازمان شما
 کتای روزان را به گردش می فرستد
 از مزارع نموده و در کتای روزان
 آمیزش کتای روزان میسر است ؟

۱- تا چه اندازه شما ستاد مای
 در محل شما کتای روزان میسر است ؟

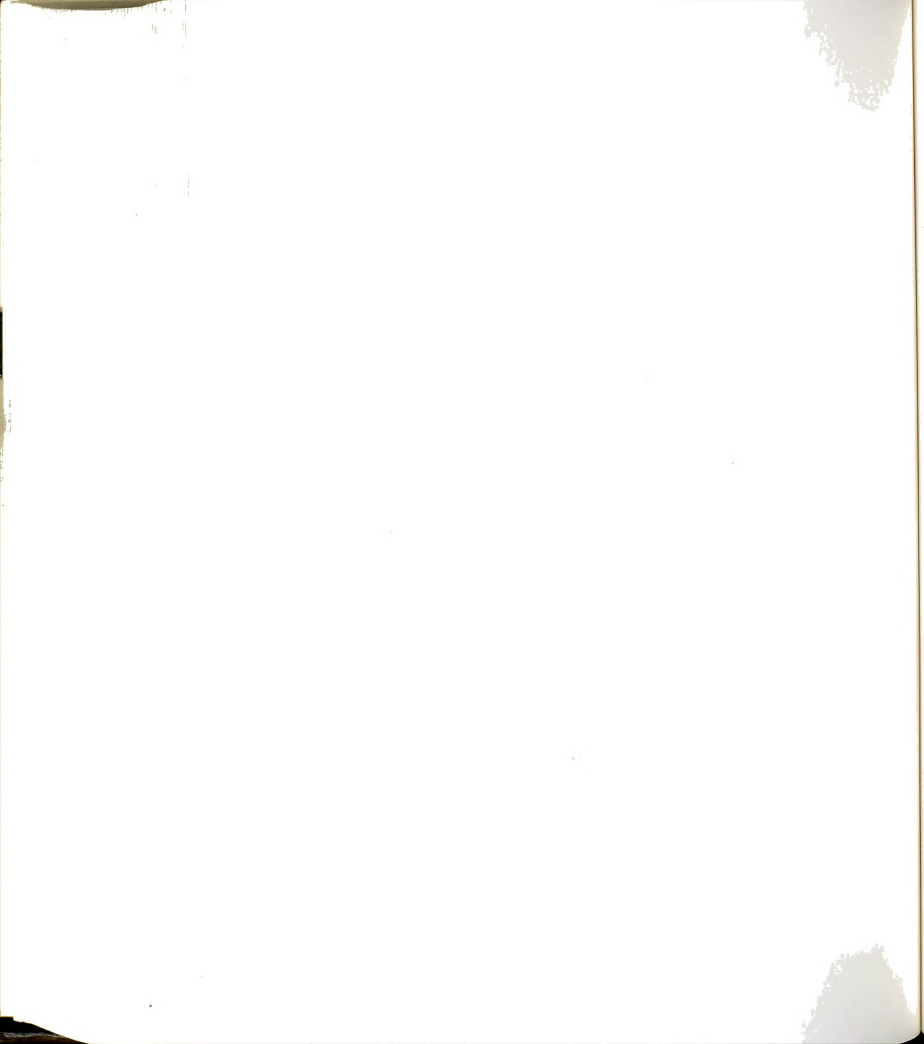
۱- تا چه اندازه شما ستاد مای
 نسبت به رفع مسائل کتای روزان فعالیت
 دارد ؟

قسمت پنجم - انتظارات سازمان در رابطه با مریضین که با شما
 آمیزش می نمایند گفتار :

۱- لذا با یادآوری نتایج در رابطه با مریضین بودن با مریضین بودن در مریضین تا حدی که سازمان
 شما آن اهمیت میدهند چنانچه در این مریضین کتای روزان که از نظر مریضین
 نتیجه است .

مهم نیست تا خیلی مهم

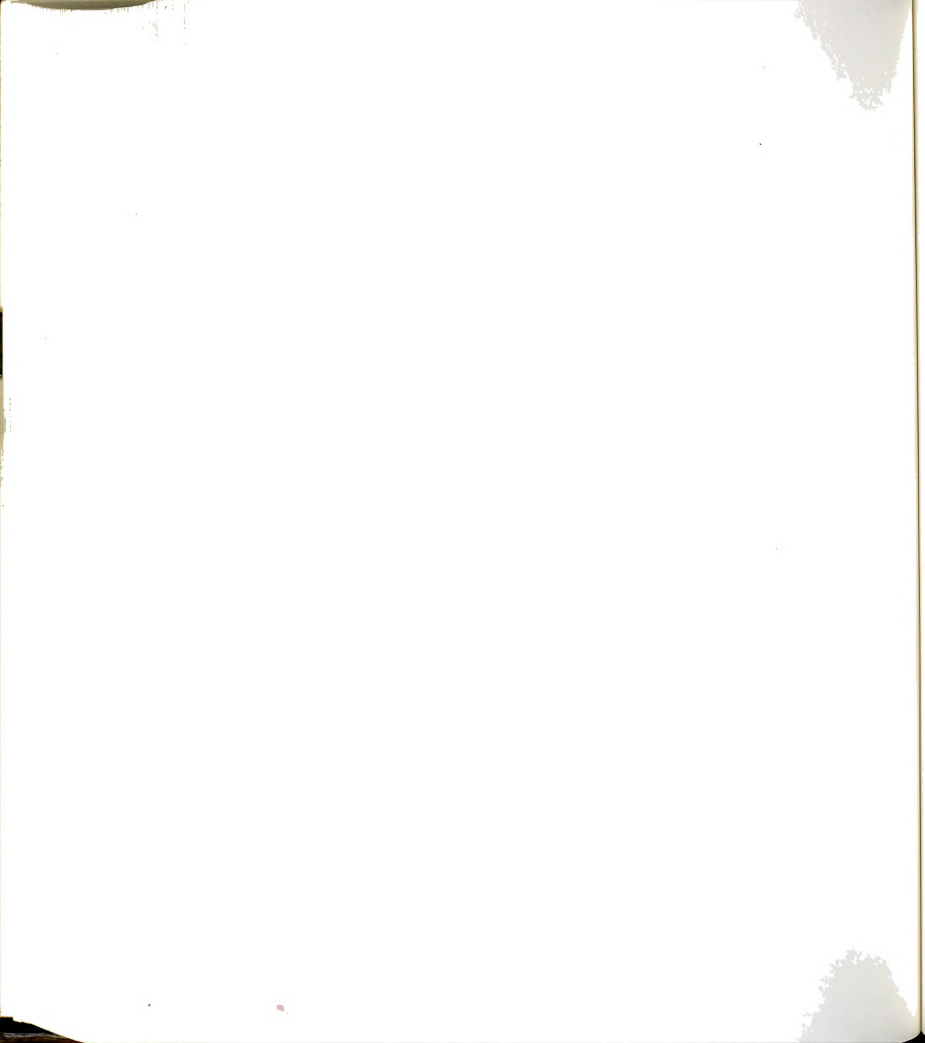
الف - به مریضین تأیید شده	۱	۲	۳	۴	۵
ب - وزارت مریض	۱	۲	۳	۴	۵
ب - استفاده از کتای روزان شما	۱	۲	۳	۴	۵
ت - استفاده از مریضین در مریضین	۱	۲	۳	۴	۵
ت - استفاده از مریضین کتای روزان	۱	۲	۳	۴	۵
ج - بازگشت مریضین به مریضین	۱	۲	۳	۴	۵
ن - بازگشت مریضین به مریضین	۱	۲	۳	۴	۵

