AN ANALYSIS OF PARADIGM SHIFT FROM PUBLIC EXTENSION TO PUBLIC PRIVATE PARTNERSHIP EXTENSION SYSTEM IN NWFP, PAKISTAN

By

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TO

MY GRACEFUL BROTHERS & SISTERS

Whose prayers & sympathies steer my way towards success
Abstract

A general weakness of agricultural extension is the low adoption of new agricultural technologies by poor and small farmers. As the present public extension systems in many countries have not been able to address the issues and concerns of small and poor farmers, a search for new extension models that are more effective, efficient, and responsive to different categories of farmers is essential. This essential model might be the public-private partnership. Govt. of NWFP has initiated a new public-private partnership extension program in the province during the year 2000. This emerging system is locally called as Farm Services Centers (FSCs) where inputs delivery, market facilitation, exchange of experiences and knowledge are the main activities of the system. However, there is still information gap about whether this public-private partnership will be beneficial in developing and extending agricultural technologies. This study intends to fill up that information gap by analyzing this public-private partnership by measuring its strengths, weaknesses, opportunities and threats. For this purpose, out of 24 districts, two districts Swabi and Lakki Marwat were selected randomly as study area from where 217 and 274 farmer respondents were selected at random with the help of table given by Fitzggibbon et al. (1987), making a total of 491 respondents. All the Agricultural officers and district officers of the selected districts were also selected as respondents of the study. Quantitative data were collected by survey method, while qualitative data by focus group discussion with the help of open-ended interview schedule. The results showed that the most important strength of FSC in the eyes of farmer respondents was “managed by farmers’ bodies” as ranked 1st with mean 4.05 and SD 1.29. The weaknesses of both extension systems as diagnosed by the farmer respondents were “no sale arrangements for surplus produce”. In case of opportunities, FSC was bottom up approach and “based on partnership between farmers and the government” ranked 1st with mean 4.12 and SD 1.29. The threats for FSC as reported by farmers respondents were “no trend to develop farmers’ organizations among farming community”, “pressure exerted by political influential authorities” and “low preference of agriculture by youth as full time occupation”. According to EFS respondents the most important strength for FSC was “managed by farmers’ bodies” which ranked 1st with means 4.82 and SD 0.40. The major weaknesses of FSC as diagnosed by EFS respondents were “no female staff”, “no sale arrangements for surplus produce”, and “lack of marketing facilities” ranked 1st, 2nd, and 3rd. The statements “offers low cost of learning”, “based on partnership between farmers and the government”, “provides forum for farmers to get together”, “proved extension workers to be good change agents”, and “encourages farmers participation” were the top five opportunities of the system. Out of all threats, EFS ranked the statement “no trend to develop farmers’ organizations among farming community” as 1st threat with mean 3.82 and SD 1.40. On the basis of conclusions it was recommended that Government should provide the opportunities of availing projects of different funding agencies to increase the share of private sector on FSC basis. Government should formulate law to increase the participation of women in the present programs, as they are main component of agriculture. Department should provide more facilities like pay and other allowances to the staff indulged in FSC to increase their working efficiency. As recommended by
respondents separate meeting places should be provided for female farmers, so as they effectively get trainings and efficiently utilized the acquired knowledge in relevant fields.
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# LIST OF ABBREVIATIONS

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<tr>
<td>EFS</td>
<td>Extension field staff</td>
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<td>FSC</td>
<td>Farm services center</td>
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<td>AED</td>
<td>Agricultural extension department</td>
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<td>NWFP</td>
<td>North West Frontier province</td>
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Since the immemorial times, agriculture is adopted by man as a profession that provides him food, clothes and shelter. Agriculture not only provides raw material for primitive industry but also plays a role in the uplift of social status of human in the society. The history of world shows that the nations achieved their rise when they become self sufficient in food but faced fall when their agriculture destroyed.

Like other Asian countries, Pakistan also has an agro-based economy. It accounts for 20.9 percent of GDP and employs 43.4 percent of the total work force. Agriculture contributes to growth as supplier of raw materials to industry as well as market for industrial products and also contributes substantially to Pakistan’s exports earnings. Almost 66.7 percent of country’s population lives in rural areas and is directly or indirectly linked with agriculture for its livelihood (Government of Pakistan, 2007).

The crop production in Pakistan is lowest as compared to the world’s averages (Khan, 2004). However, nature bestowed us a wide agro-climatic range not only fit for field crops but also for fruit crops. Along with other provinces NWFP also has the same agro-ecological zones fit for different types of crops. The province is sheltering a population of more than 20 millions people, out of which 83% reside in rural areas in a meagre situation under tremendous pressures on resources. The major crops of the area are wheat, rice, barley, maize, sugarcane, tobacco, rape and mustered groundnut, pulses, vegetables and fruits. (Government of NWFP, 2005).

The majority of population is directly dependent on agriculture as a source of their livelihood. Weak industrial base increases further dependence on agriculture. At this crossroad where almost all the available cultivable land and water is being used, an immense pressure has been brought to bear on the available natural resource base and it is further shrinking on account of high level of urbanization. Environmental problems are on the rise and affecting other natural assets like biodiversity, rangeland, forest and fresh water etc. (Government of NWFP, 2004). This situation highlights the need for agricultural development in the province

Agricultural development implies shift from traditional methods of production to new science-based methods of production. This includes new technological components i.e. varieties, cultural practices, chemical fertilizers, pesticides and even new farming systems. For the adoption of new technologies successfully, the farmers needs not only to have know-how about them but also to learn how to use them in their existing farming systems, which is the real job of an agricultural extension service.
1.1 Agricultural Extension

Agricultural extension plays an important role in agricultural and rural development. It serves as a tool for the education of farming community about technologies and improved crop production techniques along with judicious use of natural resources. Side by side this important task, agricultural extension works as two-way information exchange junction between farmers and research stations. It means that agricultural extension reports the field problems of farming community to research stations and outcome of research is disseminated back to farming community (Bajwa, 2004). For the dissemination of information, agricultural extension is very diverse from international perspectives. It works under public sector in many countries of the world, whereas in advanced form, it is managed by non-governmental organizations or totally by private autonomous bodies.

For the uplift of living standard of rural people and introduction of new technologies in agriculture, Government of Pakistan both at federal and provincial level tried different extension models and programmes from time to time, which are briefly discussed as under.

1.2 Agricultural Extension: A historical perspective

Initially the task of agricultural extension was performed under the umbrella of community cum rural development programs launched from time to time by the different governments in Pakistan. A brief overview of these programs is presented in the following lines, which indicates the development / emergence of agricultural extension as an institution in the country.

1.2.1 The Village Agricultural and Industrial Development (V-AID) Program

This program was started in 1952 with the financial assistance of USAID and Ford Foundation (Axinn and Thorat, 1972; Asian Productivity Organization, 1994). The basic objective of V-AID program was to create the sense of self-help among the rural people to solve their problems concerned with agriculture and rural development. Village-AID workers were given extensive pre-service and in-service training in many disciplines such as agriculture, animal husbandry, health, cooperation, home economics, cottage industries, education, and youth organizations, etc.

This program worked for the development of the rural areas through organizing village councils, building roads, digging wells, constructing schools, and disseminating improved agricultural technologies. This program showed a good success in the
beginning but became a victim of departmental jealousies and political change in the country (Davidson et al., 2001).

1.2.2 The Basic Democracies System (BDS)

Ayub regime started this program in the year 1959. It was designed specially to bring together both the elements of community development and political development, especially to solve problems at union council level. The BDS got much success in developing awareness and building local leadership among the rural masses, but due to change in the government in 1970, BD system was abolished and was replaced with a new rural development program known as the 'Integrated Rural Development Program' (IRDP).

1.2.3 Integrated Rural Development Program (IRDP)

This program was designed for the uplift of rural life through the integration of the services of different line departments at one point. All officers recruited to run this program were agricultural graduates. On the other hand, Local Government Department controlled rural development funds, which resulted tension and frustration for the workers of this newly launched program. This coordinating role could not be accomplished successfully for hard departmental boundaries and at last in 1978, the IDRP was merged into the Local Government Department and turned into a routine bureaucratic agency (World Bank, 2003).

1.2.4 Inputs at Farmers’ Doorsteps Approach

It was an effort to improve agricultural productivity in the country. The government provided substantial subsidies on agricultural inputs to the farmers which were considered essential for increasing agricultural production. (Axinn & Thorat, 1972). The
approach also proved costly and ultimately paved the way for the privatization of agricultural inputs and phasing out of the subsidies borne by the Government (Davidson et al., 2001; and World Bank, 2003). This approach was replaced with a new system of extension known as the “Training and Visit” system in the year 1978.

1.2.5 Training and Visit (T&V) System

T&V system is a professional system of extension based on frequently updated training of extension workers and regular field visits (Benor et al., 1984). It provides an organizational structure and detailed mode of operation that ensures that extension agents visit farmers regularly and transmit messages relevant to production needs; problems faced by farmers are quickly fed back to specialists and research for solution or further investigation. T & V based on a two-step flow of information – from contact farmers to the farming community (Van den Ban and Hawkins, 1996).

Training & Visit (T&V) programme was first introduced in Pakistan in the five districts of the Punjab namely Jehlum, Sargodha, Shiekhupura, Vehari and Rahim Yar Khan and three districts (Mardan, Buner & D.I. Khan) of NWFP as a pilot project in 1978 (Gondal, 1989). The financial and technical assistance was provided by the World Bank (Government of the Punjab, 1983). After successful experiment, this program was fully implemented in all the districts of Punjab, replacing the conventional extension system but could not be implemented in NWFP due to financial constraints.

Theoretically, the program appeared sound but could not yield the desired results because of its rigidness, top down nature and one way flow of information (World Bank, 2003). The other problems were termination of financial support by the World Bank for T & V
system and emergence of new ideas of decentralization, privatization and cost recovery to enhance the efficiency of extension systems (Alex et al., 2004).

1.2.6 Devolution Plan

Technically speaking, devolution is the shifting of authority from upper to lower tiers of government (Ahmad and Ali, 2003; Luqman et al., 2005; and Lodhi et al., 2006) and it was more crucial in the process to weigh up and decide what was important and how the various issues treated (Deller, 1998). Reforms in the agricultural extension system are generally country specific and a system based on rules works better than system based on negotiations (Dillinger, 1995).

Government of Pakistan announced its devolution plan on August 14, 2001. According to the plan, functions of all service delivery departments including agricultural were transferred from provincial to the district governments. Under new setup each district of Pakistan was managing its agricultural extension activities where the functions of all sister organizations such as water management, fisheries, livestock, soil conservation, forestry, etc; were put under one manager called as Executive District Officer of Agriculture (EDOA). The designation of Extra Assistant Director Agriculture (EADA) had also been changed as District Officer Agriculture (DOA) who now works under the Executive District Officer Agriculture (EDOA). The EDOA reports to the District Coordination Officer (DCO) who is answerable to the elected District Nazim (administrator) whereas the line departments provide the technical support for backstopping and monitoring the agricultural activities across the district. The provincial agriculture extension set-up is controlled by Director General of Agriculture Extension.

1.3 Agricultural Extension in NWFP- Past and Present
The history of agriculture in NWFP goes back in 1910 when an Agricultural Section was established in Tarnab near Peshawar. This section was the part of Revenue Department at that time. In 1935, this agricultural section was upgraded into a full-fledged department known as Agriculture Department. This Department was responsible for Extension as well as Research activities in the province. In 1952, Village Agricultural and Industrial Development Program (V-AID) was launched at national level with the purpose to uplift rural people in the fields of agriculture and industries in NWFP with headquarters at Peshawar. In 1962, an Agriculture College was founded in Peshawar, which was upgraded to the status of university in 1984, now known as NWFP Agricultural University, Peshawar.

During 1970, another Agriculture College was established in D.I. Khan, which is now Agricultural Faculty under Gomal University. Integrated Rural Development programme (IRDP) was started in the year 1972. The basic purpose of this programme was to integrate the entire nation-building department and to work for the betterment of rural people. In 1974–75, Barani Agricultural Development Programme (BADP) was launched. This programme was especially designed for rain-fed areas. In 1978, a new extension program, Training and Visit (T&V) was started in selected districts (Mardan, Buner & D.I. Khan) of NWFP on experimental bases. Though this programme was useful but it could not be implemented in NWFP due to financial constraints. NWFP is still utilizing the conventional model of Agricultural Extension that needs not only improvement but also that could work dynamically. However, an analysis of some salient features of public sector extension at country as well as at provincial level is presented below.

1.4 Public Extension Services in Pakistan

As stated earlier different extension educational programmes were initiated in the country time to time, they had various advantages like

- multipurpose in nature
- raised rural income through improved farming and cottage industry
- created the spirit of self-help, initiatives and cooperatives among rural people
- provided the rural areas with the needed communities services (Waseem, 1982)
- resulted in the uplift of their living standard of rural people (Axinn, 1988)
- increased rate of knowledge diffusion of recommended practices as in the case of T&V programme (Feder et al., 1985)

In spite of all these advantages, these programmes could not give desired results and a stagnant situation was experienced in agricultural production by the government. There were many factors behind this as identified by the Government of Punjab (1978) as

- no effective liaison between research and extension
- multifarious duties assigned to extension agents.
- lack of executive and regular field demonstration programme.
- too vast operational area to give satisfactory coverage.
- unorganized and ineffective visits to farmers.
- preferential treatment to big land owners.
- lack of effective organizational structure and proper programming.
- insufficient pre-service and in-service training facilities.
- no specific evaluation of work.
- unsatisfactory terms and conditions of service, concerning salaries, housing and mobility.

Some other weaknesses as discussed by Anthold, 1994; Ahmad et al., 2000 and Bajwa, 2004 were that it did not reach the bulk of the small farmers due to poorly motivated staff, inadequate operational funds, lack of relevant technology, top-down planning, centralized management, weak accountability systems, and preponderance of non-extension duties.

The inherited weakness and the poor results yield by these extension programs motivated extension program planners to explore the other paradigms for the sake of efficiency, cost effective, and vast coverage of target beneficiaries.

1.5 Paradigm Shift

The poor performance of public sector extension compelled Government of Pakistan to involve more stakeholders to share the responsibilities of diffusion of information to farming communities. The decision was made after 1988, when the National Commission on Agriculture recommended to the government that “the traditional role of the private corporate sector in providing material agricultural inputs and services needs to be strengthened and expanded to cover newly emerging needs such as specialized cultivation operations, spraying, and harvesting and to provide total package services rather than single inputs” (Government of Pakistan, 1988).
“In light of the commission’s recommendations, multinationals such as Ciba-Geigy, Bayer, Hoechst and others began taking part in extension work as well as selling agricultural inputs. Both the sectors have some reservations as public service agents often argue that private companies react only on profit motivations and are unconcerned with addressing social goals. On the other side, the private sector often criticizes the bureaucracy and inefficiency of the public sector, which is seen as unable to respond to the demands of industrial development” (ISNAR.2003).

Today, the involvement of the private sector including nongovernmental organizations (NGOs) in extending farm technologies to farmers is gaining momentum and proved to be better choices as among many funding agencies (Ojha, 1999) which is the reaction of continuous failure of the public sector agricultural extension services to respond to the needs of millions of resource-poor farmers (Ashby et al., 1995; Howel, 1986; Rivera, 1996). Similarly, in a time of growing economic liberalization, the role of profit-making private companies and traders in extending agricultural technologies to farmers is equally important (IFAD, 1995). Some experts predict that private sector extension will play a dominant role in the coming century. However, globally the concept of partnership is growing fast.

1.6 Partnership

The partnership model is now emerging as a possible solution to the problem of effective technology transfer. This is in response to the failure of the supply-driven, top-down approach with excessive state intervention to attain equity with growth. It is assuring that different stakeholders like state, market and NGO’s now seem ready to tackle the problems of the field of agriculture collectively as compared to individual working
Partnerships have been defined as "two or more organizations with complementary areas of expertise committing resources and working together to achieve a mutually beneficial outcome that would have been difficult for each to reach alone" (Gormley, 2001). It means that publicly funded institutions look on partnerships as a means to attract funding rather than as a way to bring about some mutually beneficial goal (Bajramovic et al., 2007).