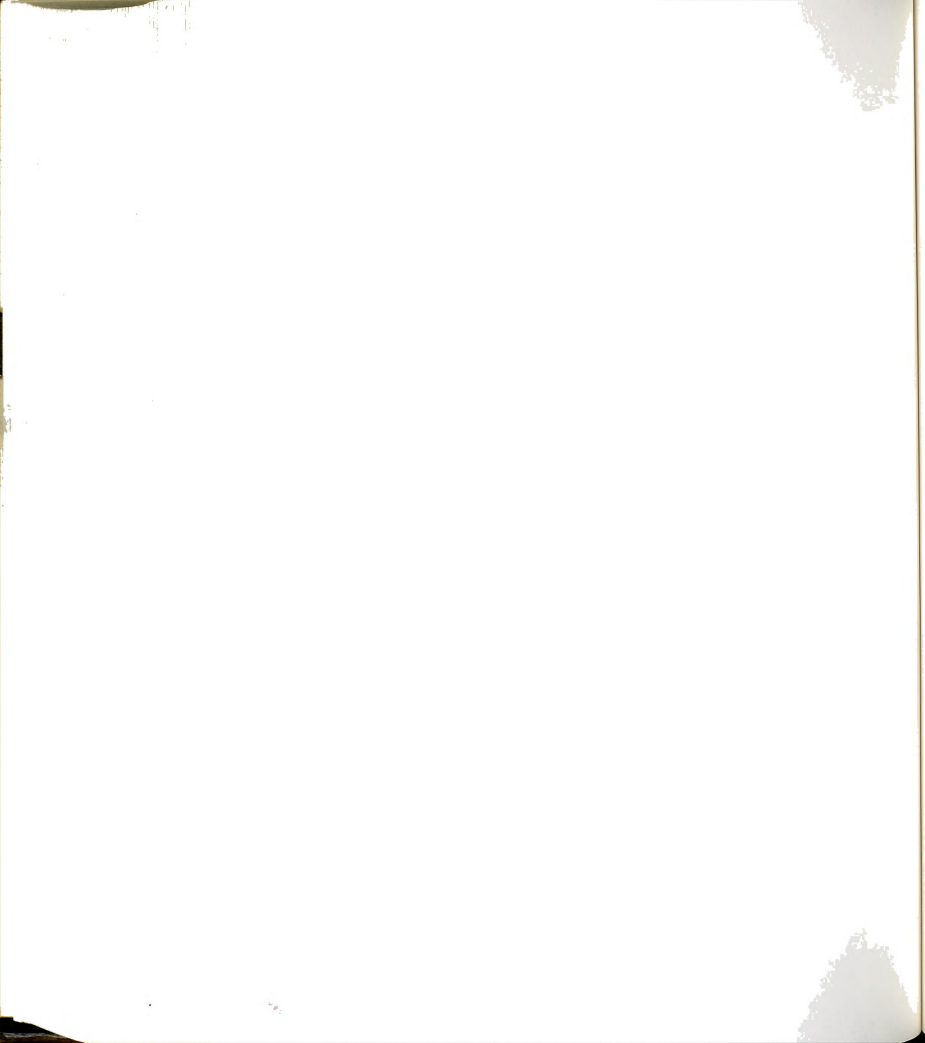


•	۱	۱	۱	۱	ج - بیشتر تجربین مدیریت خان
•	۱	۲	۲	۱	خ - مامینهای ششم
•	۱	۳	۲	۱	د - مامینهای گاهت
•	۱	۳	۲	۱	ز - مامینهای کودپاش
•	۱	۳	۲	۱	ر - مامینهای برداشت
•	۱	۳	۲	۱	ز - طبقات ششم
•	۱	۳	۲	۱	س - به نژادی رامیا
•	۱	۳	۲	۱	ن - به نژادی طبر
•	۱	۳	۲	۱	س - بیسات اعتباری
•	۱	۳	۲	۱	س - بازاریابی
•	۱	۳	۲	۱	ط - انارنچین محصولات و - نموده نگهداری بعد از برداشت
•	۱	۳	۲	۱	ط - بسته بندی، شست و شوی و حمل و نقل
•	۱	۳	۲	۱	ع - تعابین های کشاورزی
•	۱	۳	۲	۱	غ - طبقه
•	۱	۳	۲	۱	ف - مسائل دگر لطفان با آیری نتایج

۲۲- تأثیرهای زیاده و زیاده بردن رانندگی و فعالیت های آمیزش مریج کشاورزی
و جدید دارد. مثل برداشت، حقیق صاحب، آماده کردن و پاشی مریج آمیزش و غیره
در این قسمت نحوه مدیریت و سازمان کشاورزی نظرات لطفاً به شیلات زیر مانیجه
به نظرات و کارهایی که انجام میشود و حیات میدهد.

شماره	سوال
_____	الف - آیا نحوه ارزیابی مدیریت مریج که مریجین از آن - اطلاع داشته باشند و سازمان کشاورزی دارد ؟
_____	ب - آیا ارزیابی سالانه برای مریج از هر مریج کشاورزی کشاورزی دارد ؟
_____	پ - آیا مریجین روستا و اداره از ارزیابی کارهایشان - مطلع میشوند ؟
_____	ت - آیا مریجین برای کار بهتر و نتیجه گیری بیشتر از کارهای مریجین را از راه دور راهنمایی میکنند ؟
_____	ث - آیا برداشت حقیق مریجین تعداد افراد خانواده است ؟
_____	ج - آیا مریجین بیشتر از حقیق مریجین - کاری آنها دارد ؟
_____	ح - آیا اگر مریجین بیشتر از مریجین در کارهای - در برداشت حقیق مریجین دارد ؟





- ۴ - افزایش نیروی ترویجی و تخصصی کشاورزی SA A K D SD
- ۵ - تقویت تحرک مروجین کشاورزی و وسایل نقلیه و وسایل حمل و برقی SD A N D SD
- ۶ - دلگرم نمودن مروجین به کار از طریق اعتبار دادن به مسائل مادی و معنوی و تمهیدات SD A N D SD

خطی از همکاری شما تشکر می‌کنم در خاتمه اگر پیشنهاد و نظراتی ارائه دارید در پایان مرزده یا صفحه جداگانه یاد آوری نمائید.

بسمه تعالی

پرونده تخصصی کشاورزان

این پرونده طراحی شده برای تهیه کردن برنامه‌ها و فعالیت‌های کشاورزی ترویج و آموزش کشاورزی و همچنین شرکت نمودن کشاورزان در برنامه‌های آموزشی و هم‌آهنگی بین‌المللی. نی که جهت انتقال نیروی‌های کشاورزی و مکانیزاسیون کشاورزی در رابطه با به‌ترنست کشاورزی در استان خراسان جنوبی جمهوری اسلامی ایران فعالیت دارند.

قسمت اول: اطلاعات عمومی:

لطفاً بهترین یا بهترین جواب را در مقابل تعیین شد در ارتباط با سئالات زیر سرگرم دارید.

- ۱- سن جواب دهنده سال
- ۲- وضعیت جنسی مرد زن
- ۳- وضعیت تاهل متاهل مجرد
- ۴- آخرین مدرک تحصیلی - - - - -
- ۵- اندازه مزرعه یا زمینی که در آن فعالیت‌های کشاورزی دارید به هکتار - - - - -
- ۶- نوع مالکیت

آیا شما صاحب اصلی مزرعه هستید

آیا شما مزرعه را اجاره نموده‌اید

۷- (انتخابی) درآمد سالانه سال ۱۳۶۲ (لطفاً به یک سؤال جواب دهید)

..... ۲۰ هزار تومان کمتر

..... ۲۱ هزار تومان تا ۲۰ هزار تومان

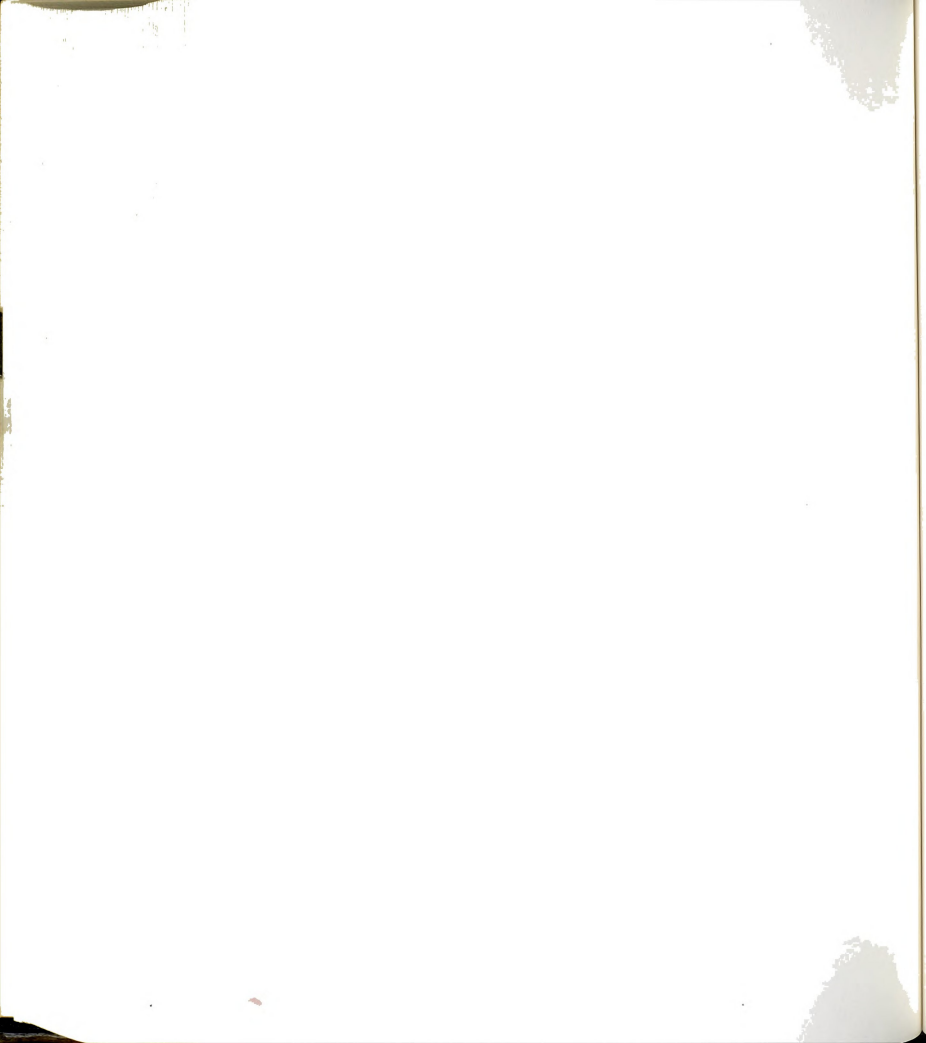
..... ۳۱ هزار تومان تا ۲۰ هزار تومان

..... ۴۱ هزار تومان تا ۳۰ هزار تومان

..... ۵۱ هزار تومان تا ۴۰ هزار تومان

..... ۶۱ هزار تومان تا ۵۰ هزار تومان

..... ۱۰۱ هزار تومان به بالا



نست دوم : انتظار از بازدید و ساطی که مروجین اداره ترویج و جهاد سازندگی دارند

۸- آیا شما هیچ نوع تماسی با مروج کشاورزی در سال گذشته (۱۳۶۷) داشتاید

اگر جواب مثبت است تا چه اندازه شما تماس با این مروج داشتاید

بلی _____ غیر _____ (برای سؤال ۹۰۰)

کمتر از یک بار در شش ماه

هر شش ماه یک بار

بیش از یک بار در سال

آیا شما با مروج جهاد سازندگی در سال گذشته (۱۳۶۷) تماس داشتاید .

بلی _____ غیر _____ (برای سؤال ۱۰۰)

اگر جواب مثبت است تا چه حد شما تماس با این مروج جهاد سازندگی داشتاید

کمتر از یک بار در شش ماه

شش ماه یک بار

بیش از یک بار در سال

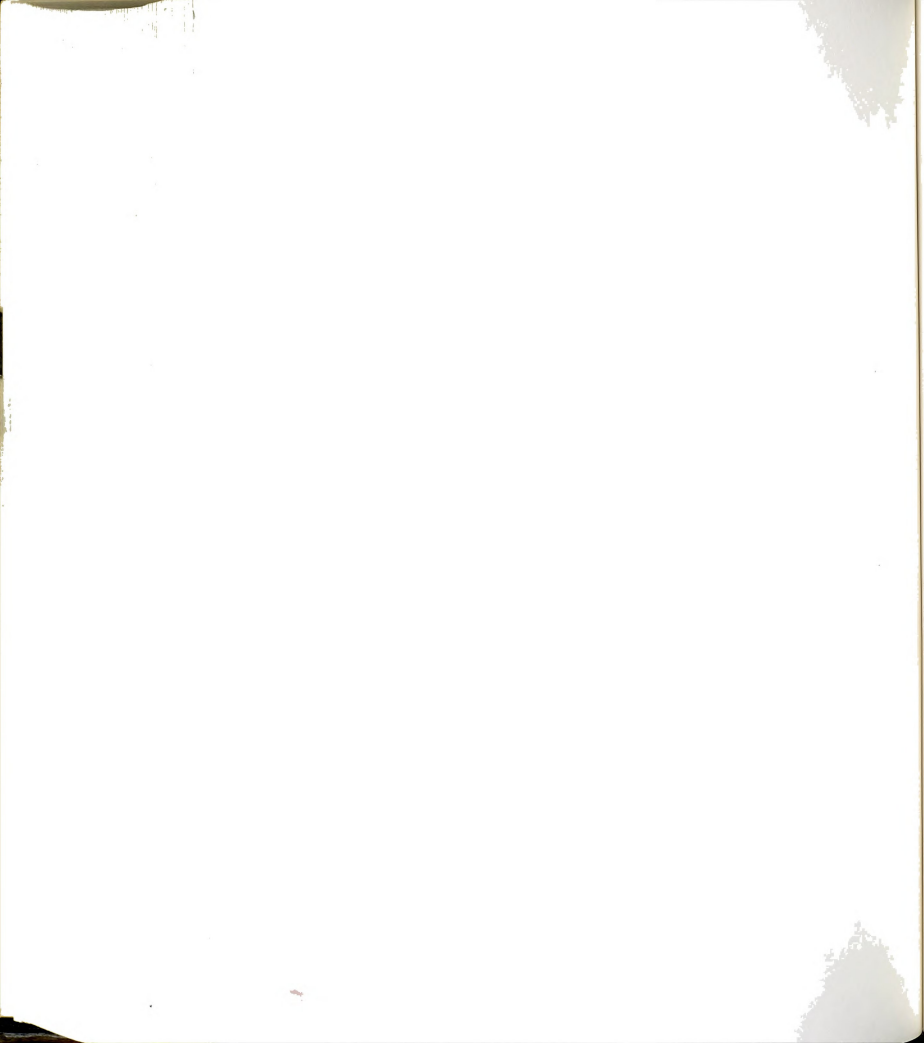
۱۰- اگر جواب سؤال ۸ مثبت بود در کدام یک از موضوعات زیر مروج کشاورزی اداره کشاورزی شما را راهنمایی و هدایت می نماید (لطفاً آنچه که انجام میشود علامت گذاری کنید)