Conceptually, partnership is an extended form of group dynamics where two or more parties establish relationships and leverage resources to work together with expectation that each of the parties would achieve greater goal than working individually (Morse, 1996, Ojha and Morin, 2000). The main reason out of other for developing partnership is that a sector or an agency cannot possess all desirable characteristics that are required to perform a job comprehensively, effectively and efficiently because of the limited expertise. Therefore, it seems necessary to disburse the sources and resources equally more or less among different actors to achieve better results by utilizing the abilities of these actors (DOETR, 1998; Ojha, 1999; Ojha and Morin 2001). Therefore, organizations develop partnership because they see benefit of working together (McGrath, n.d), not only for themselves but also for society. A numerous benefits of partnership are discussed by number of researchers as greater capacity (Kern, 1998; McGrath, n.d.), cost effectiveness (Bell et al, 1999; DOIT Com, 1996; Morse, 1996; Kern, 1998; ERA, n.d; McGrath n.d.), sustainability (Kern, 1998), addressing complex issue of common concern (Karasoff, 1998), larger area coverage (Kern, 1998; ERA, n.d), educating stakeholders (Karasoff, 1998), reinforcement (Kern, 1998), reaching vulnerable group (Bell et al,
1999; Kern, 1998), sharing and learning (Fehnel, 1995; Castillo, 1997; Kern, 1998),
preventing overlap (Kern, 1998), complementarity (McGrath, n.d.), leveraging scarce
resources (McGrath, n.d.), and creating wealth (Davies et al, 1994), learn new
competence (Fehnel, 1995), provides opportunities to learn about the global need for
change (Fehnel, 1995), makes information available about the methods of accessing and
using resources effectively (Fehnel, 1995), brings different skills and perspectives to a
table (Morse, 1996), provide solutions to user faster by responding quickly to changing
markets and competitive threats (InSync, 1998). Other benefits of partnership include
resources and skill complementarily, improved needs assessment, increased flow of
knowledge, and facilitation for market-led and demand-driven approach (Bell et al, 1999;
World Bank, 1997; World Bank, 1999; Khan et al., 1991; Mungate and Mvududu, 1991;
Shah, 1995; Nugent, 1995 and Gomez, 1998). Some of the benefits of partnership include
increased productivity, reduced poverty, and an improved quality of life. It is especially
because of this mutual advantage that partnership between and among the state, the
private sector, and the civil society has become a subject of development discourse
(Morse, 1996; World Bank, 1997).
1.7 Public-Private Partnership

Public-private partnerships are defined as any collaborative effort between the public and private sectors in which each sector contributes to the planning, resources, and activities needed to accomplish a mutual objective. These partnerships are a constructive means of enhancing the production of goods, services and technologies that would not otherwise be produced by either sector acting alone (Morse, 1996; Ojha and Morin, 2000; and Government of Pakistan, 2006).

The public-private partnership inculcated and produced results in diversified fields of life like health, environment, finance, governance, and agriculture (World Bank 2002; Buse and Walt 2000b). The international health sector, for example, hosts more than 100 public-private partnerships addressing 40 distinct diseases and conditions (IPPPH 2003), where different actors are involved (Ollila 2003; UNF/WEF 2003; Buse and Walt 2000a). Government of NWFP, Department of Agriculture announced in its Agricultural Policy-2005, that public-private partnership would be strengthened throughout the province through creating enabling environment and incentive mechanism for Agriculture and livestock. It was also decided that special attention will be given towards farmers’ access to agricultural technologies on the forum of Farm Services Centers (Government of NWFP, 2005).

1.8 Farm Services Centers (FSCs)

In the province a large number (91%) of farmers are small landholders who are poor, powerless and often pathetic. Their accessibility to institutional credit, technical information and improved production inputs is limited resulting in low return per unit area that increased their miseries (Government of NWFP, 2004). This situation grasps the
attention of the government, World Bank, Asian Development Bank and SDC Inter-Cooperation who emphasized to target these problems. These all efforts are based on 1980’s Agricultural policy which emphasized growers to make their associations at local and provincial levels which may act as a platform for the solution of their farm problems and formulation of policies for the farm sector (ibid).

The predetermined technology packages proved ineffective to increase farm productivity. Therefore, extension services switched towards technology recommendations for specific groups of farmers (Swanson and Samy, 2002) and remarkable success is reported by Hanyani-Mlambo (2002) Zimbabwe where Master Farmer Training Scheme (MFTS) was introduced that was based on the “trickle-down” theory of extension. Impressed with various successful cases of public-private partnerships over the world, Government of NWFP has created effective platforms of Farm Services Centers (FSCs) for Sustainable Agriculture to provide an effective partnership mechanism for mitigating the problems of farming community at their doorsteps. The FSC model experienced by Government of NWFP is the first attempt made in Pakistan. It is established at district level with flexibility of organizing sub-centers at several other points to increase farmer’s accessibility to inputs, technical advice and sharing of experiences. Particularly these centers are conceived with a view to organizing and empowering small farmers at a platform where full technical support of sub-sector of agriculture is available to them at regular intervals on monthly, quarterly, crop season basis, in addition to all important production of inputs, seeds, fertilizer and chemicals for pests and weed control etc. The affairs of centers are totally managed by farmers elected representatives with technical support by Agriculture Department.
Introduction of farm services centers in the province has aroused great interest in the farming community who are voluntarily entering into membership both paying membership fee as well as contribution share for availing inputs facilities. The FSCs concentrate all green sector and other related organizations at one platform to provide services to farming community and planning local development strategies with the full participation of farmers (Government of NWFP, 2004).

The recent Government has taken different steps concerning FSCs. According to short term measures taken under NWFP Agricultural Policy-2005, it has been decided to establish model farm services Centers. The centers will provide an interface among agriculture related departments, NGO,s and farming communities. Service delivery of the farmers will be ensured through one window facility. Moreover, endowment fund will be created, which will be used for the purpose of credit for farmers and efficient running of the centers. Similarly quality and cost effective seed and fertilizer will be provide to farming community at their doorsteps through Farm Services Centers and sub-centers. FSCs are registered with Government under cooperative Act, 1925.

1.9 Need for the Study

Agricultural production can either be increased through extensive or intensive farming. Extensive farming has its own limitations. For example, cultivable land is reducing day by day due to expansion of industries, roads, housing schemes and other infrastructures. Bringing more area under cultivation is not possible due to acute shortage of irrigation water prevailing in the country. Pressure on available land and input resources require an aggressive and innovative farming approach for increasing the productivity to satisfy the need of ever increasing population of Pakistan (Government of Pakistan, 2003). In this scenario, a more valid and sensible proposition for an improved farming seems intensive agriculture meaning thereby increasing yield per unit area. Majority of our farming community is illiterate and unaware of modern techniques. Now question arises that who will educate them to adopt modern agriculture. This is an essential job of an agricultural extension service.

A general weakness of agricultural extension is the low adoption of new agricultural technologies by poor and small farmers. Important issues related to this are many; among
them, the inappropriateness of the technologies to the poor and small farmers’ conditions and the improper methods used to transfer these technologies to them are very critical (Ojha, 1999). However, as the process of developing more appropriate and productive technology gains momentum, it can be expected that the technological problem will not be serious as far as small and poor farmers are concerned (Fliegel, 1993). What is more crucial is the way the technologies are transferred. Evenson (1997) noted that many situation-specific factors impose on the effectiveness of extension programmes has taken place indicate that some of them were perceived to have been less than fully effective (Ojha, 1999).

As the present public extension systems in many countries have not been able to address the issues and concerns of small and poor farmers, a search for new extension models that are more effective, efficient, and responsive to different categories of farmers is essential (Farrington et al, 1993). This essential model might be the public-private partnership, where public and private sector organizations can work together, which may share the resources of one another to accomplish mutual and individual objectives (Ojha, 1999). Pakistan is not immune to these changes in the pace of rapid global development. This is why conventional extension system is under serious criticism all over the world, and the same is true in Pakistan. Government of Pakistan is looking for an efficient and cost effective system, which can meet the emerging needs of farming community.

Government of NWFP took different steps for the improvement of agriculture but all these schemes could not fully succeeded to accelerate the tempo of agricultural development to keep pace for meeting the challenges in the province due to one or other reasons. So far Agricultural Extension has been successful in providing technical advice and transfer of known technology to the farmers to some extent, but the crucial needs of the farmers are material based, such as seed, fertilizers, machinery etc. Problem is further complicated due to top-down planning. In order to address these problems, the only way to develop agriculture of the province is to take grass-root level steps by involving local community with bottom-up planning. Government of NWFP has initiated a new public private partnership extension program in the province during the year 2000. This emerging system is locally called as Farm Services Centers (FSCs) where inputs delivery, market facilitation and exchange of experiences and knowledge are the main activities of the system.

However, there is still information gap about whether this public-private partnership will be beneficial in developing and extending agricultural technologies. This study intends to fill up that information gap by analyzing this public-private partnership by measuring its strengths, weaknesses, opportunities and threats. At the time of planning this study, it was anticipated that the results of the present study will be helpful in designing more flawless program that will ultimately provide better results for farming community of NWFP especially and for Pakistan generally.

1.10 Objectives

1.10.1 General Objective

To analyse paradigm shift from public extension system to public-private partnership extension system in NWFP, Pakistan.
1.10.2 Specific Objectives

- To find out the demographic attributes of the respondents
- To find out the general perception of the respondents regarding the working of public-private partnership
- To analyze strengths and weaknesses of public-private partnership
- To examine opportunities and threats of public-private partnership affecting farming community
- To compile suggestions of the respondents regarding the improvement of the system
- To design a strategy for an improved extension model

1.11 Limitations

Following were the limitations of the study:

- The study was limited to the extent the respondents provided accurate information.
- For gathering meaningful and useful data, a study should have been conducted at least at provincial level. But due to shortage of funds, transportation and overnight stays at far flung areas, this study was limited to two districts of NWFP viz Swabi and Lakki Marwat, which are considered as the representative districts of both the poles of NWFP.
- The study was further limited to 4 randomly selected FSCs in the selected districts in NWFP.
1.12 Assumptions

In designing the study the researcher made several assumptions which are quoted as follows

- It was assumed that combined stakeholders of public extension system and public-private partnership extension system such as member farmers, Agricultural Officers and District Officers would be the best sources of information for conducting the study.
- The conclusion of this study would be applicable to all districts of NWF Province.
- The face to face structured interviews would generate more reliable and efficient data than any other techniques.
- The study will generate more valuable information to improve the public-private partnership Extension system in NWFP.
- Respondents are fair, honest and willing to provide necessary information needed for the study.
- The respondents have the ability to understand the present setup of both public extension and public-private partnership extension systems in a comprehensive way, and are in better position to respond more quickly to the research problem than any other.
- The population of the study was a normal population

The responses of the respondents regarding research question would be normally distributed.
Chapter # 2

REVIEW OF LITERATURE

Review of literature highlights the findings of related studies and eliminates the possibility of un-necessary duplication of efforts. Its function is to “look again” (re+view) at the literature in a related area (Leady, 1989). It involves locating, reading and evaluating reports of research, reports of casual observations and opinion related to the individual’s planned research project. It provides an opportunity to the researcher to know what has been done previously. Until it is learned what others have done and what still remains to be done in the area, it is difficult to plan a sound study. Thus, the review of literature forms the foundation upon which all-future research must be built (Borg and Gall, 1989). The research studies having some bearing upon the study in hand have been briefly reviewed in this chapter under following subheadings.

2.1 Bibliographical information

2.1.1 Farmer Respondents

Chamala (1983) reported that some factors such as age, educational level and years of farming (experience) were considered important in relationship to farming practices, particularly for soil and water conservation practices. Furthermore, he stated that some factors like years of farming (experience), age and social participation are positively and significantly relevant to conservation practices.

Lee and Stewart (1983) explained that ownership had a significant impact on the attitudes of farmers to adopt soil erosion control compared to those who were tenured. They also researched on land ownership and the adoption of minimum tillage. They found that landowners with small holdings have lower minimum tillage adoption rates on cultivated
cropland than do part owners or tenured owners. Thus, the ownership factor influences the attitude of farmers towards adoption of soil erosion control and minimum tillage on cultivated crop areas on their properties.

Khan (1991) reported that among the socio-economic characteristics of the study respondent’s age factor is very important as it influences one’s behaviour and widens the vision of an individual through experience. It is generally believed that with the increase in age the individual becomes mentally mature and takes rational decisions. Therefore, age can be one of the important factors affecting the adoption behavior of respondents.

Lynne et al. (1995) reported that socio-economic factors like age, education and years of farming (experience) influenced the adoption of new technology by the farmers who grow Strawberry in their fields.

Rutatora and Rutachokzibwa (1995) studied that age, educational level, farm size and the farming experience of the farmer are related to adoption decisions, as younger farmers have been found to be more knowledgeable about new practices.

Lewis (1998) identified some socioeconomic characteristics of the farmer respondents and concluded that length of farming experience, age and farm business were positively and significantly related to innovation adoption process about latest agricultural knowledge and techniques.

Quispe (1997) conducted a study in Mexico to identify the characteristics of farmers designated as leaders, followers and non-participants in Sistema Veracruzano de Autogestion Productiva (SIVAP) system of self-managed extension. He reported that all farmers were male. The average age of farmers in three groups was about the same and close to the average age of 48 years from other regions of Mexico. Average number of
years of schooling for the three groups was also about the same and slightly higher than
the other rural regions of Mexico. Literacy ratio was twice as higher for non-participating
farmers as the other two groups, and also higher than the 7% rate for rural areas of
Mexico. Average family size was considerably higher for leaders as compared with the
other two groups. Leaders in both the development districts of the study owned nearly
twice as much land in their farms as followers. Non-participants had the smallest
landholdings.

Lewis (1998) found that length of farming experience, age and farm business are
positively and significantly related to innovation adoption.

Sagna and Holmes (1998) conducted a study in Casamance, Senegal to identify the
characteristics of rice growers in the research area. They reported that 89% of the
respondents were married; As many as 8 out of 10 respondents had never attended the
school. Of those who went to school, 12% did so at the elementary level (1-6 years), and
8% at high school. Average age of the respondents was 48 years. Average number of
formal schools was only 1.03 years. It was observed that younger respondents had more
schooling than older respondents. Respondents between the age of 15 and 30 years had
an average of 2.49 years of formal education, those between 31 and 50 years had a
average of 1.89 years, and those beyond 50 years of age had less than 1.07 years of
formal education.

Ajayi (2001a) evaluated the effectiveness of field days conducted by agricultural trainees
as a technology transfer strategy and also explored the socio-economic characteristics of
farmers. The results of the study showed that a higher proportion of the respondents was
between 21 and 30 years of age (63.5%) than those above thirty years of age. The results
also showed that 23.1% of the farmers were single. A majority had only primary certificates (48.1%), followed by respondents who did not have any formal education (25.0%).

Chizari et al. (2001) studied the demographic characteristics of wheat growers in Lorestan Province, Iran and reported that approximately 50% of the respondents were over 50 years old. Less than 10% were 30 years old or younger. On average wheat growers had 31 years of experience in cultivation of wheat crop. Thirty three percent of growers described themselves as illiterate. Thirty eight percent of respondents had some elementary education. Approximately 21% of them had middle school education, and less than five percent had high school or post secondary education. Eighty percent of the sample lived in rural areas. The remaining 20% lived in urban areas. Nearly all the respondents were married.