بلی	غیر	الف - در امور زراعت مثل بذر ، کچد ، گاه و غیره
_____	_____	ب - در مورد باغبان های کشاورزی
_____	_____	پ - در مورد حفاظت خاک
_____	_____	ت - در مورد حاصلخیزی خاک
_____	_____	ث - در مورد بازاریابی محصولات کشاورزی
_____	_____	ج - در مورد زراعت دیم
_____	_____	ح - در مورد استفاده از سموم دفع آفات نباتی
_____	_____	خ - در مورد استفاده از ظرف کشها
_____	_____	د - در مورد واریته های جدید سبزی
_____	_____	ذ - در مورد واریته های جدید میوهجات
_____	_____	ر - در مورد زنبورداری
_____	_____	ز - در مورد صنایع روستایی
_____	_____	س - در مورد صنایع غذایی و نگهداری میوهجات
_____	_____	ش - در مورد حمل و نقل محصولات
_____	_____	ص - در مورد انبار و نگهداری غلات و میوهجات
_____	_____	ض - در مورد داد و ستد
_____	_____	ط - در مورد نمونه آماده کردن زمین
_____	_____	ظ - در مورد بسته بندی محصولات کشاورزی
_____	_____	ع - موضوعات دیگر (لطفاً یاد آوری ننماید)

۱۱- اگر جواب سؤال ۹ مثبت بود در کدام یک از موضوعات زیر مروج جهاد سازندگی شما را :

راهنمایی و هدایت می نماید (لطفاً آنچه که انجام میشود علامت گذاری کنید)

بلی	غیر	الف - در امور زراعت مثل بذر ، کچد ، گاه و غیره
_____	_____	ب - در مورد باغبان های کشاورزی
_____	_____	پ - در مورد حفاظت خاک
_____	_____	ت - در مورد حاصلخیزی خاک
_____	_____	ث - در مورد بازاریابی محصولات کشاورزی
_____	_____	ج - در مورد زراعت دیم



ج - در مورد استفاده از سهم دفع اثاث ناشی	_____
خ - در مورد استفاده از طبقه کتبی	_____
د - در مورد دارینهای جدید سبزی	_____
ذ - در مورد دارینهای جدید میوه جات	_____
ر - در مورد زنبور داری	_____
ز - در مورد صنایع روستایی	_____
س - در مورد صنایع غذایی و نگهداری میوهجات	_____
ش - در مورد حمل و نقل محصولات	_____
ص - در مورد نگهداری ثبات و میوه جات	_____
ض - در مورد دامداری	_____
ط - در مورد نحوه آماده کردن زمین	_____
ظ - در مورد بسته بندی محصولات کشاورزی	_____
ع - در میوهجات دیگر (لعلنا، باد آوی نامیده)	_____

۱۲- آگیا شما با هر دو مورد (مورد اداره ترویج کشاورزی، مورد جهاد سازندگی) تماس دارید.

پاسخ: _____ غیر

اگر جواب مثبت است آیا هر دو را اعتنائی برای شما لازم و ضروری است

پاسخ: _____ غیر

اگر جواب مثبت است آیا هر دو تأثیر شما را در رابطه با مسائل و میوهجات مشابه

را اعتنائی میکنند. پاسخ: _____ غیر

۱۳- اگر جواب سؤال ۱۲ مثبت است کدام یک از مروجین بیشتر سائل چنین و نسوآوری.

های کشاورزی را با شما در میان میگذارند

الف - مورد جهاد سازندگی

ب - مورد اداره کشاورزی

پ - هر دو

ت - هیچکدام

۱۴- کدام یک از مروجین به نظر شما میتواند بهتر مشکل کشاورزی شما را حل کند؟

الف - مورد جهاد سازندگی

ب - مورد اداره کشاورزی

پ - هر دو

ت - هیچکدام

۱۵- کدام مورد (مورد اداره ترویج یا مورد جهاد سازندگی) بیشتر با شما تماس

دارند

الف - مورد جهاد سازندگی

ب - مورد اداره ترویج کشاورزی

پ - هر دو

ت - هیچکدام

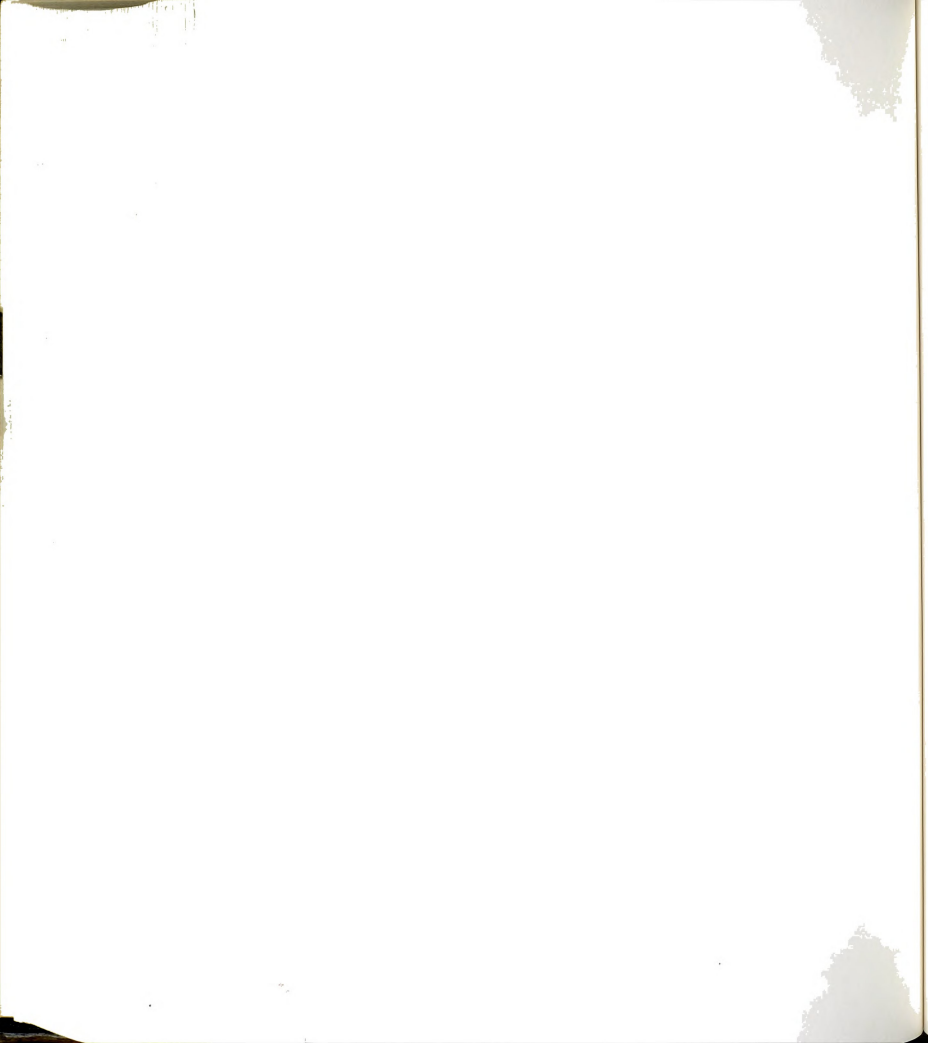
۱۶- کدام یک از مروجین شما را بیشتر در حل مشکلات کشاورزی و نواختن اعتنائی میکند.