AL-Subaiee et al. (2005) studied the Perceptions of extension agents’ about Sustainable Agriculture in the Riyadh Region of Saudi Arabia. The results regarding the demographic profile of respondents reported that the ages of the respondents ranged from 22 to 60. The mean age was 36.19 ($SD = 7.91; N = 124$). The majority (52.4%) of the extension agents were 31 to 40 years old. Approximately two-thirds of the extension agents (64.8%) in the Riyadh Region were born in urban communities. Over three-fourths of the extension agents (78.4%) identified urban communities as their current residence. Over one-half of the extension agents (54%) reported a diploma from a Saudi agricultural institute as their highest education level. Just over one-third of the extension agents (34.9%) had a bachelor’s degree, and 6.3% reported high school or less as their highest level of education. Only 4.8% of extension agents had a master’s degree. Slightly less than one-
third of the extension agents (31%) reported general agriculture as their area of specialization and 27.4% indicated plant production and protection as areas of specialization. Agricultural engineering was the area of specialization for 17.7%. Only 10.5% of the extension agents specialized in the social science. The mean years served in extension were 9.8 ($SD = 7.03; N = 117$). Two-thirds of the extension agents (66.6%) had served in extension from 1 to 11 years while one-third (33.3%) had served in extension for 12 to 32 years.

Cidro and Radhakrishna (2006) studied the demographic profile of hybrid rice farmers in Philippines and reported that majority of the hybrid rice farmers were male (87.2%), married (92.2%) and most of them were middle aged (below 51 years old; 63.1%). About 38.6% of the hybrid rice farmers completed a college education (these include farmers who finished a bachelor’s degree, and some graduate studies), 12% reported completing some college, 16.3% had completed high school education, and 6.6% received a diploma from a vocational school, while 11.7% had completed elementary education. More than one half (56%) of the farmers have been planting rice for more than 16 years.

2.1.2 Extension Field Staff Respondents
Randavy and Vaughn (1991) reported that the average age of the extension workers/agents was 34.6 years and had eight years working experience in agricultural extension.

McCaslin and Mwangi (1994) reported that on average the extension workers were 34.6 years old and had worked for 9.6 years, 85.0% of them were married while 14.5% had never been married, and 0.5% were either divorced or widowed. 77.0% were male, 86.5% had worked for 1-15 years, 41.0% had not been promoted, 50.9% had been
promote once, 6.5% had been promoted twice, 1.0% had been promoted three times and 0.3% had been promoted for 4 times. Their age range from 24-55 years, having 33 years of work experience, and their qualifications ranged from a post secondary agricultural certificate to a master’s degree.

Radhakrishna and Yoder (1996) conducted a study to identify the constraints to technology transfer as perceived by three groups of extension personnel i.e. Assistant Directors of Agriculture (ADA), Assistant Directors of Agriculture with subject matter specialty (ADA-SMS), and Agriculture Officers with subject matter specialty (AO-SMS) in Karnataka state of South India. The findings regarding the demographic profile of the respondents indicated that respondent’s age ranged from 27-57 years with a mean age 49 years and standard deviation 5.41. Eighty six percent of the respondents had a bachelor’s degree, 13% masters and 1% a doctoral degree. The work experience of the respondents ranged from 3-42 years with a mean 24 years and standard deviation 5.99.

Ajayi (2001b) evaluated job characteristics of extension agents (EAs) of Enugu State Experimental Development Project (ADP) and explored the socio-demographic characteristics of extension agents (Eas). He stated that majority (58.03%) of them were between 30-39 years of age. Those who fell within the range of 20-29 years accounted for 15.0%. The remaining 27% were above 40 years. Majority (63.03%) of them were married while the remaining 36.07% were single. He further reported that 15% of them had West African Certificates, while 18.03% had ordinary National Diploma Certificates. About 57% had B.Sc./B. Agric. Certificates, while those who had M.Sc. Certificates accounted for 10%.

Kumba (2002) identified the levels of farmers’ participation in the original empirical agricultural activities. The results were evaluated against Pretty and Vodouhe’s seven
categories describing participation in development projects. It was found that 2/3 of the published material was derived from work in which farmers had apparently played no role at all. Where it was enlisted, the participation by communal farmers in agricultural programs was mostly at the lower levels, while participation by commercial farmers was usually at the higher levels. Dialogue workshops with communal farmers conducted in three major communal farming regions confirmed this finding. The study found sufficient evidence to conclude that the extent and levels of participation by communal farmers in the work of agricultural professionals was far too low and that this situation was probably a contributing factor to persistent crisis in communal agriculture. He suggested that continuous training and orientation programs be organized to bring positive changes in the attitudes of agricultural professionals towards farmers’ effective participation in agricultural development programs.

Lundyn et al. (2006) conducted a study to determine the perceptions of extension personnel regarding internationalizing agricultural extension. A random sample was taken and 72 individuals responded for a 52.6% response rate. Descriptive analysis of the demographic data showed that there were 400 female (55.0%) and 319 male (43.9%) respondents. The mean age of the respondents was 46.2 years old, and 39.21% (n = 278) of the respondents were in the 41-50 years old range. Four hundred and eighty-seven (67.26%) respondents identified their current position within extension as “County Extension Agent or Multi-County Agent.” This represents the majority of respondents (n = 724), followed by respondents who identified their position as Multi-County Director, Multi-County Program Leader, County Director, County Coordinator/Leader, or County Program Leader (22.09%, n = 160). The respondents indicating “Other” (7.45%, n = 54) described their position within extension in a variety of ways. Twenty-two of these (40.74%, n = 22) described their position as support staff or program assistant for an extension program. Others identified unique positions as directors or specialists within their counties, areas, or regions (14.81%, n = 8) while four (7.40%) of these identified themselves as county extension directors.
Chizari et al. (2006) identify and prioritize the training needs of multifunctional extension workers related to sustainability in Isfahan Province, Iran. The target population consisted of all multi-functional extension workers in the province (N = 95). The entire population was surveyed. Therefore, sampling procedures were not utilized and the results are limited to the study population. The data regarding the demographic characteristics of the respondents revealed that Among the 95 respondents, 30% were over 40 years of age, 41.1% were between 30 and 39 years of age and 28.9% were between 20 and 29. Eighty-two percent had an agricultural background and the remaining 18% did not. Of the 95 respondents, 65% had a high school diploma and 32.5% had some college training and 2.5% of the respondents had educational levels below that of a high school diploma. Thirty-five percent of respondents were from rural villages and 65% were from urban areas. A total of 68.7% of the respondents had more than 10 years of work experience and at least 5 years of residence in rural areas. The remaining 31.3% of the responding extension workers had less than 10 years of work experience and had resided in a rural area for less than five years.

Cidro and Radhakrishna (2007) studied the demographic profile of extension agents in Philippines and reported that a majority of extension agents (68%) were between 41 to 55 years old. Twenty-one percent were in the age group 19 to 40 years, while 11% were in the age group of 56 to 65 years. A little over one half (54.5%) of the extension agents were male, while 45.5% were female. All extension agents had completed a bachelor’s degree and approximately 10% had completed master’s degree. About 19% of the extension agents had taken some credits leading to master’s degree. Majority of the
extension agents on average had 16 years of extension service (58%). A substantial number of extension agents (90%) were married.

Dlamini and Mmemo (2007) studied the demographic characteristics of the respondents while determine the factors perceived to influence supervision effectiveness of senior secondary school heads of agriculture department in Botswana. Findings of the study revealed that about 72% of the respondents were males, and 63% were married. The mean age was 43 years ($SD = 5.86$) and 83% held the bachelor’s degree, with 54% trained within the country. About 59% of the respondents took a course in supervision, 70% reported to have taken a course on management, and 67% took a course in administration. The salary level of the respondents ranged between US$21,410 and US$23,638 per annum. A small number of the respondents or 6% and 11%, had mothers and father, respectively, in supervisory positions. About 70% of the respondents were teaching in rural schools. On average, respondents stayed about 5 km ($SD = 17.60$) away from school. On average, respondents had 19 years ($SD = 5.23$) teaching experience, had work experience of 11 years ($SD = 3.94$) prior to current position, and have been in current position for 6 years ($SD = 4.57$).

Hoque and Usami (2007) determined the perceptions of block supervisors on courses conducted in agricultural extension training at the Department of Agricultural Extension (DAE) in Bangladesh. Data for this study were collected from 102 block supervisors using designed standard questionnaire. The data regarding the demographic characteristics of the respondents reported that the average age of the respondents was 43.87 years. The majority of the respondents (52%) belonged to middle age category, and only 5% belonged to young age category. The respondents had on average 23 years of
service tenure as block supervisor. The majority of the respondents (46%) had a Higher Secondary Certificate (HSC) degree while 38% had a Secondary School Certificate (SSC) degree with Agricultural Diploma as an associate degree. Only 16% of the respondents had a Bachelor of Science degree with Agricultural Diploma as an associate degree.

2.2 Public Sector Extension in the World

Hawkins et al. (1982) suggested that there are three objectives of agriculture extension: 1) primary extension goals including: increasing living levels, develop commercial orientation, increase evaluative ability, increase production, increase productivity, and increase innovativeness; 2) secondary extension goals including: meeting client’s needs, serving as change agency and understanding client; and 3) tertiary extension goals including: adoption of innovations, using methods of skillfully and avoiding conflicts. These goals can only be achieved in conditions that include a good atmosphere for running extension services, good capability of Agriculture Extension Workers (AEWs) good facilities and farmers having a good level of education, own land, cosmopolitan, and business oriented.

Mardikanto (1982) stated that agricultural extension is a kind of non-formal education which is given to farmers and their families, who live in villages. He further stated that agricultural extension has both short term and long term objectives. The long term objective is that of helping farmers to choose an appropriate technology of practice which can lead to better farming, better business, and better living. The short term objectives are for farmers to change their attitudes, knowledge and skills. Farmer will not reach a
satisfactory level of farming, business and living unless they have reached these short term objectives.

Roling (1986) interpreted the range of extension functions in terms of two traditions in extension - technical innovation (TI), and human resource development (HRD). From his perspective, most of the world’s extension agencies are engaged in pure TI financed by tax revenues to make the production of food, raw materials, and export commodities as effective and efficient as possible. The focus of HRD is on rural people themselves and on the social systems in which they function, and deals with such processes as community and leadership development, building institutions, and farmer mobilization and organization.

Swanson et al. (1990) reported that FAO surveyed the current status of agricultural extension in 113 countries, contacting 207 agricultural extension organizations that were considered to be generally representative of agricultural extension systems throughout the world. Eighty-six percent of these agencies were funded by a ministry of agriculture or similar government agency. Based on this survey, FAO estimated that in 1988, $6,000 million were spent on public agricultural extension agencies worldwide, representing an average expenditure per extension worker of $8,522. Annual per farmer spending on extension services ranged from $2 to 3 in low-income countries to $65 in high-income countries.

Amanor and Farrington (1991) reported that in developing countries, bureaucratic inefficiency and poor program design and implementation have led to poor performance and incoherent links with client farmers and the research sector. Support for extension declined in the 1980s and donors were unwilling to fund large-scale public-sector
recurrent expenditures, which led to further under financing, staffing shortages, and contraction of extension services.

Rivera (1991) noted that public extension services throughout the world reached “a critical turning point” by the 1980. The expenditures associated with the implementation of agriculture extension services were very high but their results were generally below than the expectations. The optimism accompanied new extension services after the World War II has been replaced by concerns regarding (a) the efficiency and financial viability of public extension services, (b) the appropriateness of advocating one extension model for what are often markedly dissimilar national and regional situations, and (c) the assumptions accompanying agriculture extension programmes, and linkage between public and private extension initiatives.

Umali and Schwartz (1994) reported that about 95 percent of extension staff work in public agricultural extension systems, and 90 percent of extension workers in the world are located in developing countries, over 70 percent in Asia alone. Extension coverage (the ratio of extension personnel to farmer population) by public extension services in developing countries varies from 1:1,800 to 1:3,000. Developed countries of Europe, North America, and Asia have ratios averaging about 1:400.

Van den Ban and Hawkins (1996) arrived at a concept of extension that seem to synthesize diverse perspectives into five goals - transferring knowledge from researchers to farmers; advising farmers in their decision-making; educating farmers to be able to make similar decisions in future; enabling farmers to clarify their own goals and possibilities and to realize them; and stimulating desirable agricultural developments (rural guidance).
Ferreira (1997) reported that in developing countries extension is driven by ‘top down’ approaches and based on the Government interest not on farmer’s interest. Due to which two main problems arise, namely: farmer’s experience and knowledge are not included in extension approaches and misunderstandings occur between farmers, extension workers and personnel from agriculture research.

Rivera et al. (1997) reported that public sector extension system in Egypt was in a transition phase characterized by decentralization of programming decisions and operations, and a shift from agricultural performance orientation to a more comprehensive, community development perceptive.

Zijp (1998) reported that a system in Agriculture Extension include all public and private institutions that transfer, mobilize, and educate rural people, as distinct from a service or single institution that traditionally provided advice only.

Agbamu and Van den Ban (2000) studied agricultural research extension linkage systems from seven countries around the world and reported that policy changes, institutional reorganization, and the strengthening of organizations are required to enhance research–extension linkages in developing countries. They also provided a theoretical framework through which global agricultural research–extension systems can be analyzed in order to highlight specific ways in which research–extension linkages can be improved.

Black (2000) conducted a research study to determine the strengths and limitations of four major strategies or models in agricultural extension: linear ‘top-down’ transfer of technology; participatory ‘bottom-up’ approaches; one-to-one advice or information exchange; and formal or structured education and training. He concluded that no single model or strategy was likely to be sufficient by itself. Despite criticisms of linear
technology transfer models, there was still a need for access to reliable scientific information, just as there was a need to provide for active participation by farmers in research and development processes. One-to-one exchange of information and advice, whether from farmer to farmer or from professional adviser to farmer (and vice versa), will continue to be important. So too will be the lifting of levels of formal education and training among farmers. New information technologies will facilitate some forms of education, training and information exchange, but will need to be supplemented by other extension strategies.

Evenson (2000) reported that agricultural extension programs had built in most of the world’s economies. A substantial number of economic impact studies evaluating the contributions of extension program to increase farm productivity and farm incomes and to consumer welfare have been undertaken in recent years. He further concluded that most of the estimates were consistent with actual economic growth experiences.

Feder et al. (2000) reported that Public Extension funding and delivery face difficulties inherent in the extension mandate like magnitude of the task; dependence on wider policy and other agency functions; problems establishing the cause and effect necessary to obtain political and financial support; liability for public service functions beyond agricultural knowledge and information transfer; fiscal sustainability; and interaction with knowledge generation. They further identified generic problems inherent in extension functions - many aspects of the services performed by extension are public goods or toll goods, require collective action, and often involve government. They presented eight generic problems: scale and complexity; dependence of extension on the wider policy, environment and other agency functions; inability to trace cause and effect;
commitment and political support; accountability; liability to public service functions beyond agricultural knowledge and information transfer; operating resources and fiscal sustainability; and interaction with knowledge generation.

Ngomane (2000) reported that more than 500,000 African smallholder farmers engage in some agricultural activity for basic survival purposes. They cannot afford private extension services, and therefore, rely on public extension support services. But, the public sector agricultural extension system in its current status is not geared to satisfy the needs of the resource-poor smallholder farmers, and that the system has to be transformed to help smallholder farmers to break away from the bondage of dependency and poverty.

Murgai et al. (2001) conducted a research study to determine the long-term productivity and sustainability of irrigated agriculture in the Indian and Pakistani Punjab by measuring trends in total factor productivity for production systems in both states since the advent of the Green Revolution. These measurements over time and across systems have resulted in three major findings. First, there were wide spatial and temporal variations between the two Punjabs. Although output growth and crop yields were much higher in the Indian Punjab, productivity growth was higher by only a small margin. Moreover, the lowest growth in productivity took place during the initial Green Revolution period (as opposed to the later intensification and post–Green Revolution periods) and in the wheat-rice system in both states. The time lag between adoption of Green Revolution technologies and realization of productivity gains is related to learning-induced efficiency gains, better utilization of capital investments over time, and problems with the standard methods of productivity measurement that downwardly bias estimates, particularly during the Green Revolution period. Second, input growth accounted for most of the output growth in both
Punjabs during the period under study. Third, intensification, especially in the wheat-rice system, resulted in resource degradation in both Punjabs. These findings imply the need for policies that promote agricultural productivity and sustainability through public investments in agricultural research and extension to reduce resource degradation by decreasing or eliminating subsidies that encourage intensification of inputs.

Ngomane et al. (2002) examined the challenges faced by public sector agricultural extension system in the north province of South Africa. Challenges facing public sector agricultural extension in the Northern Province of South Africa were rooted in the history of African smallholder farming, institutional arrangements, structural adjustment programs, the policy framework, new clients, and the reorientation of the agricultural extension system. Statutorily mandated to serve the poor subsistence farmers, the public sector extension system has to be transformed to meet not only the current policy framework, but to adequately serve the “emerging/commercial” farmers. Structural adjustment programs and their implementation continuously determine the delivery capacity of the system. Meanwhile, the morale of stakeholders was declining in this era of transformation. They suggested that the public sector extension service is overwhelmed with the new changes. However, there were educational lessons embedded in the province’s “farmer first” principle, implemented through decentralization of management authority, application of participatory extension approaches, and strengthening institutional capacity of African smallholder farmer organizations.

Khan (2006) studied the role of agricultural extension in reducing rural poverty by increasing their farm productivity. He stated that agricultural extension serves as a bridge between the agricultural research scientists and the potential users of research findings.
The main objective of it was helping research scientists to design and undertake needs and problems based research and at the same time encourages and enables farmers and others to adopt new scientific knowledge and useful research results/agricultural technologies for increasing agricultural production leading to enhanced farm income and better quality of life for all in the rural area. He further stated that rural people especially farmers, were at the heart of the knowledge triangle and education, research and extension were located at the periphery to provide services to the farmers and other members of the rural community.

Ortiz (2006) reported that the Government has played an important role in the creation and dissemination of agricultural information. Unfortunately, there has been a lack of a guiding policy, particularly during the last two decades when approaches related to sustainable agriculture first emerged. More recently, institutions have begun to interact and negotiate alliances related to potato pest management. Evidence suggests that inter-institutional cooperation will be the main form of intervention in the coming years, although institutions still have to learn how to interact and use their comparative advantages in a synergic way.

Qamar (2006) stated that general intuition about public sector extension is that, large number of staff; consuming substantial government budget yet neither too efficient nor too effective; top-down organization and operations; farmers complain because extension agents do not visit them often enough; and low adoption of improved technologies owing to poor extension services. He also described that in many developing countries, institutions and services are gradually being transferred to the private sector. The main argument is that public agricultural extension systems have failed or are at best
unsatisfactory. Another equally strong argument is that since farmers profit from extension advice, and the government budgets for public services are sliding, the cost of delivering this advice should be recovered by charging a fee from the clientele. One more argument in favor of privatizing extension services is that as the private sector is actively involved in selling farm inputs and machinery, they should also advise farmers on agricultural matters as they are supposed to be more efficient than the public sector. Another argument in favor of privatization is that healthy competition among service providers will lead to better quality and less cost.

2.3 Public and Private Sector Extension

UNDP (1991) described the role of private sector in technology transfer to the ultimate users. The bureau discussed their role in four major categories: (1) input supply systems (2) private consultants (3) client based extension systems and (4) farmer control organizations. The main characteristics of input supply system were: offered technical advice about the proper use of agricultural inputs (agrochemical seed and equipment); cost of technical assistance included in the purchase price of an input with farming community bearing the cost directly; direct technical assistance provided to farmers by sales personnel who were trained and supported by technical specialists at company headquarters; technical support to farmers generally limited to advice on the purchased input; not extended to the broader range of production and management problems; and the input supply companies use individual, group and mass media contact methods to generate farmer awareness, interest and use of improved technology; however, these private extension activities generally better funded than public extension activities. Private consultants characterized as private individuals or firms who were responsible for
providing specialized technical and managerial advice and services on a fee basis; generally limited to high value cash or export crops grown by specialized commercial producers; frequently they were former or current public sector research or extension personnel who provide these specialized services; and regular farm visit (weekly, fortnightly or monthly) to provide technical and management services on immediate call to diagnose and treat specific problems. The main characteristics of client-based extension systems were: generally operated by Non-governmental organizations (NGOs) and Private voluntary organizations (PVOs) to serve the specific target group such as women farmers, an ethnic minority, or another disadvantaged group; concentrated on problem-oriented “self help” approaches that emphasise participatory methods; majority of the personnel highly committed to their clientele; open and flexible in finding solutions to clientele problems; most systems lacking strong technical focus, but groups get organized to access resources and services; and depend largely on privately contributed or funded by some donor agencies.

Reynay et al. (1996) conducted a research study to examine the long term effectiveness of Mennonite Central Committee’s (MCC) extension work with subsistence farmers in Bangladesh and the limitations and benefits of linking this work with public extension services. One hundred and two farmers who received extension support from MCC during the period 1983 to 1986 were sampled. The findings of the study indicated that MCC’s past involvement with these farmers is continuing to have a positive economic impact. High correlations were found between MCC extended production technologies and their contributions to net income levels. However, income from MCC extended technologies has declined following MCC’s withdrawal. Farmers highlighted the need for
continued technical assistance and access to good quality seed. It was concluded that extension activities of NGOs can be linked with government extension services. Possible opportunities to realize such linkages were also indicated.

Anderson and Crowder (2000) described the re-organization of the extension system and evolved four broad forms of delivery systems: (i) Public delivery and public finance which essentially comprises the traditional government agricultural extension that continues to persist although with greatly diminished outreach and constrained by a lack of sufficient funding; (ii) Public delivery and private finance whereby government staff is contracted by private agencies to deliver extension services; (iii) Private delivery and private finance whereby commercial entities provide their suppliers with the extension services required to improve their technical efficiency. This mode of delivery is prevalent in commodity out-grower schemes and highly commercialized high-value agriculture; and (iv) Private delivery and public finance which entails the outsourcing of responsibility for extension delivery to private sector providers such as NGOs and CBOs.

FAO (2002) reported that in Zimbabwe, there were numerous extension service providers, including: public-funded institutions, non-governmental organizations (NGOs), commodity processors, farmers’ associations, and private agrochemical input suppliers. Smallholder farmers rely heavily on public extension systems, which were experiencing increasing operational difficulties as a result of dwindling resources. On the other hand, NGOs had better financial resources, but service only small clienteles and deal with only limited numbers of commodities. Various grassroots-level extension providers operate with specific objectives and outputs that were of little significance to productivity and sustainable agricultural development.
Prathap and Ponnusamy (2006) studies the relative effectiveness of four mass media channels (radio, television, newspaper, and Internet) on knowledge gain was conducted among 144 rural women belonging to self-help groups of three villages in Tamil Nadu, India. The selected technology, rabbit farming, was developed into parallel messages and was delivered through these channels to assess the knowledge gain. All the respondents (100%) had gained “adequate” knowledge after exposure to television, newspaper and Internet, while 97% of those exposed to radio had gained adequate knowledge after exposure. Traditional media were found to have a slight edge over new media in terms of influencing knowledge gain. Television was found to be the most effective treatment, followed by newspaper, Internet and radio.

Qamar (2006) reported that extension was going through major transformation. Both governments and donors want public extension systems to be lean, cost-effective and to play the role of a facilitator. The financing of extension and delivery of extension advice were being treated as separate functions, and actors such as private companies, NGOs, private advisors, civil society institutions, and producers’ organizations were being welcomed to the arena of extension. Flow and exchange of information among stakeholders had been facilitated by giant leaps in information technology. Demand-driven extension was drawing favor over supply-driven services. Men and women clientele were being encouraged to have a bigger say in decision making and hold extension workers accountable if they do not deliver. Extension knowledge was being termed not only as public good but also as private good. The needed new role of government in pluralistic extension system, privatized extension and in encouraging sustainable development was being recognized. Expectations from extension were rising as the issues like food insecurity, rural poverty and post-disaster situations go higher on the agenda of world development and as the influences of globalization, decentralization and market liberalization gradually and eventually descend on the rural households. Asia was the region that made headlines in the world during 1960s owing to its globally appreciated Green Revolution, and again when it pulled itself out of recent economic
crisis sooner than expected. The practice of extension in this region of great agricultural and food production success traditions, should not continue to be old fashioned because it was not business as usual any more. The transformation of extension demands political and fiscal commitment from politicians and policy-makers, so that this noble profession could serve the emerging educational needs of rural and farming populations a lot better than in the past. However, it was of great importance that lessons be learned from recent and ongoing extension reforms and applied to the designing of future reform measures in order to avoid repeating the known negative experiences.

2.4 Constraints of Public Sector Extension

Ruben (1992) reported that in Philippine small-scale farmers were particularly concerned about post harvest and marketing activities. The lack of storage facilities forces farmers to sell their produce without delay at a lower price, especially if there was a surplus in the market, the price of both fertilizers and pesticides had been rising, and farmers had begun to seek cheaper alternatives. The lack of access to a soil analysis service is a serious constraint. Poor farmers blindly follow the general recommendations set by the Department of Agriculture, and apply fertilizer without any regard to the level of nutrients already present in the soil. In view of the above said problems he found that national extension system could not facilitate the farmers in solving their problems because farmers urgently need more technical information about their problems related to crops and livestock.

Singh and Laharia (1992) identified constraints effecting the transfer and adoption of sugarcane technology. One of the major constraints identified was lack of feedback from farmers to research workers followed by ineffective liaison with field staff, housing
facilities for extension workers, incentives for extension work, availability of necessary inputs, complexity of new technologies, and risky nature of new technologies. They concluded that these constraints were beyond the control of farmers and suggested that Government should take appropriate measures to overcome these problems.

Farrington (1994) stated that agricultural extension found itself in the midst of significant changes and uncertainty. Processes of change have been underway for some time but in many developing countries these have been accelerated by structural adjustment reforms aimed at reducing public sector spending. An environment of declining government budgets combined with declining donor interest has led to significant cuts in public extension services.

Kumuk and Crowder (1996) stated that the Training and Visit (T&V) extension approach has been criticized for its excessive emphasis on message transfer. These contrasts sharply with an extension approach that helps farmers develop their own skills for acquiring and analyzing information. These contrasting approaches have important implications for how extension is organized and how farmers participate in the process. This article discusses an effort to re-orient the extension system in Turkey according to the principles of T&V extension and how T&V extension could be modified to fit Turkish conditions using a more participatory team approach to working with farmers.

Van den Ban and Hawkins (1996) reported that agriculture extension in developing countries face problems such as 1) lack of appropriate technology available to extend; 2) absence of clear linkages between extension organizations and agriculture research institutions; 3) limited training by extension workers in practical technology, extension methods and communication skills; 4) insufficient transport facility to reach to the farming community; 5) lack of visual aids by extension workers for essential teaching of farmers with low levels of education; 6) excessive tasks of extension worker besides extension work; 7) lack of communication media such as bulletins, demonstration materials, and broachers by extension workers.

Radhakrishna and Yoder (1996) conducted a study to identify the constraints to technology transfer as perceived by three groups of extension personnel i.e. Assistant Directors of Agriculture (ADA), Assistant Directors of Agriculture with subject matter specialty (ADA-SMS), and Agriculture Officers with subject matter specialty (AO-SMS) in Karnataka state of South India. A total of 244 extension personnel responded to a mail
survey. Overall, extension personnel perceived lack of funds to conduct timely research, inadequate transportation, resources of farmers, cost of inputs and availability of credit as major constraints in technology. Extension personnel working in dry land agriculture perceived several technology transfer statements as constraints more so than extension personnel working in irrigated agriculture.

Sharma and Murthy (1999) found some limitations in public sector extension services. They reported that in delivering agricultural knowledge to the ultimate users public sector extension face problems. Traditional extension was expensive because it cost a lot of money to produce and print extension massages broachers; it was very time consuming process; In traditional extension the quality of messages get eroded as it passes through different layers and channels when it reaches to the farmers; poor communication capacity of existing extension system and there was little use of up-to-date communications technology, including the use of electronic communication to improve feedback and technical support between research and extension personnel, and to facilitate the administrative communication and the last drawback of traditional extension system was that it was very limited, and the challenges in terms of reaching all the villages and the farmers was becoming more and more difficult to meet.

Pezeshki-Raad et al. (2001) examined the perceptions of Iranian extension authorities regarding the seriousness (severity) and importance (priority) of problems facing agricultural extension in Iran. It used descriptive survey research methodology. Data were collected through a mail survey of Heads of Agricultural Organizations and Extension Directors in 29 provinces of Iran. Descriptive statistics were used to analyze data. Finding showed that, overall, lack of extension training, lack of linkage between
extension and other institutions, lack of technology, lack of mobility, and lack of technical training were perceived to be the most serious problems as well as the problems with the highest priority. Although not exactly in the same order, heads of agricultural organizations and extension authorities perceived the same five of the eight problem areas to be the more serious and important problems facing extension in Iran. The agreement between these two types of respondents (Heads of Agricultural Organizations and Extension Directors) regarding which problems are most serious/important and the disagreement between the two groups regarding the order of seriousness/importance of the identified problems have implications for determining which problems the Iranian extension service needs to focus on.

2.5 Criticism on Public Sector Extension

Qamar (2002) reported that a serious criticism of public agricultural extension services of almost all developing countries has become a global force of change. The services have been criticized on several grounds such as being supply-driven, technically weak, patronizing only big farmers, insufficient coverage of contacts with farmers, practicing top-down extension approach, etc. Some of the criticism is genuine while some has been levied without understanding the underlying causes which are beyond the control of extension workers, such as poor pre-service education, little in-service training, burden of non-extension tasks, low salaries, low status, lack of opportunities for professional career development in comparison with other agricultural services, and needed coverage of a very large number of farmers scattered over a very large area without having adequate operational budget or transportation facilities. Not surprisingly, the extension services have usually become the first victim of any major economic reform. For example, the number of public extension workers is drastically reduced due to structural adjustment measures, recommended by major donors. In addition, during the process of decentralization, extension services are marginalized and downgraded. Also, the remote areas, which extension agents rarely visit due to lack of transportation facilities, are increasingly being covered by NGOs. The global criticism has called for alternatives such as privatization of extension services, inclusion of other partners in extension delivery, contracting-out of extension work, and farmer-to-farmer extension modality.

Saravanan and Gowda (2003) reported that the performance of public extension service was unsatisfactory. They mentioned that the major problems, which, were being faced by farmers in India farmers, include: Farm inputs, i.e. seeds, fertilizers and plant protection
chemicals; seasonal production; Market information and intelligence; Storage and post harvest processing; and government policy support. In the existing situation, Multi National Corporations (MNCs), agri-business firms and processing industries are entering in to agricultural sector in a big way for contract farming in India. Contract farming refers to contractual arrangements between farmers and companies whether oral or written, specifying one or more conditions of production and or marketing of an agricultural product. But contract farming has its own limitations. These include Creates regional and socio-economic imbalance; farmers decision-making role is likely to be reduced; insecurity and problems, i.e. high cost of transportation, delays in payment, etc.; unsustainable farm practices; and food security of the nation will be at stake due to more focus on non-cereal crops.

Davidson (2006) stated that agricultural extension is in crisis throughout the world. The trend towards privatization and downsizing of the public sector, including its agricultural extension services, raises many questions about whether or not agricultural extension – in any form – is in fact obsolete. Agricultural extension is widely regarded as playing an important role in improving agricultural systems worldwide and its provision has been seen for many years as a principle responsibility of the state. However, the general feeling is now that for offering services to farmers and adequately addressing their needs, these administrations are too inflexible and unresponsive, with the high cost brining insufficient benefit. He added that the privatization or commercialization of extension may be useful but this will require tested strategies that are location specific, multi-dimensional, integrated, holistic, and, most importantly, flexible if resource-poorer farmers are to benefit from these changes. He further stated that a revitalization of
‘traditional extension’ such as the T and V system is unlikely and ill-advised, though we should not favor the emergence of an elitist pluralism whereby only resource rich farmers are assured of access to information and innovative practices. He suggested that there is a middle approach in line with what terms “flexible specialization” with an emphasis on segmentation, equity, and integration. This approach entails vertical decentralization using flexible resources, including adaptable and appropriate technologies and education. Unquestionably, an integrated multi-disciplinary holistic approach to effective agricultural extension is laudable but without linkages to substantive issues of who benefits and who does not, the state of the physical environment, as well as what ought to be (normative values), the cycle of despair will continue.