الف - مورد جهاد سازندگی

ب - مورد ترویج کشاورزی

پ - هر دو

ت - هیچکدام



۳۳. کدام یک از مروجین جواب بهتر در رابطه با نیازهای شما اعلام می‌دهند

الف - روح جهاد سازندگی

ب - روح اداره ترویج

پ - هر دو

ت - هیچ کدام

۱۳. با کدام روح (جهاد سازندگی یا روح کشاورزی) علاقت بیشتری دارید؟
داشته باشید

الف - روح جهاد سازندگی

ب - روح اداره کشاورزی

پ - هر دو

ت - هیچ کدام

۱۴. لطفاً جواب سؤالات زیر را بصورت دایره‌ای مشخص کنید و توجه داشته باشید که فقط نظر شخصی شما و سادگی و وضوح نظری شما باینکه مورد توجه و نظر باشد. د. ذهن راهنمایی زیر جهت جواب مورد نظر است

SD - خیلی ناموافق

D - تقریباً غیر موافق اما بعضی اوقات موافق

N - متوسط

A - تقریباً موافق اما بعضی اوقات ناموافق

SA - خیلی موافق

۱۵. هم‌آهنگی بین مروجین اداره ترویج و مروجین جهاد سازندگی از بهترین مسائل بهرنت کشاورزی است

SA A N D SD

۱۶. برگزاری سمینار و اجرای طرح‌های نمایشی که توسط روح اداره ترویج برگزار می‌شود خیلی مورد استفاده قرار می‌گیرد تا سمینارها و طرح‌های نمایشی روح جهاد سازندگی.

SA A N D SD

۱۷. برگزاری سمینار و اجرای طرح‌های نمایشی که توسط روح جهاد سازندگی به اجرا گذاشته می‌شود خیلی مورد استفاده قرار می‌گیرد تا سمینارها و طرح‌های نمایشی روح اداره ترویج کشاورزی.

SA A N D SD

۱۸. هماهنگی بین مروجین اداره ترویج و مروجین جهاد سازندگی از بیشترین نیازهای بهرنت کشاورزی جمهوری اسلامی ایران است

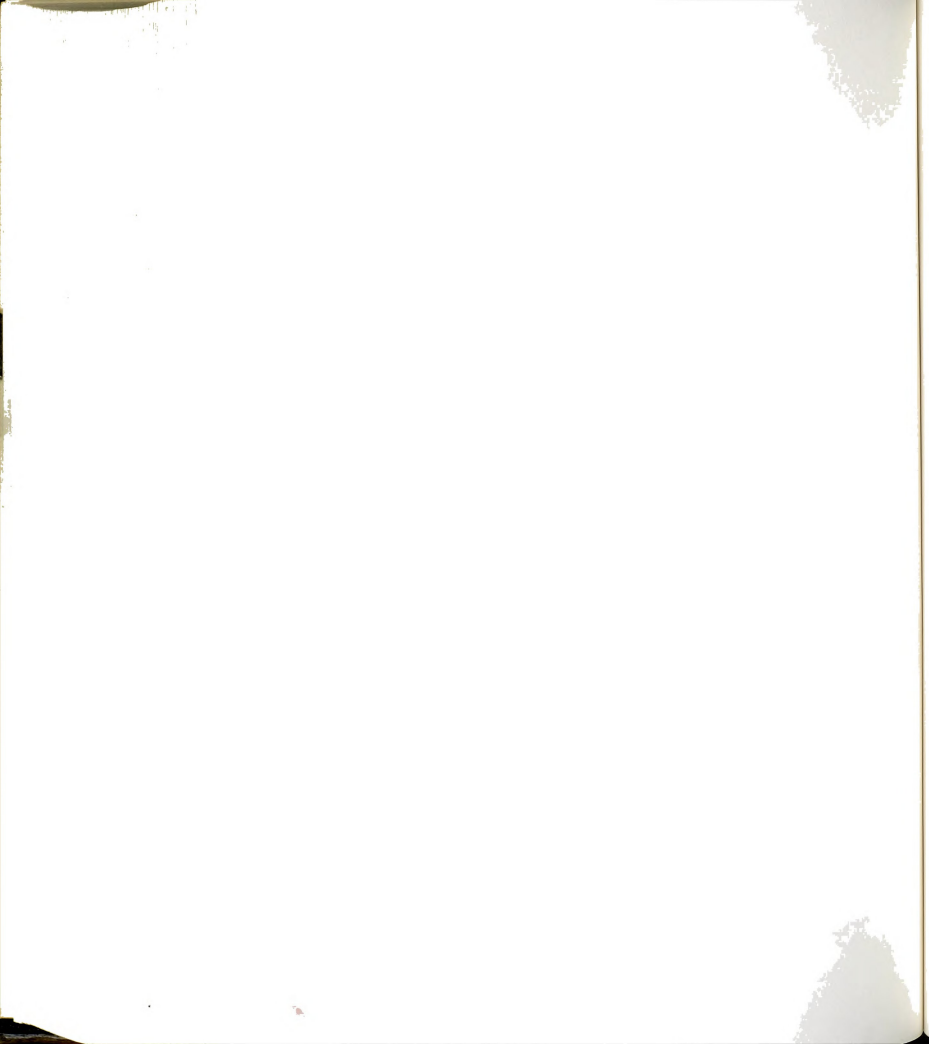
SA A N D SD

۱۹. اقدام نمودن ۲ سازمان به یکسازمان از سائل مهم بهرنت کشاورزی در جمهوری اسلامی ایران است

SA A N D SD

۲۰. روح اداره ترویج کشاورزی بصورت مداوم از کار کشاورزی بی‌میزه، بازدید میکند.