Sharma (2006) reported that quick dissemination of agricultural technology from agricultural research stations to the farmers in the field, and reporting of farmers' feedback to the research stations was one of the critical inputs in transfer of agricultural technology. The extension personnel during last half century disseminated technological messages to the farmers. The existing approach has not been able to reach a majority of farmers, spread across the country. There exist a considerable gap between the actors of agriculture department. This gap remains a challenge for the extension systems even today. This problem is severe in developing countries in majority of the developing countries, where the number of farmers is very large and the geography is more varied. During the current era of globalization, it is possible to find a solution to this situation by using the potential of information and communication technologies to meet the location specific information needs of the farmers. Further, he reported that generally the
communities residing in rural areas require a huge information support to improve the livelihoods in the Asian countries.

Wadduwage (2006) reported that public extension system also criticized in Sri Lanka, because of factors included: System was too rigid a system such as fixed visit schedule to end users which could not be adhered to; contact farmers were not passing the information to the follower farmers; extension worker had to do non-extension functions; extension tools were too expensive and a large number of extension workers were required; use of mass media for extension was very low; emphasis on contact farmers neglected the natural groups in the farming community; and top down approach, instead of, bottom up approach of extension.

2.6 Private Sector Extension in the World

UNDP (1991) reported that in recent years, public support for extension had decreased with the transformation of the agricultural sector, the corresponding decline in the size of the farm population, and the continuing problem of costly farm surpluses. The result was that, in some European countries, the responsibility for extension has been shifted from the ministry of agriculture to the general farm organizations themselves. These organizations were relatively strong in most industrially developed countries. During the past century, as extension assisted farmers to become better organized and more productive, these organizations in turn provided political support for continued government support of extension. Through this synergistic relationship, farm organizations have had an important, continuing input into the priorities of public extension, as well as an impact on its performance.
Schwartz (1994) concluded that extension by commercial companies had commonly been associated with input supply and with their ability to capture part of the benefits of extension through input or output markets. Whilst there were notable examples in which private companies (usually processors/marketers of single commodities) had worked extensively with smallholders, economic factors clearly orient them towards medium/large-scale farmers in areas of good infrastructure. He stated that farmers' associations (FAs) had been widely promoted in the North, their strengths in developing countries are usually associated with marketed commodities, though in some cases they provide service for a range of crops on an area basis. He further reported that "mixed" extension systems are becoming increasingly common, in which government and NGOs take on extension functions for client groups and geographical areas which have been disregarded by private commercial organisations. Given these differing circumstances, direct comparisons of efficiency between public and private extension are hazardous.

Rivera et al. (1997) reported that private sector extension in Egypt was conducted by private companies that provide information and advisory services to corporate farms, and consultants who sell their services to large estates, and undertake extension and farm management activities. In addition, large private producers of high value crops such as fruits and vegetables often have their own staff of horticulturists, agronomists and engineers. Often these large producers had production constraints with small producers, and use extension specialists to work with these producers, who sometimes may be large in number. They further reported that few non-profit, non-governmental organizations (NGOs) were also committed to rural development services and none of them was involved in supplementing of complementing the work of public sector in extension.
There was a serious gap which needs to be considered by NGOs concerned with agricultural, rural and human resource development.

Quispe (1997) conducted a study entitled “towards privatization of agricultural extension: a case study of the Veracruz Self-Management System of production, Mexico” and reported that extension privatization strategy was not applied completely of effectively. Although farmers wanted to participate in the programme, most of the traditional drawbacks, including performance of extension workers, scarce resources and lack of support to carry out extension activities, and weaknesses in leader follower relationships, inhibited farmer participation and accomplishment of the goals and objectives of the programmes.

Umali-Deininger (1997) examined the roles of the public and private sectors in agricultural extension. Extension services are classified according to their economic characteristics to identify areas where opportunities for private (for-profit and nonprofit) participation will arise. He found that commercialization of farm operations gives rise to demand for specialized client and location-specific extension services that can be provided by private for-profit firms, although the main buyers will likely be market-oriented medium and large farmers. Because of market failures, some types of extension services will require public funding-although not necessarily public delivery. A critical government role in a pluralistic extension system would be to provide the appropriate regulatory framework to ensure fair competition and maintain quality standards.

Biggs and Smith (1998) highlighted the fact that successful technology development is a very complex process indeed; it often results from the “nuances” of personal, professional and institutional relationships which change and evolve (often rapidly) over
time; and that these (often institutional) changes take place in response to new technological needs (or opportunities) as well as political and economic circumstances. Furthermore, it is these “nuances”, often only identifiable through detailed case histories, which are so difficult to capture in neo-classical analysis of the innovation process and the relationship between research investments and impacts on the poor. Clearly partnerships of various types are important in this view of the way innovation and technology development actually works.

Rivera (1998) stated that agricultural extension around the world was experiencing structural reforms as countries make the transition from centralized to decentralized and privatized agricultural extension systems. He conducted a study in Uzbekistan and reported that an innovative extension system was poised for development in the country: the Rural Business Advisory Services (RBAS). The RBAS would foster both agricultural information transfer and business advice. The innovations embodied in the system concept and action plan differ from other extension system innovations. This innovation system promises to integrate farmers and associated agribusiness workers on collective farms into a market oriented agricultural economy. To succeed, however, the system will require considerable government commitment, institutional leadership, and staff interest to develop fully this innovative extension variant.

Arya (1999) examined the mutual practical needs between Non-Governmental Organizations (NGOs) and government organizations towards each other in India. For NGOs, these include the need to access technical or managerial resources, to gain legitimacy or recognition, to promote greater accountability and transparency and to promote reform in public systems. Government agencies on the other hand work with
NGOs to enhance people’s participation in their programmes, to extend coverage of programmes to areas and groups that are poorly served by government staff, to test and replicate innovative approaches and to achieve greater cost effectiveness. He further explored that how government and NGOs converge on a number of development objectives that have become social and political imperatives, divide roles along expected lines and prevailing notions of each other’s capacities, but still end up with problems in certain areas.

Hall et al. (2000) suggested that despite the policy focus on public sector research institutes with its hierarchical arrangements, more frequently innovation is taking place at the interface of research and production “institutions”. This suggests that a wider set of actors and institutions is involved in the innovation process. It is concluded that the concept of “national systems of innovation”, which views these different actors as nodes in an integrated innovation system, may provide a useful framework for understanding the role and performance of partnerships in the context of technology development. Only by developing a clear understanding of the theoretical basis for the institutional linkages that are emerging can the innovation potential of partnerships be focused on the poor.

Marsh and Pannell (2000) reported that in most states of Australia, agricultural extension policies and practices has increasingly been based on considerations of private/public goods, user pays and cost recovery. In addition, the delivery of extension had been strongly influenced by changing administrative structures and a change in the paradigm within which the extension community operates. These changes had major impacts, including more extension being delivered by the private sector. There were positive aspects to the changes and, for some issues, they are appropriate. However, we had a
number of reservations, particularly about the effectiveness of current extension systems in assisting the adoption of complex environmental and farming system technologies.

Al-Rimawi and Al-Karablieh (2001) studied the role of private firms in extension in Jordan, and the association between their characteristics and the methods of extension they use. Two third of firms were either partnerships or corporations, and half of them were organized in a processional association. Their technical staff was many times more than the staff of the public sector extension. Low percentage of firms arranged for formal in-service training for their technical staffs. Firms mostly use multimedia and promotional approaches in extension methods. Many firms have experimental sites or links with local or international firms. Extension partnership was imperative between the public and private sectors to develop differentiated programmes for serving its diversity of farmer’s needs. Merging firms into corporations and strengthening their professional would enable firms to upgrade their services, experimental work, and in-service training.

de Haan et al. (2001) reported that private consulting or advisory services generally address needs of commercial farmers. Developing private services for small-scale farmers often necessitates public investment to develop capacities of service providers and establish markets for services. Veterinarians and para-vets have pioneered private service provision in some countries and, in crop agriculture, pest control services present the same opportunities for private service delivery.

Saravanan (2001) described that concept about the privatization of extension services emphasizes three aspects (1) involvement of extension personnel from private agency/organization; (2) clients were expected to pay the service fee (private extension may not expect fee from clients, e.g. NGOs) and (3) act as supplementary or alternative to public
extension service. Moreover he described that reasons behind the Privatization including: Financial Burden on Government; disappointing Performance of Public Extension Service; commercialization of Agriculture.

Al-Rimawi and Al-Karablieh (2002) concluded that private firms were the key players in the multi-organizational system of extension in Jordan. The independence test and probit model were employed to identify the factors that influence private firms to cooperate with public research and extension. Willingness to cooperate in extension and research was found to be associated, but firms were found to be more willing to cooperate with public research than extension. Membership in the trade association, having links with local or international firms, and providing transportation to sales agents were associated with willingness to cooperate in research and extension, but type of business and conducting in-service training were not associated. Partnerships between the public and private sectors would capitalize on the comparative advantage of each sector. Fields of cooperation include undertaking adaptive research, farm trials, production of leaflets, funding and conducting group extension activities. Self-regulatory measures have to be adopted by the trade association to enforce quality standards to protect the interests of farmers and consumers.

Qamar (2002) identified that so many services that were managed in the past by governments are now being managed and delivered by the private sector. This was especially true in economically advanced countries. In many developing countries, institutions and services such as banks, railways, post offices, airlines, industries, hospitals, academic institutions, etc. were gradually being transferred to the private sector. The underlying reason is dwindling budgets of governments and business-as-usual
attitude of permanent government employees, which made the public institutions inefficient, less productive, causing financial losses and creating discontent among people. Private sector, on the other hand, has more resources, innovative ideas, and a motive for profit thus keen to offer efficient and better services to its clientele. There was strong lobbying from major multilateral and bilateral donors for privatizing national extension services. The main argument was that public agricultural extension systems have failed or are at best unsatisfactory when it comes to delivery of services to farmers. Another equally strong argument is that since farmers profit from extension advice, and the government budgets for public services are sliding, the cost of delivering this advice should be recovered by charging fee from the clientele. Yet one more argument in favour of privatization of extension services is that the private sector is actively involved in selling farm inputs and machinery then why should it not handle the task of advising farmers on agricultural matters, supposedly more efficiently than usually done by the public sector. The argument, healthy competition among service providers will lead to better quality and less costs for services, was also heard. The trend to privatize extension services will certainly shake the traditionally friendly and informal relationship between government extension staff and the subsistence farmers in developing countries, since the latter were never asked to pay for extension advice. Apart from the question whether total, partial or no privatization of extension is needed in developing countries, the national extension services should be well versed in the pros and cons of this major issue. Shekara and Charyulu (2002) reported that the Indian Government had launched an ambitious initiative to encourage private extension with the Ministry of Agriculture and the National Bank (NABARD). Graduates are being trained to become ‘agripreneurs’ and
on completion of their courses they receive a loan to establish an ‘agriclinic’ or ‘agribusiness centre’. Farmers are expected to pay a fee for their services and the agripreneurs are expected to identify the demand for a broad range of services from soil testing to advice on organic production and food processing. So far 112 businesses have been set up in 10 states and it is intended that the new services will provide specialist advice that may be beyond the scope of the service presently offered to farmers through public extension.

Chapman and Tripp (2003) reported that private extension was not a single entity, but include a wide range of modalities, from the spontaneous emergence of private markets for certain types of advice and service to carefully guided public support for the development of private extension provision. A key to understanding private extension was the fact that it was possible to separate the provision of funding from the provision of service. Although a ‘privatised’ extension service may require significant public support, the most significant change is the development of a new incentive system, in which the quality and content of extension provision is more responsive to farmers’ priorities. If privatised extension was to make a contribution, it will not embody the replacement of a monolithic public extension system by a similarly undifferentiated private system; instead, it will allow the development of a range of extension modalities and funding strategies.

Anderson and Feder (2004) conducted a research study and provided a framework in the light of results outlining farmers' demand for information, the public goods character of extension services, and the organizational and political attributes affecting the performance of extension systems. This conceptual framework is used to analyze several
extension modalities and their likely and actual effectiveness. The analysis highlights the efficiency gains that can come from locally decentralized delivery systems with incentive structures based on largely private provision, although in most poorer countries extension services will remain publicly funded.

Sadighi (2004) reported that privatization experiences vary from a complete withdrawal of state interventions, to a commercialization and cost-recovery approaches. Completely commercialized or privatized extension had shown to be very effective among larger-scale commercial farmers and for high-value cash crops and livestock. Cost-recovery was being introduced in a number of public extension services for such enterprises. This can have several effects including easing the burden on public budgets and providing a stimulus for private sector developments. Increasing the role of private sector (whether for profit or not-for-profit) in agricultural extension has become unavoidable tasks in many agricultural systems in both developing and developed countries. There were extension functions that will not be absorbed by the private sector and many farmers will not be served effectively by commercial extension. These and other aspects of training, advice and information delivery will always remain a public responsibility. Hence, education and training for basic qualifications, and dealing with issues with long-term consequences such as the conservation and stabilization of the natural resources, will remain in the public domain.

Qamar (2005) reported that many services that were managed in the past by governments are now being managed and delivered by the private sector, especially in developed countries. Many developing countries are following the suit. The underlying reason is dwindling budgets of public institutions, which makes them relatively inefficient and less
productive, causing not only financial loss to the government but also creating discontent among people. The private sector, on the other hand, has generally more resources, innovative ideas, and a motive for profit and is thus keen to offer efficient and better services to its clientele.

2.7 Private extension in Asia

Gowda (2001) reported that in most of the countries, agricultural extension service is public funded. Increasing financial difficulties have made these countries to think of ways to reduce support services to agriculture. Privatization represents one of several alternatives to activate the inefficient or budget starved public extension services. The favorable factors for privatization of agricultural extension in India included: Technological advancement in the areas of communication and information technology; opening out of public research and educational institutes to part with the technologies; changing-cropping trend and emergence of contract farming; need to earn more from smaller holdings; loss of credibility in the existing extension system; inability of the public extension system to reach the large target client system. He further described the challenges for privatization of agricultural extension in India. The factors included were: Larger area under subsistence farming; need for location specific technologies; women dominated rural work force; competition among private extension systems leading to contradictory messages.

Hanchinal1 et al. (2001) conducted a study to assess the attitude of extension personnel towards privatization of extension service; and to know the areas of service in which extension personnel prefer privatization of extension service. The research work was conducted in Haveri district of Karnataka State. This district was purposively selected.
because nearly 70 private companies involved in extension service and supply of agricultural inputs were functioning in this area. Accordingly, a total of 16 villages were finally selected for the study. In all there were 60 extension personnel selected for the study. The data was elicited from the respondents through pre-tested structured interview schedule by personal interview method. The data revealed that, the respondents were almost equally distributed in less favorable (33.33%), favorable (35.00%) and more favorable (31.67%) attitude categories. The overall mean attitude score was 89.77. It could be inferred that majority of the extension personnel in the study area were convinced about the advantages of privatization of extension service. It was found that mean attitude score of private agency extension personnel 93.36 was higher than that of government agency extension personnel i.e. 79.87. The ‘t’ value obtained was significant at 1 per cent level of probability. They further concluded that majority (70.00%) of the respondents preferred private agency to extend technical service in the area of cultivation of flowers followed by cultivation of vegetable crops (66.67%), seed-production (63.33%), cultivation of fruit crops (61.67%) and post-harvest technology (51.67%) implying that the extension personnel had inclination towards private agency intervention in seed-production, horticultural crops and post-harvest technology.

Prasad (2001) stated that private sector included the consultancy firms, contracting firms, producers’ associations, non-governmental organizations, media organizations and the like. Thus private extension has a broader canvas including all relevant groups than the narrow canvas of corporate sector. Private extension service, as a strategy for providing effective extension support to the farmers is gradually becoming popular among farmers in many countries including India. There is considerable scope for initiating paid
extension services in agriculture for high value crops and resource-rich farmers. However, there are technical, legal and institutional changes that are needed for promoting privatization of extension services. Privatization of extension service in India has adopted a variety of forms involving different stakeholders. Most of the agro-input firms perform the function of marketing, in which the marketing personnel also oversee extension related functions. When private extension organizations get involved in providing extension support to farmers, there will be competition among the various extension providers, which will take care of at least two elements- a) the need to sub serve consumer welfare and public interest, and b) the need for competitive advocacy and competition culture. As a result of competition, the private extension services become more efficient, especially in the context of liberalization and globalization. Both technical and allocate efficiency, which are basically economic in nature are taken care of by the private extension agencies, resulting in cost minimization, profit maximization and optimal use of resources, which are very much needed in a competitive environment.

Singh (2001) reported that the farmers were generally happy with contracting in India, though they do face some day-to-day problems in private extension system, which have implications for their incomes and livelihoods. More than fifty percent of the respondents wanted to continue under contracts and many others wanted to get into contract production.

Shekara (2001) stated in a study entitled “Private extension in India: myths, realities, apprehensions and approaches”, that agricultural extension varies from simple transfer of information to facilitating the process of total human development. The services were mainly funded and delivered by government in Indian context. But, there were private
players who also fund and/or deliver extension services. This process of funding and delivering the extension services by private individual or organization was called private extension. Private extension was solely the act of private individuals or organizations where the decision of privatization solely rests with government implemented in liaison with private extension Service Provider (PESP’s). And also, private extension and privatization need not have cost recovery or charging fee based. In the process of privatization, public extension is always a part. In private Extension, Stake holders are included: Agricultural consultants; agricultural consultancy firms; progressive farmers; farmer’s organization / co-operatives; non-governmental organizations (NGO’s); Krishi Vignana Kendra’s (KVK’s); Agri-business companies; input Dealers; newspapers; agricultural magazines; private television channels; private sector banks; internet; donor agencies.

Venkatakuman et al. (2001) concluded that 28.89% of the total farmers preferred the privatization of commercial crops whereas 13.33% of them preferred the privatization of horticultural crops and only 11.11% of the farmer respondents preferred the privatization of all the field crops. They added that majority of the farmer respondents had the opinion to privatize the commercial crops and horticultural crops. He further added that majority of the farmer respondents who gave the opinion preferred that privatization should be imposed to large farmers only. Since large farmers having larger area, their profit will be more and with better socio-economic status than the other farmers, this preference was occurred. They further concluded that more than two-fifth of extension workers (42.85%) had preferred the privatization to all field crops and less than two fifth of them (38.10%) preferred privatization for both commercial and horticultural crops.
Sulaiman et al. (2005) conducted a research study to determine the effectiveness of private extension in India and concluded that farmers were willing to pay for the delivery of an integrated set of services giving them access to quality inputs, credit and procurement services and field-based advice on technology use. Farmers registered with the private extension service provider can substantially increase their yields and income from farming in comparison to non-participant farmers. They reported that the increase in yields and income was attributed to field-specific technical advice from the private extension provider regarding the application of the right type of inputs at the right stage of crop growth. A private extension approach of this type focuses mainly on medium- and larger-scale farmers. A private organisation had been able to develop a sustainable and profitable business selling extension services which go beyond the traditional task of providing production technology, to include market services and linkages. They further concluded that apparently successful private extension approach was developed through a learning-based approach.

Fami (2006) stated that the financial crunches of public sector extension system as well as the pressure on the government to maintain the vast extension network were the two main factors stimulating the emergence of private extension agencies in Iran. Concerning privatization, one of the first attempts towards privatizing agricultural extension in Iran was started in Hamadan province through establishing private extension agencies. Since the year 2001, eight private extension agencies have been established in different cities of the province. An evaluation of the performance of these private extension agencies revealed that private extension face some problems, which decrease their efficiency. Some of the main problems were: Lack of access to appropriate transportation facilities
and teaching aids; lack of access to skillful SMS; financial dependency on the public extension system; lack of independence in policy making; lack of proper coordination between public and private extension organizations; and unfavorable attitudes towards the capacity and potential of private extension agencies among farmers and public extension personnel.

2.8 Private extension in Pakistan

Chatha (1984) determined the teaching effectiveness of results demonstrations conducted by Ciba Geigy to introduce Dicuron M.A. 60 W. P. in wheat. He concluded that as an outcome of result demonstrations conducted by the private extension field staff of Ciba-Geigy, a high majority (91.67%) of the respondents adopted the demonstrated weedicides. More than seventy percent of the respondents used recommended dose of weedicides. Level of education and size of land holding were positively associated with the adoption of weedicides. Lack of finances was the main obstacle in adopting the demonstrated weedicides as reported by 80% of the non-adopters. On the other hand 20% and 30% of the respondents who were non-adopters of weedicides reported that high cost of weedicides and carelessness were other factors for not using the weedicides, respectively.

Imran (1991) conducted a study to determine the effectiveness of various pesticide agencies in the adoption of recommended plant protection practices by the cotton growers of tehsil Depalpur, District Okara, Pakistan. He concluded that an overwhelming majority (92%) of the respondents adopted insecticides/pesticides due to the reasons, that they were more effective. A few majority (32%) of the respondents reported that they adopted pesticides/insecticides due to the advisory services of the private extension field staff. Most important reason for not adopting the normal dose of insecticides/pesticides was lack of awareness about the recommended dose of that particular product. It indicated the lack of advisory services by extension field staff, regarding input utilization. He further concluded that 80% of the respondents reported that private extension field staff was most important source of information followed by public extension staff (72%). He further reported that most important extension methods used by private extension field
staff were group meetings, result demonstrations, and individual contacts as reported by 78, 58, and 50% of the respondents respectively.

Ashraf (2001) determined the effectiveness of communication methods used by pesticide companies to popularize their products among the farmers in Tehsil Arifwala, Pakistan. He stated that an overwhelming majority (90%) of the respondents agreed that farm and home visits paid by private extension field staff were properly planned and conducted. However the visits appeared to be relatively weak regarding follow up. All the respondents were of the view that the time for conducting result demonstrations was appropriate. However the aspect relating to the involvement of farmers at different steps demonstration and publication of results of demonstration. Further, he concluded that all the respondents reported that the extension field staff arranged discussion meetings, at appropriate time and subject matter for discussion was based on the audience’s interest. He concluded that more than 80% of the respondents were agreed that the literature used by the private extension field staff to disseminate agricultural information was nicely prepared and thus attracted the readers.

Bajwa (2004) concluded that poor farmers often tend to be excluded from the public sector and private sector agricultural extension services for a variety of reasons. However, they can be mobilized around community organizations to link up with the public and private sectors, in order to achieve the economies of scale and to benefit the small farmers as well as the private sector. Partnership models, like the one from Rahim Yar Khan, can help in the process of technology diffusion and in the development of market chains, leading to enhanced agricultural productivity as well as quality of life for the small farmers.
Abbas (2005) conducted a research study to determine the role of pesticides companies in the dissemination of plant protection technologies among cotton grower of Pakistan. Tehsil Rejanpur of district D.G. Khan was selected as the universe of the research study. From the results he concluded that extension services delivered by private sector play a pivotal role in disseminating plant protection techniques to the farmers as majority of the farmers reported that private sector was the highly effective information source form them. Respondents rated the effectiveness of communication skills, sociability, ability to persuade, usefulness of information, credibility, technical knowledge, dedication/devotion, of Private sector between medium and high category. He reported that effectiveness of farm visits was rated between low and medium category, while the effectiveness of group meeting, method demonstration, result demonstration, printed materials, was rated by the respondents in low category. He further reported that the contribution of private sector regarding plant protection measures of cotton crop i.e. chemical control of pest /diseases and use of resistant varieties rated between low and medium category. Similarly contribution regarding chemical weed control, seed treatment and manual weed control tended toward low and very low category. He added that majority of the respondents was not at all satisfied with the working of private sector. However about 20 and 15% of the respondents were partially and fully satisfied respectively. More then half (52%) of the respondents suggested that private extension field staff should follow regularity, punctuality in their visits to the farmers.

2.9 Approaches used in Agri Extension

Albrecht et al. (1989) argue that there are two extension approaches: the “production technology” approach and the “problem solving” approach. The first is still the prevalent
extension model of most government extension services. Moreover many non-government organisations are based on the old one-way linear and top-down (research, extension organization, extension agent and farmers) model of Transfer of technology transfer.

Russell et al. (1989) argued that agricultural extension had two main traditions. The first was technical innovation. This was the basis of the original notions of extension, because training farmers and graziers about new technologies and new knowledge was seen to be the key to improving the productivity of agriculture. In this area the key words were diffusion of innovations, adoption, farming systems research, extension and research linkages, and results becoming technology and new knowledge, in agricultural systems etc. The second tradition was human resource development. This was a completely different and much newer tradition that has grown out of the question about why the technical innovation process has not been used in some conditions, and some technologies have had negative effects for producers or farmers and grazers. The key words in the human resource area were: community development, establishment building, leadership development, normative, organization and education strategies, and development delivery systems.

Bird (1994) argued that decentralized extension systems have showed evidence of increased resource mobilization and reduced strain on central finance, greater accountability, and more responsive administration which leads to maximum participation of local people resulting in more understanding of the government’s role.

Muhamad et al. (1995) conducted a study to identify the approach utilized in generating and disseminating cocoa technology to smallholders in Malaysia. The respondents
consisted of 499 cocoa smallholders selected randomly from six main cocoa growing regions. The study revealed that the generation and dissemination of cocoa technology utilized the research-transfer model. Through the training and visit mechanism, a majority of cocoa farmers do regularly receive recommended practices generated by research institutions. The utilization of recommended technology is still relatively low related to this is the farmers' social economic status and the limitations inherent in the research-transfer model.

Crowder (1996) in his research entitled “Decentralized Extension: Effects and Opportunities” suggested a series of recommendations to improve local extension including the formation of partnerships based on collaboration among extension units, NGOs, People’s organizations, and universities. Among other recommendations included training of extension agents to help shift them from top-down to community-based (participatory) approaches; operationalization of decentralization through special representative bodies and councils so that farmers can participate in local decision making and strong linkages with regional and national offices of agriculture (Extension), to facilitate information and knowledge sharing.

Kelly (1997) surveyed local landholders with government officers in relation to goat management in the Mulga Lands of south-west Queensland, Australia. In this survey she used action learning and problem solving approaches. She found when landholders and government agents share decision-making and work together; they adopt the best goat management on their properties.

Guadagni (2001) said that decentralization of Agricultural Extension services promotes farmer centered integrated approach. This includes farmer’s participation in planning and
plan implementation. Such locally specific and depends upon the identification and use of farmer group[s with resources and technological requirements for extension activities. Anderson and Feder (2003) analyzed the considerations that lead policy makers to undertake extension investments as a key public responsibility, as well as the complex set of factors and intra-agency incentives that explain why different extension systems’ performance varies. They provided a conceptual framework outlining farmers’ demand for information, the welfare economic characterizations of extension services, and the organizational and political attributes that govern the performance of extension systems. The conceptual framework was used to examine several extension modalities and to analyze their likely and actual effectiveness. Specifically, the modalities reviewed include “Training and Visit” extension, decentralized systems, “Fee-for-Service” and privatized extension, and Farmer-Field-Schools. They also discussed methodological issues pertaining to the assessment of extension outcomes, and a review of the empirical literature on extension impact. They emphasized that the efficiency gains that can come from locally decentralized delivery systems with incentive structures based on largely private provision that in poorer countries will still be publicly-funded. In wealthier countries, and for particular higher income farmer groups, extension systems will likely evolve into fee-for-service organizations.

Feder et. al. (2004a) evaluated the impact of farmer field schools, an intensive participatory training program emphasizing integrated pest management. The evaluation focus on whether program participation has improved yields and reduced pesticide use among graduates and their neighbors who may have gained knowledge from graduates through informal communications. The results revealed that, employing a modified
“difference-in-differences” model indicate that the program did not have significant impacts on the performance of graduates and their neighbors.

Feder et. al. (2004b) stated that Farmer Field Schools (FFS) were an intensive training approach introduced in the last decade in many developing countries to promote knowledge and uptake of ecologically sensible production approaches, and in particular, integrated pest management which, minimize the use of pesticide. Because of the high training cost, the viability of the program depends crucially on the effectiveness of knowledge diffusion from trained farmers to other farmers. They conducted a research study and collected data through panel discussion from Indonesia to assess the extent of diffusion of knowledge regarding integrated pest management from trained farmers to other farmers. The results of the study confirmed that better knowledge leads indeed to reduced pesticide use, and that trained farmers make a modest gain in knowledge. However, there was no significant diffusion of knowledge to other farmers who reside in the same villages as the trained farmers. These results implied that revision in the training procedures and curriculum need to be considered if the FFS approach was to become viable and effective.

Alene and Manyong (2006) conducted a research study to examine the magnitude and sources of yield variation among adopters of improved cowpea varieties in northern Nigeria promoted through farmer-to-farmer diffusion. The results revealed important efficiency differences between the lead farmers who had contacts with breeders and the follower farmers who get technology and information from the lead farmers. Differential adoption of the package of seed, insecticide, fertilizer, and recommended cereal-cowpea cropping pattern provides much of the explanation for yield variation among adopters.
The component often missing, and hence accounting for much of the yield variation, was the crop management technology relating to the cereal-cowpea cropping pattern. No efficiency variation was attributed to the source of technology and information, such as whether improved cowpea was obtained from breeders or lead farmers. Technology source has a rather indirect influence on efficiency through its effect on package adoption where breeders promote greater package adoption among the lead farmers than the lead farmers do among the follower farmers. Possible ways of disseminating crop management technological information through the farmer-to-farmer technology diffusion are recommended to better exploit the yield and profitability potentials of improved cowpea varieties in northern Nigeria.

Chaudhary et. al. (2006) concluded that utilization of agricultural technology by the farmers play an important role in boosting the agricultural production. Keeping in view its importance, they suggested that extension agencies need to put more efforts in creating awareness and facilitating the farmers for the utilization of latest agricultural technology by the farmers. They stated that presently three extension approaches were mainly working in agriculture extension department of Government of the Punjab, Pakistan.

1. Public Sector Extension Approach (PSEA)

2. Participatory Extension Approach (PAE)

3. Commodity Specialized Extension Approach (CSEA)

2.10 Public-Private Partnership in Extension

Lowdermilk and Freeman (1985) stated that extension by nature is an educational process of transferring useful information and research findings to end users for their benefits.
This process and the particular extension model used constitute only one of several complimentary organizational inputs required for effective transfer of knowledge to clients. Although a powerful tool for agricultural development, the public mechanism of extension alone is never a panacea. No single public or private organizational input for agriculture will provide a quick, simple or radical solution to the complex human, socio-economic and technical problems facing millions of farmers, in a country as vast and dynamic as India. Therefore, strong functional linkages with other support and service organizations, policy-making levels, knowledge creation centers as well as other private and public agencies involved in the transfer of knowledge are necessary to effectively provide new and improved production possibilities to farmers.

Marsh and Pannell (1999) stated that in most states, policies and practices have increasingly been based on considerations of private/public goods, competitive neutrality, user pays and cost recovery. In addition, the delivery of extension has been strongly influenced by changing administrative structures and a change in the paradigm within which the extension community operates. These changes in policy/ideology/paradigm have had major impacts, including a rapid increase in the amount of extension being delivered by the public and private sector.

Rivera et al. (2000) reported that there is growing recognition that, even where public financing of extension is justified, private service delivery is often more efficient in serving clients. This leads to strategies for contracting extension services de-linking funding from service delivery. Contracted extension strategies take many different approaches to division of responsibilities for financing, procurement, and delivery of services, but most reforms involve public funding for private service delivery.
Competitive contracting instills a private-sector mentality of cost-consciousness and results-orientation, even in public institutions too when they are forced to compete in providing services.

Al-Rimawi, and Al-Karablieh (2001) studied that public sector extension was still critical to small, fulltime, less commercialized farmers, and women farmers and to promote environment friendly activities. They reported that low coverage of public sector extension services and mutual interest in promoting the purchasing power in the rural areas call for partnership with the private sector. Agro-input supply firms can profitably collaborate in the provision of extension services, improve coverage, test appropriate technologies with farmers, and develop their product to match their supplies with real demand for inputs. They suggested that policies should be adopted to encourage private firms to be members in professional associations or to be merged into corporations or both to enable them to upgrade their extension services, and to undertake experimental work and staff training.