SA A N D SD

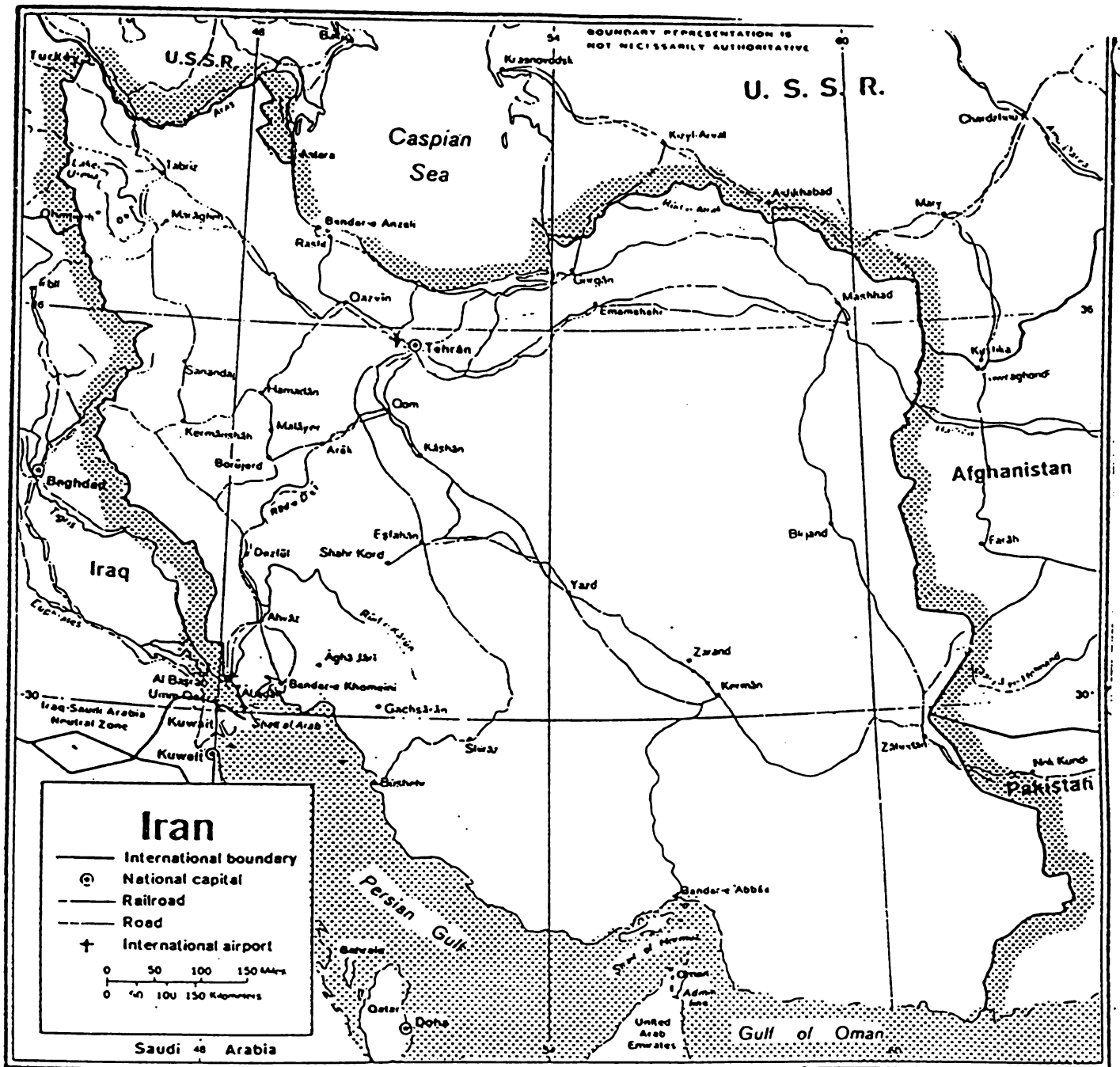


- ۲۱- مروج جهاد سازندگی بصورت مداوم از کارگاه کشاورزی پررنگه، بازدید میکند
SA A N D SD
- ۲۲- مروج اداره ترویج کشاورزی متناوباً با مأمی است که دست باسی به آن شکل است
SA A N D SD
- ۲۳- مروج جهاد سازندگی متناوباً با مأمی است که دست باسی به آن شکل است
SA A N B SD
- ۲۴- جهت انتقال و گفتگو با کشاورزان مروج اداره ترویج کشاورزی قبلاً اطلاعات و منابع لازم و تهیه کوشهای نمایشی را جهت آموزش بهتر پیش بینی می نماید
SA A N D SD
- ۲۵- جهت انتقال و گفتگو با کشاورزان مروج اداره ترویج کشاورزی، قبلاً اطلاعات و منابع لازم و تهیه کوشهای نمایشی را جهت آموزش بهتر پیش بینی می نماید
SA A N D SD
- ۲۶- جهت انتقال و گفتگو با مروج جهاد سازندگی قبلاً اطلاعات، منابع لازم و تهیه کوشهای نمایشی را جهت آموزش بهتر پیش بینی می نماید.
SA A N D SD
- توجه: سوم: انتظار در رابطه با کیفیت آموزشی مروجین کشاورزی.
- ۲۷- مروج کشاورزی اداره کشاورزی اطلاعات جدید تکنولوژی که برای کشاورزان مورد نیاز است با آنها در میان میگذارد
SA A N D SD
- ۲۸- مروج جهاد سازندگی اطلاعات جدید تکنولوژی که برای کشاورزان مورد نیاز است با آنها در میان میگذارد
SA A N D SD
- ۲۹- مروج اداره کشاورزی در منطقه میبایست و سعی در رفع مشکلات کشاورزی کشاورزان دارد
SA A N D SD
- ۳۰- مروج جهاد سازندگی در منطقه میبایست و سعی در رفع مشکلات کشاورزی کشاورزان دارد
SA A N D SD
- ۳۱- مروج اداره کشاورزی معمولاً راهنماییها را مارج بپوش که امکان فراهم آوردن با عمل کردن به آن در منطقه ممکن نیست
SA A N D SD
- ۳۲- مروج جهاد سازندگی معمولاً راهنماییها را مارج بپوش که امکان فراهم آوردن با عمل کردن به آن در منطقه ممکن نیست
SA A N D SD



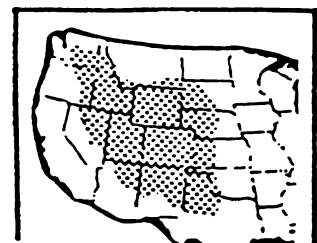


MAP OF ISLAMIC REPUBLIC OF IRAN



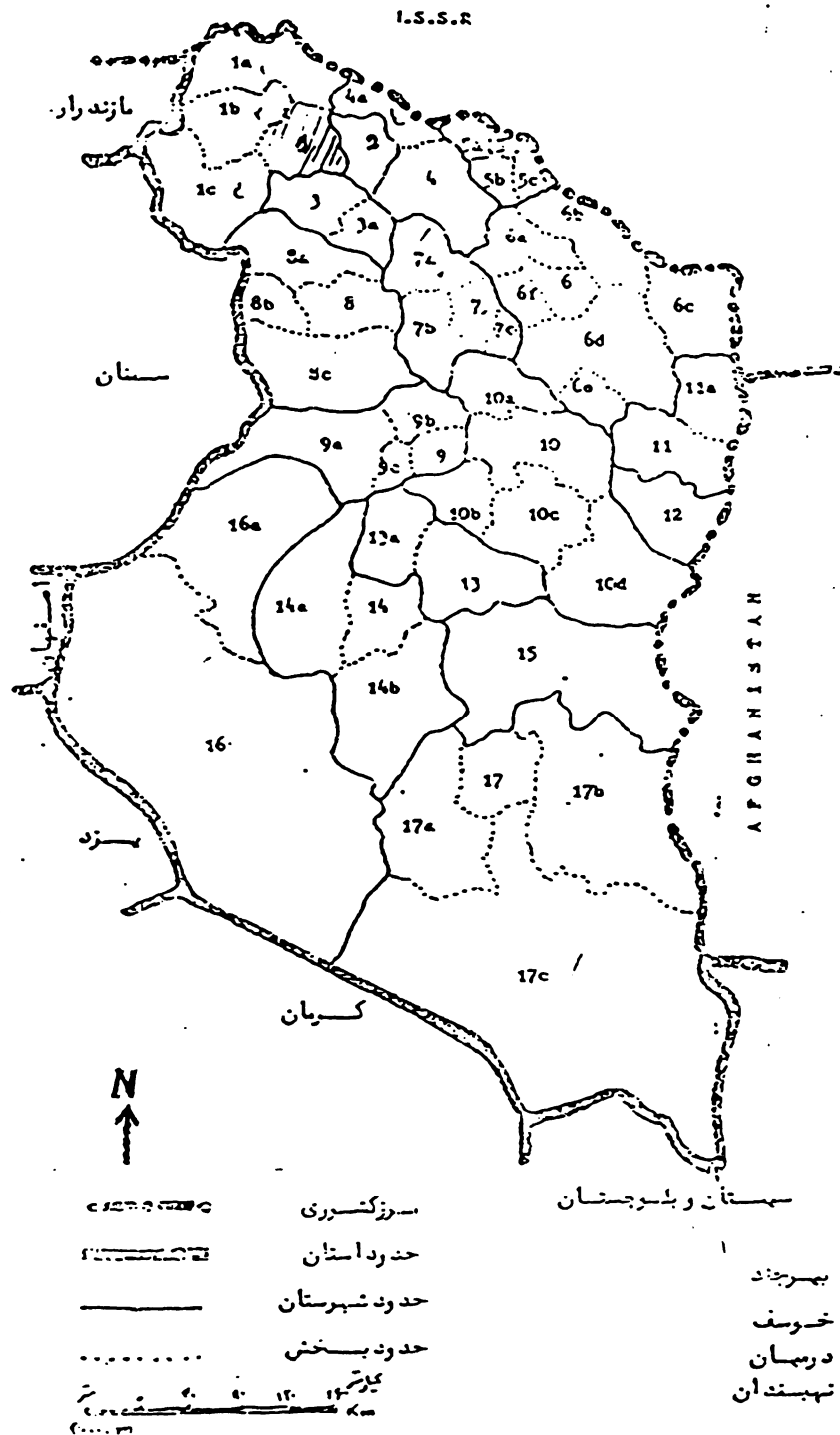
ISLAMIC REPUBLIC OF IRAN

AREA: 636,293 sq mi 1,647,999 sq km
 POPULATION: 51,900,000 (est. for July '88)
 CAPITAL & LARGEST CITY: Teheran
 (5,751,000 est'd 1985)
 GNP: —