Binenbaum et al. (2001) stated that within the standard neoclassical economics literature, public-private partnerships are the subject of traditional welfare analysis, typically evaluated according to the efficiency of their social welfare impact given scarce resources for research. Public-private partnerships are also a topic of analysis in information economics, where studies focus on the relationships and incentives that structure the flow of information between agents.

Davidson et al. (2001) concluded that The public and private extension systems offer competing, conflicting and overlapping programmes and Both private and public extension rely on a strategy of using contact farmers, which severely limits the diffusion of information. They further concluded that Private sector extension is more concerned with serving the needs of larger, resource-rich farmers to the exclusion of other farmers because of its primary interest in generating profits and Public sector extension is biased towards better-educated farmers, although not necessarily towards those with large landholdings.
Dialmini and Toeh (2001) reported that the partnership experiences by the university of Swaziland with other institutions and/or agencies at the international, regional, and national levels during the past twenty years had provided some very useful lessons and guidelines to the university to face the challenges in the new millennium. Public and private sectors and civic societies were crucial to the university not only to attain its mission to develop common visions, goals and objectives, shared responsibility and accountability but more important to sustain it’s dynamic to improve the quality of academic excellence and professional development. The findings of the study recognize the need to establish linkages between the university and relevant institutions at various levels to pursue its globalization efforts to gain recognition and credibility. The implications of these partnerships ensure the sustained ability of development of university human resources.

Ojha and Morin (2001) concluded that Partnerships between Government Organizations (GOs), Non-Government Organizations (NGOs) and Private Sector Organizations (PO) were more effective than the efforts of individual agencies in extending agricultural technologies to farmers, but only when the partners fulfilled their mutually agreed responsibilities. When any or all of the partners proved to be uncommitted, individual patterns were rather more effective than partnerships. The key to successful partnerships is the mutual understanding of and respect for each other’s strengths and weaknesses. Partnership between GO and PO improves the access of large farmers to high-cost technology. Small farmers, including women from poor families, can be reached through GO+NGO partnerships. Philosophically, the NGOs are committed to bringing development and sustainable agricultural technologies to disadvantaged and resource
poor and marginalized farmers including women. The GO’s agenda is also to reach small farmers. With the NGOs’ strength in motivating farmers and the GO’s technical competence, this partnership pattern can reach more small and marginal farmers, as both the GO’s and NGOs’ mandates dictate.

Smith (2001) found that the term “decentralization” has been used in the literature to describe four alternative institutional arrangements: deconcentration, delegation, devolution, and transfer to private firms and NGOs. These four institutional arrangements reflect different combinations of the three factors of decentralization process: 1) transferring specific decision-making functions to local people; 2) public participation factor; and 3) local government involvement.

Swanson and Samy (2002) presented a conceptual framework that identify the comparative strength of public, private and non-governmental organizations (NGOs) in carrying out different types of technology transfer, human resource, and social capital development programmes. First, public sector extension appears better suited to undertake a wide range of extension programmes dealing with natural resources and farm management. Secondly, private sector firms have access to superior technologies. Therefore, they can provide farmers with information to compliment these new technological products. Third, NGOs are well suited to assist the rural people through different types of social capital and poverty alleviation programmes. They suggested that in strengthening the national extension systems for 21st century policies and resources should reflect the comparative strength of public extension, private firms and NGOs. They further concluded that if this type of public private partnership can be achieved, then the results would be more effective approach of delivering extension programmes to
serve the technological, human resource and organizational needs of all group of farmers in developing countries.

Van der Meer (2002) reported that public private partnerships are a topic of increasing investigation in the industrial organization and public finance literature, as an alternative structuring of production processes and public support to research.

World Bank (2002) reported that public-private partnerships were increasingly popular in development policy and practice as a means of addressing global issues as diverse as health, environment, finance, governance, and agriculture.

Hartwich et al. (2003) reported the economic and social institutions that affect the opportunities for science-based innovation within a given social or geographic region. They also contributed significantly to discussion of networks and their effect on the activities and interactions that generate innovation. Moreover, it extends discussion from the role of the Schumpeterian entrepreneur and firm to the wider importance of social institutions and their interactions with public and private research organizations. Central to this approach is the identification of a common interest space.

Jaya and Reddy (2003) stated that national agricultural extension system of India has so many Challenges, which included: Capacity building of extension professionals in new trends like globalization, bio-technology and environmental issues; Liaison among Research- Education- Extension-Market and farmers i.e. inter-institutional linkages; Adoption of participatory extension methodologies; Farming situation based extension methodologies; Identifying and promoting suitable farming systems; Enriching the extension role with market information; Making use of information technology; Making small holdings into viable units of agri-enterprises; Assigning a proper status to the extension profession; And ensuring sustainable agricultural development. They also identified some of the key systems constraints that need to be addressed have to meet the emerging challenge. These constraints were: Multiplicity of technology transfer systems; Narrow focus of the agricultural extension system; Lack of farmer focus and feedback;
inadequate technical capacity within the extension system; Need for intensifying farmer training; Weak research-extension linkages; Poor communication capacity; and inadequate operating resources and financial sustainability. They concluded that, the present extension scenario calls for private-public partnership, diversification, intensification, natural resource management, research on consumer preferences, and continuous capacity building of all the stakeholders in the agricultural development.

Ollila (2003) concluded that the partnerships bring together resources and expertise from a wide variety of actors, including international organizations, government agencies from developing and industrialized countries, multilateral and bilateral donors, philanthropic foundations and non-governmental organizations, and some of the largest pharmaceutical and medical research companies in the sector.

Richter (2003) argued that public-private partnerships were an optimal policy approach to promoting social and economic development that brings together the efficiency, flexibility, and competence of the private sector with the accountability, long-term perspective, and social interests of the public sector.

World Bank (2003) found significant support for increased public-private collaboration among Consultative Group on International Agricultural Research (CGIAR) center director generals, donors, representatives of national agricultural research systems, and members of the private sector. Moreover, efforts had been made in several forums to promote public-private partnership in agricultural research.

Galaa and Obeng (2004) stated in a study entitled “Public-private sector partnerships for improved agriculture services delivery: How do we make them work?” that one of Ghana's main development challenges is the delivery of extension, marketing, input
supply, financing and other agricultural support to smallholder farmers. Economic liberalization and institutional reforms have reduced and redefined the role of the state in services provision and the onus is now on the emerging private sector and civil society organizations to support the state in providing some of these services. This study explores the nature of existing partnership and collaborative arrangements in the agriculture sector with the view of testing the plausibility of public-private partnerships in the provision of extension services in the agriculture sector of Ghana. The findings show that although the quality of extension services can be improved and the scope expanded more than the collaborating agencies can achieve by working independently, very few well-forged partnership and collaborative arrangements exist in the agriculture sector. Collaborative arrangements in the sector are largely informal and dictated by personal or individual caprices. Although this introduces flexibility, the relationship is often less legitimate, making it difficult to enforce agreements. The lack of clear-cut structures or mechanisms of partnerships creates problems in partnership management.

Spielman and Grebmer (2004) examined five hypotheses that may explain the low willingness and ability of public institutions and private firms to enter into partnerships. These are as follows:

- Public and private partners are challenged by fundamentally different incentives.
- Public and private partners do not adequately account for and minimize the direct and hidden costs of a collaborative research investment.
- Public and private partners are hindered by persistent negative perceptions of each other.
• Public and private partners are constrained by the lack of creative organizational
mechanisms to reduce inter-sectoral competition for key assets and resources.

• Public and private partners are impeded by the limited availability of information
on successful working models of partnership.

Spielman and Grebmer (2004) concluded that public-private partnerships are
significantly constrained by insufficient accounting of the actual and hidden costs of
partnership; persistent negative perceptions across sectors; undue competition over
financial and intellectual resources; and a lack of working models from which to draw
lessons and experiences. Despite these constraints, however, there is reason to believe
that sufficient common space exists to create greater opportunities for public-private
partnership in pro-poor agricultural research. They further suggested that several steps
can be taken at the present time to create an environment more conducive to public-
private partnership. They are as follows.

1. Compile and maintain an analytical inventory/database of public-private
partnerships in the CGIAR and, more generally, in national agricultural research
systems of developing countries from which lessons may be learned.

2. Identify feasible research problems and opportunities that require research inputs
from both the public and private sectors and are immediately relevant to small-
scale, resource poor farmers and other vulnerable agents in developing countries.

3. Increase the frequency and technicality of dialogue between the sectors to reduce
negative perceptions and foster understanding of potential research opportunities,
and make the dialogues attractive and constructive forums for decision-makers
from both sectors.
4. Improve the quality of cost-benefit analysis of partnerships and make available information on terms and conditions used in agreements to manage risk and liability.

5. Explore the creative use of third-party brokers and other mechanisms to separate research priority setting and financing from research execution.

6. Engage in a multi-stakeholder discussion on public-private partnerships and agricultural biotechnology research with a wider audience, even despite the implications of controversy and conflict that such interactions may entail.

Dinar et al. (2007) conducted a research study to integrate the production- and the efficiency-based approaches for evaluating the impact of extension on farms' performance. For this purpose the nonneutral production frontier model was used, and the empirical analysis referred to a sample of farms from Crete, Greece. The empirical results supported the proposed formulation instead of either the production- or the efficiency-based formulations as extension was found to have a statistically significant effect on closing both the technology and management gaps. Public and private extension services were found to be competitive in the production function and complementary in the technical inefficiency effect function. In addition, farms using both public and private extension services achieved a higher degree of technical efficiency than those using either public or private extension services, and farms with no extension services were found to be the least efficient.

2.11. Synthesis of Review of Literature
Literature highlighted that public extension throughout the world is under criticism due to its top-down nature. A general feeling about public extension is that it is supply-driven, technically weak, patronizing only big farmers, insufficient coverage of contacts with farmers and practicing top-down extension approach. Some others viewed that public extension system is inflexible and unresponsive, with the high cost that brings insufficient benefits. This called for alternatives such as privatization of extension services, inclusion of other partners in extension delivery, contracting-out of extension work, and farmer-to-farmer extension modality.

Due to this unsatisfactory delivery of need-based services to farmers, private sector started providing agricultural technologies to farmer’s efficiently. It also resulted in lowering the financial burden of public extension. There are number of privatization models varied from complete withdrawal of state role to cost recovery approaches in the world with better provider-clientele relationship. Therefore, one can say that world is now moving from top-down to partnership pattern.

A numerous benefits of partnership are discussed by number of researchers as cost effectiveness, larger area coverage, addressing complex issues of common concern, educating stakeholders, reinforcement, reaching vulnerable group, sharing and learning, preventing overlap, complementarily, leveraging scarce resources, and creating wealth, providing opportunities to learn about the global need for change, bringing different skills and perspectives to a table, providing solutions to user faster by responding quickly to changing circumstances, increasing productivity, reducing poverty, and improving quality of life. It is especially because of these mutual advantages, partnerships between the state and the private sector has now become a subject of development discourse.
Therefore, it is concluded that extension partnership between the public and private sectors will be more helpful to meet the diverse farmers’ needs as well as it would share the financial burden on the shoulders of governments.
Chapter # 3

MATERIALS AND METHODS

The study aimed to find out the perceptions of Agricultural Extension Field Staff and farmers regarding the analysis of paradigm shift from public extension system to public-private partnership extension system. This chapter describes the methodology of the research adopted by the researcher.

3.1 Pakistan: The country of study

Pakistan came into being on 14th August 1947 on the map of world as Islamic Republic of Pakistan. It lies between 25°-30’ and 36°-45 north latitude and 61° and 75°-30’ east latitude, located in Northwest of the Indo-Pak subcontinent. The mountains of Himalaya and Karakoram bound it at the Northwest and North side. On the Northwest and West side its boundary touches Afghanistan and Iran. On its North and Northeast side, Kashmir and Indian states of Haryana and Rajasthan are located. On its South long coast of Arabian Sea lies. Total geographical area of Pakistan is 796.1 thousand sq. Kms (Ahmad,1999)

The political system in Pakistan is democratic. President is head of the state, but the majority of years Martial Laws of Field Martial Muhammad Ayub Khan (1958-1969), General Muhammad Yahya Khan (1969-1971), and General Muhammad Zia-ul-Haq (1978-1988) prevailed in the country. After 1988, Benazir Bhutto, Mian Muhammad Nawaz Sharif were elected as Prime Ministers, each twice from 1988-1999 and then General Pervaiz Musharaf took over the Government and implemented Devolution Plan in 2001 (Hassan, 2008).

Population of Pakistan was 153.96 million in 2006 with a growth rate of 1.90%. It ranks at 67th position in terms of World’s population size. The total labour force available to
Pakistan during 2006 was 47.67 million, out of which 32.37 million belonged to rural areas and the rest of them worked in urban areas. Total literacy rate for Pakistan is 53% (Punjab 55%, Sind 56%, NWFP 45% and Balochistan 37%), which is 65% in males and 40% in females at country level. (ibid).

Pakistan has agriculture-based economy. Almost 66.7 percent of country’s population lives in rural areas and is directly or indirectly linked with agriculture for its livelihood. Agriculture accounts for 20.9 percent of its GDP and employs 43.4 percent of the total work force. Agriculture contributes to growth as supplier of raw materials to industry as well as market for industrial products and also contributes substantially to Pakistan’s exports earnings. In agro-ecological system the major crops are cotton, rice, sugarcane and wheat along with the poultry and livestock sector. (Government of Pakistan, 2007).
3.2 NWFP: Universe of the study

The North West Frontier Province (NWFP) of Pakistan served as universe of the study because both the systems under study i.e. public-private partnership extension system (FSC) and public extension system (AED) are working in all the 24 districts of the province. NWFP is located on both banks of the river Indus. It stretches from the mountains of Himalaya in the north to the deserts in the south where it touches Baluchistan and Punjab provinces. On its western border there is the rocky land of neighboring country Afghanistan, which is accessed through the mountains of the Suleiman Range via the historic Khyber Pass. Its borders are close to those of China, the Tajikistan and the disputed territory of the state of Jammu and Kashmir in the north. The capital of the province is the city of Peshawar.

NWFP covers an area of 74,521 sq. km. According to the 1998 census, the total population of N.W.F.P. was approximately 14 million out of whom 52% are males and 48% females. Geographically the province could be divided into two zones: the northern one extending from the ranges of the Hindukush to the borders of Peshawar basin; and the southern one extending from Peshawar to the Derajat basin. The northern zone is cold and snowy in winters with heavy rainfall and pleasant summers with the exception of Peshawar basin which is hot in summer and cold in winter. The southern zone is famous due to its hot summers and relatively cold winters and inadequate rainfall. Its climate
varies from very cold to very hot. Its snow-capped peaks and fertile green valleys of remarkable beauty magnetize tourists and mountaineers from far and wide.

The Pukhtoons, who are inhabitants of NWFP, are divided into numerous sub-tribes and clans. The major portion of the population of NWFP (83%) lives in rural areas who are dependent directly or indirectly on agriculture.
The province possesses 10.17 million hectares of land, but cultivable area is only 2.75 million hectare. Out of this cultivable area, only 1.8 million hectare is cultivated and remaining is cultivable waste. The major portion of cultivated land is rain fed which constitute 49% of the cultivated land. (Government of NWFP, 2008).

3.2 The selection of study area

Out of 24 districts of NWFP, two districts Lakki Marwat and Swabi were selected randomly as study area. Only two districts were selected due to time and resource constraints and due to long mountainous distances between the cities of the province.

A brief introduction of the study districts is presented below:

3.2.1 District Lakki Marwat:

Lakki Marwat was created as an administrative district on the 1st July, 1992, prior to that it was a part of Bannu district. According to the elders of the area, the original founder of Lakki Marwat village was Lakki Ram - a Hindu. The name of Lakki village is attributed to him. As it is inhibited by Marwat tribe, hence it is called Lakki Marwat. The district lies between 32°-17′ and 32°-53′ north latitudes and 70°-23′ & 71°-16′ east longitude. It is bounded on the north by Bannu and Karak districts. On the east by
Mianwali district of Punjab province, on the south-east by Dera Ismail Khan district, on the south-west by Tank district and on the west by tribal areas adjoining tank district and South Waziristan Agency. The total area of the district is 3,164 sq. Kilometers.