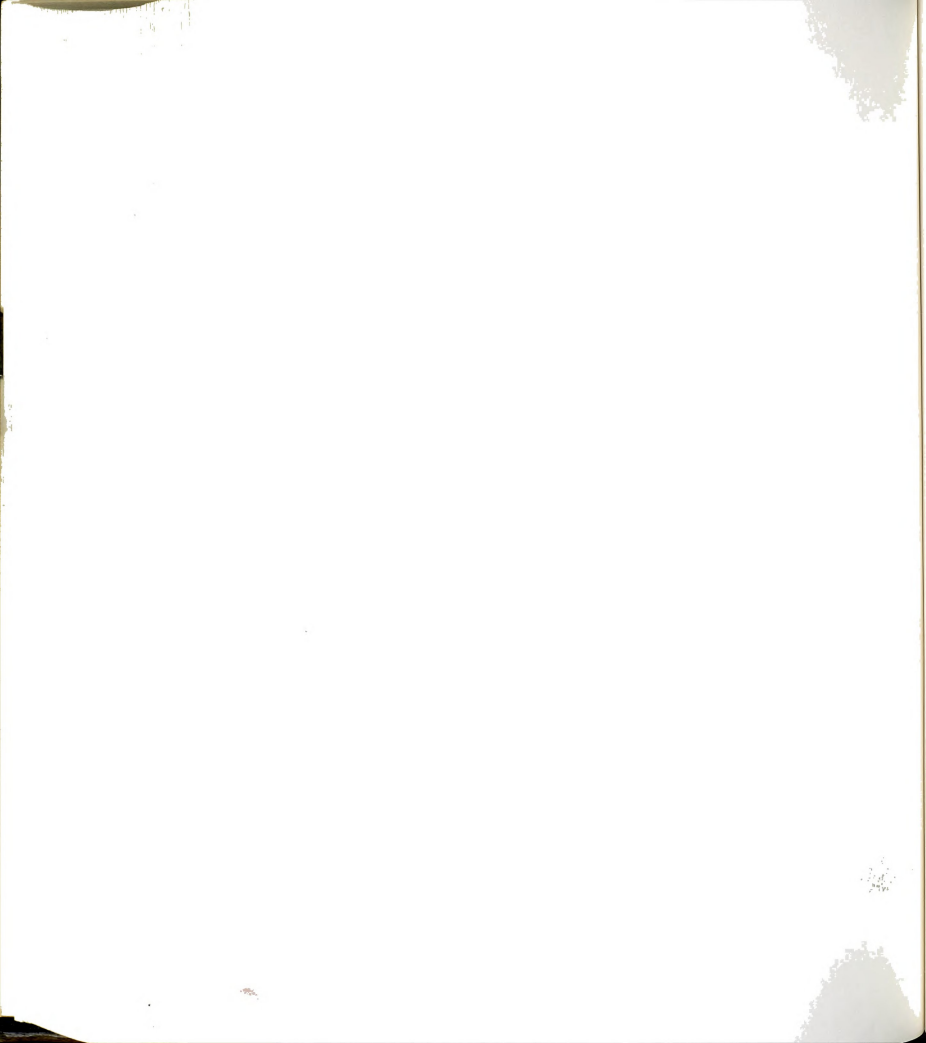




MAP OF THE AREA
STATE OF KHORRASSAN



- 1- بجنورد
- 1a- حرکلان
- 1b- مازهرستان
- 1c- جاجرم
- 2- شمران
- 3- اسفراین
- 3a- باهره‌ای آباد
- 4- تسوجان
- 4a- چاکیران
- 5- درک...ز
- 5a- نوخندان
- 5b- پاپه‌شار
- 5c- اغف آباد
- 6- مشهد
- 6a- چناران
- 6b- کلات
- 6c- سرخس
- 6d- احمد آباد
- 7- نهمان
- 7a- طرنبه
- 7b- نیشابور
- 7c- سرولایت
- 8- تخت جنگ
- 8a- زیرخان
- 8b- سنزاد
- 8c- چننای
- 9- دایرین
- 9a- شمشند
- 9b- کاشمر
- 9c- برد سن
- 10- کوه سن
- 10a- خلی آباد
- 10b- تربت حیدریه
- 10c- کدکسن
- 11- قهقرا آباد
- 11a- رشت خوار
- 11b- خواف
- 11c- تربت جام
- 12- جنت آباد
- 12a- باخیز (نایب آباد)
- 13- گسار
- 13a- بجنان
- 14- نبردوس
- 14a- بنرویه
- 14b- سرایان
- 15- قزائنات
- 15a- طهس
- 16- دشتگردان
- 17- بهرجند
- 17a- خوسف
- 17b- درمیان
- 17c- نهپندان



APPENDIX C
Correspondence



Agricultural & Extension Education



Michigan State University
410 Agriculture Hall
East Lansing, Michigan 48824 - 1039
(517) 355 - 6580

November 6, 1989

Dr. John K. Hudzik, Chair
UCRIHS
Michigan State University
206 Berkey Hall
East Lansing, MI 48824-1111

Dear Dr. Hudzik:

This letter is to confirm that I have reviewed the proposed project of Hassan Aghel. The project has my full endorsement and approval.

Sincerely,

Carroll H. Wamhoff
Chairperson

CHW/slb



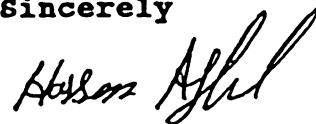
Dr. John K. Hudzik, chair
UCRIHS
Michigan state University
206 Berkey hall
East Lansing ,Mi 48824-1111

Dear Dr. hudzik:

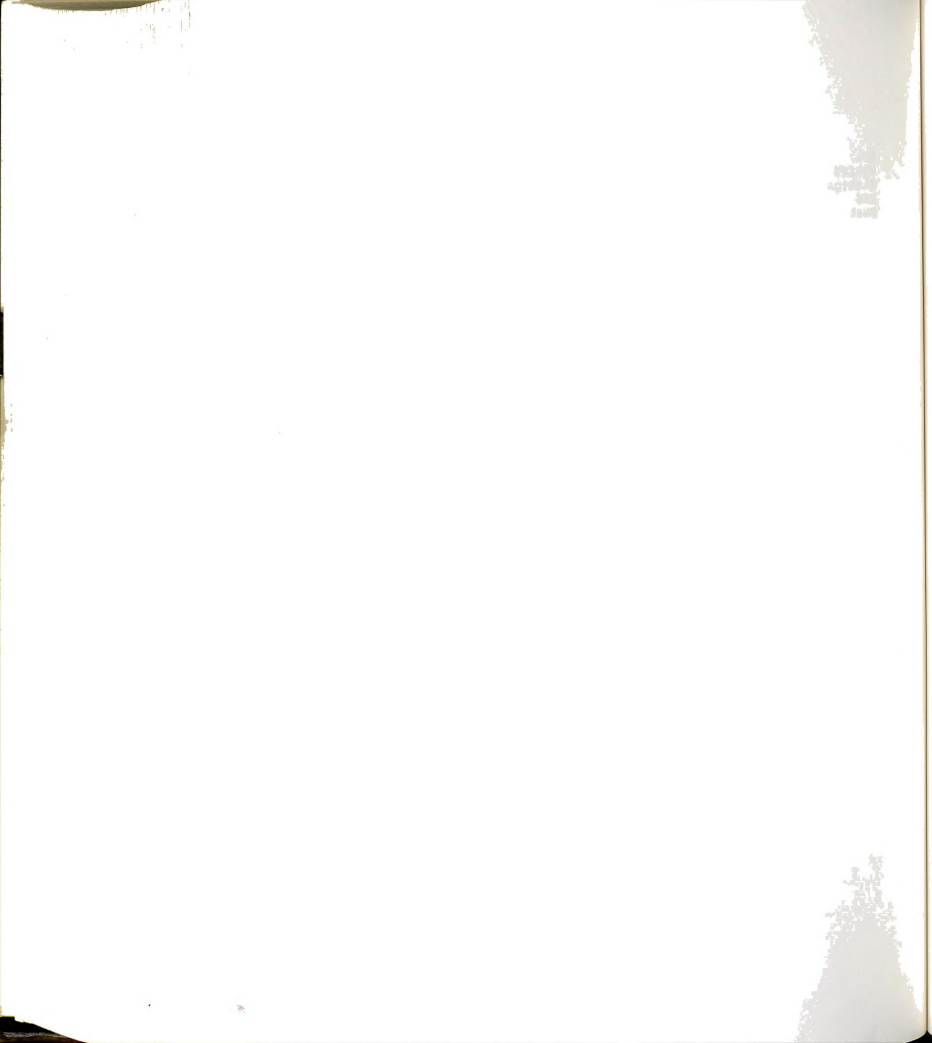
Due to a Telephone call from your office, about the explanatory letter for my research in the Islamic Republic of Iran, (Comparative Study of the Effectiveness of Agricultural Extension Work by Two Agencies in Iran, State of Khorassan), I felt it necessary to write a letter of further explanation. This explanatory for the clientele is enclosed.

The participatory name can not be found from the questionnaire, because of the large population and large area, under any circumstances. My participation in the collection of data is voluntary, and to further insure the anonymity of the participants, I may choose not to participate.

Sincerely



Hassan Aghel
Graduate Student



MICHIGAN STATE UNIVERSITY

UNIVERSITY COMMITTEE ON RESEARCH INVOLVING
HUMAN SUBJECTS (UCRIHS)
206 BERKELEY HALL
(517) 353-9738

EAST LANSING • MICHIGAN • 48824-3111

November 15, 1989

IRB# 89-496

Hassan Aghel
1579 I Spartan Village
East Lansing, MI 48823

Dear Mr. Aghel:

RE: "COMPARATIVE STUDY OF THE EFFECTIVENESS OF AGRICULTURAL
EXTENSION WORK BY TWO AGENCIES IN ISLAMIC REPUBLIC OF IRAN
IRB# 89-496"

The above project is exempt from full UCRIHS review. I have reviewed the proposed research protocol and find that the rights and welfare of human subjects appear to be protected. You have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to November 15, 1990.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,



John K. Hudzik, Ph.D.
Chair, UCRIHS

JKH/sar

cc: C. Warnhoff





MASHHAD UNIVERSITY

School of Agriculture

MASHHAD, IRAN

Date

بسمه تعالی

کشاورز محترم

این پرسشنامه در رابطه با ارزیابی و مقایسه کردن نحوه ترویج و آموزش مروجین اداره ترویج کشاورزی و جهاد سازندگی که در رابطه با پیشبرد کشاورزی مکانیزه و مسائل نوین کشاورزی برای کشاورزان و روستائیان به اجرا میگذارند پیش پهنی شده است.

لازم به تذکر است که جواب دادن یا جواب ندادن به سئوالات این پرسشنامه اختیاری است و هیچ گونه اثرات مثبت و منفی در رابطه با هیچ فرد و یا گروهی نخواهد داشت فقط جنبه تحقیقی آن نیز مورد نظر است و هیچ گونه قدرت و مسئولیت اجرایی با مسائل کشاورزی و ترویجی ندارم و همچنین هیچ گونه ارتباطی نیز بین محقق و وزارت خانه ها و یا دوسازمان در استان خراسان وجود ندارد مقداری از هزینه این طرح از طریق دانشکده کشاورزی دانشگاه فردوسی مشهد و مقداری از طریق محقق نیز تأمین شده است.

محمد ابراهیم بازاری
رئیس دانشکده کشاورزی



Hassan Aghel
1579 I Spartan Vg.
E. Lansing Mi 48823

November 5, 1989

Dear Farmers, Extension Agents, Rural Development Personnel:

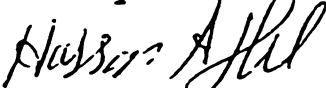
MR/ ms(last nam),


You have been selected to participate in this study, and this questionnaire is part of a research effort currently underway at Michigan State University. Its main purpose is to find out what types of information you would like to have and which types of methods you have adopted and what agency you feel has more linkage with you.

You may be assured of complete confidentiality . The questionnaire has identification number for statistical purposes only .Your name will never be placed on the questionnaire. Completion of the survey is voluntary with no penalty for non participation .The return of the survey constitutes your consent.

This is a Ph.D.research project and we estimate that it will take 15 to 20 minute to complete the questionnaire .your cooperation in participating in the interviews and in filling out this questionnaire will be greatly appreciated.

Thank you sincerely,


Hassan Aghel
Graduate Student


Carroll H. Wamhoff
Chair person





MASHHAD UNIVERSITY

Date

School of Agriculture

MASHHAD . IRAN

بسمه تعالی

شورای اسلامی روستای

ضمن سلام و آرزوی سلامتی برای همگی برادران و خواهران روستائی که در واقع از نیرو —
 های خط مقدم جبهه اقتصادی هستید و با کار و کوشش خود سعی در بالا بردن تولیدات
 کشاورزی دارید تا نیاز ملت مسلمان ایران را به کشورهای خارج کم کنید از خداوند متعال خواستار
 موفقیت هر چه بیشتر شما هستیم . بدینوسیله برادر رهنه‌دار محسن عاقل که با گروه خود در حال
 بررسی نحوه آموزش و ترویج کشاورزی در استان خراسان می باشند حضورتان معرفی می شوند ،
 خواهشمند است ترتیبی داده شود که برادران روستائی همکاری لازم را با نامبرداران مبذول
 دارند ، همچنین در رابطه با محل خواب برادران و تسهیلات رفاهی برای چند شبی که در روستای
 شما می باشند مساعدت لازم را مبذول دارید .

محمد ابراهیم بازاری
 رئیس دانشکده کشاورزی





شماره

تاریخ

پوست

بسمه تعالی

کارشناس، مروج محترم کشاورزی

ضمن سلام و آرزوی سلامتی و موفقیت برای جنابعالی، چون شما جهت پاسخ به پرسشنامه ضمیمه-
 به صورت آماری انتخاب شده اید و این پرسشنامه مربوط به طرح اینجانب در رابطه با مقایسه نمودن
 برنامه ها و فعالیتها یا آموزشی و ترویج کشاورزی در استان خراسان می باشد حضورتان ارسال گردیده
 است. ضمن اینکه حدود ۲۰ تا ۳۰ دقیقه از وقت شما را میبرد. با توجه به سابقه کاری، مسئولیت و
 فعالیتهای که انجام می دهید ترتیبی داده شود که به سئوالات پرسشنامه پاسخ داده شود و پس از
 تکمیل به آدرس دانشگاه کشاورزی دانشگاه مشهد صندوق پستی ۱۱۶۳ کد ۹۱۷۷۵ بهراری-
 اینده اند، ارسال گردد.

از همکاری صمیمانه شما صمیمانه تشکر و سپاسگزاری میکنم با امید موفقیت هرچه بیشتر.

حسن تاقیقل

Hossein Taghiyeh



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