The main constituents of the soils in Lakki Marwat are deep excessively drained, calcareous and coarse textured. Climate of the area is arid to semi arid and sub-tropical continental. The soils are used for dry farming and torrent water cultivation. The topography of the district is a combination of hills and plains. The general elevation of these hills ranges from 500 to 1000 meters above the sea level, while the general elevation of the plain area is about 200 to 300 meters above the sea level. Kurram River flows through the district from north-west to south-east and joins the Indus River south of Isa Khel town. The climate of the district is dry and hot in summer and cool in winter. The summer season begins in April and continues till October. June is hottest month with maximum and minimum temperature of about 42 and 27 degree Celsius respectively. January and February are the winter months. In winter the mean maximum and minimum temperature is about 20 and 4 degree Celsius respectively. The rainfall generally occurs in July and August. The main crops sown in the district are wheat, gram, maize, sugarcane canola, and vegetables. Fruits include dates, melon and watermelon, etc (Govt. of Pakistan, 2000a).

3.2.2 District Swabi

Swabi district was created in 1st July, 1988. Prior to that, it was a tehsil of Mardan. It had two tehsils namely Swabi and Chota Lahor. The district lies between 33°-55′ and 34°-23′ north latitudes and 72°-13′ & 72°-49′ east longitude. It is bounded in the north
by Buner district, on the east by Haripur district, in the south by Attock district of Punjab province and on the west by Nowshera and Mardan districts. The total area of the district is 1543 square kilometers.
Fig 3.3: Map of NWFP, highlighting study districts- Lakki Marwat and Swabi

The district may be divided into two parts, the northern hilly area and southern plain. The height of these hills varies between 750 to 1400 meters above sea level. The plain area of the district is intersected by numerous stream and many small rivers. The important stream is Narranji Khuwar. Indus River flows along the southern boundary of the district. The soil ranges in texture from silt loam to silt clay loam or silt clay. The soil is irrigated with canals supplemented by tube well irrigation system. Some part where irrigation is not feasible is used for dry farming of wheat, gram and groundnut.

The district has extremes of climate. The summer season is extremely hot. The temperature reaches to its maximum in the month of June. The coldest month is January. The maximum rainfall is received in July and August during which weather becomes hot and humid. The entire area is fertile and produces good crops. However most of the cultivated area is barani (rained) and receives sufficient annual rainfall. Its major crops are wheat, maize, tobacco, rice, jawar, ground nut, barley, canola and sugarcane. A variety of fruit plants are also being grown throughout the district (Govt. of Pakistan, 2000).

3.3 **The study population**

Each randomly selected district had five numbers of FSCs. Two FSCs from each district were selected randomly which served as population of the study.

3.4 **Sampling procedure and sampling size**
A multistage cum simple random sampling technique was applied (Hussain et al., 2004; Ogunjuyibe et al., 2005; and Siddiqui et al., 2005). All the members (farmers) of selected FSCs served as respondents of this study. Sample size for farmer respondents was 491 and all extension field staff (EFS) were also interviewed who were 11 in number. Hence, the sample size for this study including farmer and EFS consisted of 502 respondents.

3.5 Selection of sample

3.5.1 Farmer respondents

A complete list of each selected FSC was obtained from respective Agriculture Officer, then with the help of table designed by Fitzgibbon et al., (1987) for determining sample size from the given population, a sample was drawn as given below in the table 3.1.

Table 3.1: Sample size of farmer respondents from each randomly selected FSC

<table>
<thead>
<tr>
<th>District</th>
<th>Name of FSCs selected</th>
<th>Total no. of members</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swabi</td>
<td>Swabi</td>
<td>190</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>KSK</td>
<td>300</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>490</td>
<td>217</td>
</tr>
<tr>
<td>Lakki Marwat</td>
<td>Ghazni Khail</td>
<td>554</td>
<td>165</td>
</tr>
<tr>
<td></td>
<td>Serai Naurang</td>
<td>370</td>
<td>109</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>924</td>
<td>274</td>
</tr>
<tr>
<td>Grand total</td>
<td>4</td>
<td>1414</td>
<td>491</td>
</tr>
</tbody>
</table>

It is notable that some of the female members were also found in case of some FSCs in the province as females were also encouraged to get registration, but by chance in random selection we got those FSCs where no female was enrolled as members; therefore, all the randomly selected farmers were males.

3.5.2 Extension Field Staff
All the Agricultural officers and district officers of the selected districts were selected as respondents of the study.

3.6 Preparation of Interview schedule

Keeping in view the type and nature of the respondents, two interview schedules were developed by the researcher, having close ended questions, one for EFS and other for member farmers (Acharya et al., 2005; and Tucker et al., 2005). These interview schedules were based on the literature reviewed, personal experience, and close study of FSC. These were divided mainly into three parts, i.e. biographical information, general information about the working efficiency of FSC and SWOT analysis.

3.6.1 Biographical Information

Important aspects of biographical information of the respondents like age, education, field of specialization, size of land holding, type of tenure, etc were included in interview schedules. These aspects were in accordance with Saghir et al., (2005).

3.6.2 General Information about the Working Efficiency of FSC

The other section of interview schedule was related with the general information about the working efficiency of FSC. Respondents were asked questions about the responsibilities of FSC, cooperation of the line departments, facilities provided to farmers, and utilization of different sources of information by farmers and response were provided in ‘yes’ or ‘no’.

3.6.3 SWOT Analysis

This section included questions on comparison between public extension system (AED) and public-private partnership extension system (FSC) especially in term of strengths, weaknesses, opportunities and threats. The following 5-points scale was used for this purpose:

To some extent --------------- 1
To below average extent---- 2
To an average extent----------3
To above average extent---- 4
To high extent---------------- 5

3.7 Reliability

Many methods can be used to measure the reliability of the research instruments such as interrater, test-retest, alternative form, split half and coefficient alpha (Dane, 1990;
and Nachmias and Nachmias, 1992). Researcher used test-retest method for reliability of the research instrument. For this purpose twenty five farmers, four agriculture officers and two district officers, similar to the study population were interviewed. After interval of fifteen days, the same personnel were re-interviewed. The responses of both the interviews were compared with one another and generally found consistent in most of the cases.

The correlation co-efficient between both the responses were found within the range of minimum 0.613 to a maximum 0.941 with an average value of 0.777. According to Nunnally (1967), reliability co-efficient between 0.5 and 0.6 is considered adequate at early stages of research.

Researcher discussed the reliability results with his supervisor and senior teachers of the Department of Statistics, UAF. All were of the view that the instrument proved reliable enough to go for data collection in the field.

3.8 Validity

The face and content validity of both the instruments was determined by presenting them to two Associate Professors, one Assistant Professor and three lecturers in the Division of Education and Extension, University of Agriculture, Faisalabad. The same were also presented to one DOA and three AOs in the Department of Agriculture Extension, NWFP for validation of questions related to the responsibilities, by-laws and facilities provided by FSC, as these officials are directly related to FSC. Research instruments were finalized after making necessary deletions and additions according to valuable suggestions given by the experts (Dlamini et al., 2004).

3.9 Translation

Before going into field for data collection, interview schedules designed for farmer and EFS respondents were translated into Urdu language. Then it was viewed by a professor of Urdu for accuracy. These translated interview schedules were retranslated back into English by another expert who had not seen the original English version. Necessary language corrections were made till it was found consistent. Extension field staff was interviewed through English version while farmer respondents through Urdu version of interview schedules.

3.10 Data Collection

Data were collected with the help of “survey” method (Wickramasigh, 1997; Mirani et al., 2003; Siddiqui et al., 2005 and Hassan et al., 2005). All the respondents were interviewed by researcher personally at their homes, farms and offices. The data collection was started from March, 2006 and ended in July, 2006.

3.11 Analysis of data

The data collected through quantitative research were coded and entered into computer for analysis. Office, Excel 2003 and SPSS version 13 were utilized for data analysis (Ogunjuoyigbe et al., 2005 and Panchanadaswarm and Koverola, 2005). Simple statistics i.e. frequency and means were computed for different variables. T-test was applied where necessary for the comparison of two extension systems.
3.12 Focus Group Discussion

After the collection of quantitative data, it was decided with the consultation of supervisor to collect the qualitative data from farmers and EFS respondents in the form of mixed focus group technique.

According to Shaw (2003), and Latta & Goodman (2005), the advantages of qualitative data in social sciences research are more over quantitative data. Out of many other methods of data collection for qualitative research, focus group technique was adopted for its higher values as identified by Reid (1994); Sinclar (2000); Patton (2000); Allen (2005); and Tucker et al. (2005).

For this purpose two focus groups were arranged, one in Swabi and other in Lakki Marwat district. In both the mixed focus groups eight farmers (from those FSCs which were not included in quantitative data collection), 4 Agricultural officers and one District officer of the respective districts were selected as respondents. The focus group of the Swabi was arranged on November 15, 2007 and of Lakki Marwat on November 22, 2007. They were given an open-ended interview schedule about the strengths, weaknesses, opportunities and threats related to FSC. Thus information collected through these focus group discussions were noted carefully at the spot and analyzed on the basis of collected information and observation of the researcher. Their views about the strengths, weaknesses, opportunities and threats concerning FSC were displayed in the form of ‘agreed upon’ and ‘disagreed upon’ statements.

3.13 Problems faced during data collection

- All the expenses during research period incurred by the researcher himself.
- Respondents were busy due to their seasonal field activities; therefore, they showed somewhat reluctance in providing information.
- Due to large distance between the study place and study area, researcher faced problems to be in contact with his supervisor. The study place was in Punjab province (University of Agriculture, Faisalabad) while research was conducted in
other province of Pakistan i.e. NWFP, which is more than 500 km away. Again the randomly selected districts were away about 300 km from each other.

- During data collection, mostly the conditions of roads were not good and faced many times long hour’s blockade. Availability of transport in remote and hilly areas was much difficult.

- While collecting the list of farmers who were the members of FSC in both the randomly selected districts, the researcher had to visit the office of Agricultural Officer 3-4 times, because the concerned staff members were not available at the first visit.

- To confirm the names of member farmers for the preparation of final list, the researcher visited most of villages himself. It happened 4-5 times in the study districts that concerned farmers were not available, therefore next visit became compulsory.

- Most of the farmers were suspicious about the purpose of research. Therefore, a great deal of time was spent on introductory discussion to remove their suspicions.

- Some of the respondents were not available during the first visit for data collection. Therefore the researcher had to pay many visits in such cases.

- While interviewing the extension field staff (Agricultural officers and district officers), interview program postponed, as they were mostly found busy in their office work, field work or sometimes engaged in a compulsory meeting. Resultantly, the researcher had to arrange for night stay or had to come back postponing the interview for the next time.
• For the search of literature, researcher had to visit other universities and institutions like NWFP Agricultural University Peshawar, Pakistan Academy for Rural Development (PARD), Peshawar and AWMI Lahore etc.
Chapter # 4

RESULTS AND DISCUSSION

The main objective of the present research study was to analyze the paradigm shift from public extension system to public-private partnership extension system in NWFP, Pakistan. For this purpose two types of respondents were selected namely farmers and extension field staff (EFS). To cope with the requirement of data collection two separate interview schedules were prepared for both types of respondents. On these basis, this chapter was divided into three parts; Part 4.1 relates to the responses of farmers, Part 4.2 deals with the responses of extension field staff, whereas, Part 4.3 depicts the focus group discussion.

Part 4.1 Farmer respondents
A. Biographical information
According to FSC bylaws all the registered farmers at each FSC level are considered as the members of general body. These members then elect their representatives as president, vice presidents, general secretary, finance secretary and information secretary at each FSC level for a period of two years. It was, therefore, deemed necessary to collect data regarding the designation/office held by the respondents. The data in this connection collected are presented in the tables below:
Table 4.1.1: Frequency distribution of the farmer respondents according to their designation with respect to FSC

<table>
<thead>
<tr>
<th>Designation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a- Office bearer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>President</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>Vice president</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>General secretary</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>Finance secretary</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>Information secretary</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>b- Ordinary members</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total members</strong></td>
<td><strong>491</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.1.1 indicates that all the farmer respondents were members of FSC and out of them 4.0% of the farmer respondents held different posts like president, vice president, general secretary, finance secretary and information secretary in their respective FSC’s.

Education is the process, which brings desired changes in the behavior of an individual. Educated farmers are expected to have more favorable attitude towards plant protection measures as compared to uneducated ones (Hassan, 1991). The respondents were asked about their education level and the data in this regard are presented in Table 4.1.2.

Table 4.1.2: Frequency distribution of the farmer respondents according to their educational level

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>202</td>
<td>41.1</td>
</tr>
<tr>
<td>Primary</td>
<td>103</td>
<td>21.0</td>
</tr>
<tr>
<td>Middle</td>
<td>70</td>
<td>14.3</td>
</tr>
<tr>
<td>Matric</td>
<td>45</td>
<td>9.2</td>
</tr>
<tr>
<td>Intermediate</td>
<td>31</td>
<td>6.3</td>
</tr>
<tr>
<td>Bachelor</td>
<td>24</td>
<td>4.9</td>
</tr>
<tr>
<td>Master</td>
<td>16</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>491</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 5.06 years  
Range = 0-16 years

Table 4.1.2 reveals that 41.1% of the farmer respondents were illiterate. However rest (58.9%) of the farmer respondents had obtained education from primary to master level.
These results are ten percentile lower than that of Hussain (2004) who found that 32.1% of the respondents were illiterate. The mean education of farmer respondents was 5.06 years with range 0-16 years.
Figure 4.1: Educational level of farmer respondents
It is clear that in study area the educational level among male respondents was higher than that of overall male literacy rate of the province (54.0%). This ratio was again a bit higher than national level, which is 56.0 % (Government of Pakistan, 2007). It may be due to the reason that the study districts have a large number of private educational institutions specially district Swabi which is nearer to big cities like Mardan and Peshawar. So, the people of this area have more access to educational opportunities as compared to other remote parts of NWFP.

Age has been found to have either positive or negative effect on adoption behaviour of the individual (Siddiqui et al., 2001). Contradictory views have also, however, been found in available literature (Kotile and Martin, 2000). In order to see the exact influence of this factor in case of population under study, information about age was collected and is presented in Table 4.1.3

Table 4.1.3: Frequency distribution of the farmer respondents according to their age

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young (18 - 24)</td>
<td>106</td>
<td>21.6</td>
</tr>
<tr>
<td>Middle aged (25-50)</td>
<td>281</td>
<td>57.2</td>
</tr>
<tr>
<td>Old (above 50)</td>
<td>104</td>
<td>21.2</td>
</tr>
<tr>
<td>Total</td>
<td>491</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean = 46.91 years  Range= 18-77 years

Table 4.1.3 shows that a simple majority (57.2%) of farmer respondents were middle aged i.e. 25-50 years of age. However, 21.6 % of them were young (up to 24 years) and 21.2 % old age (above 50 years). The mean age of the farmer respondents was 46.9 years with range of 18-77 years.
The above results contradict with those of Ajayi (2001a) who found that a higher proportion (63.5%) of respondents ranged between 21-30 years of age. It shows that young people are less interested in adopting agriculture as occupation as compared to old ones. It may be due to the reason that young people go out in search of high-income jobs. Another reason may be that agriculture not only require hard working but also good field experience and middle and old aged people are usually retired and have enough experience in farming, so they seem to be more interested in agricultural activities.

**Figure 4.2: Frequency distribution of farmer respondents according to their age**
Size of land holding refers to the piece of land cultivated by a farmer and his family (Nawaz 1989). It is generally observed that the farmers having large holding can take risk. Asi (1988) stated that larger the size of land holding, greater would be the adoption of agricultural innovations. The data regarding size of land holding of the respondents are presented in Table 4.1.4.

Table 4.1.4: Frequency distribution of the farmer respondents according to their land holdings

<table>
<thead>
<tr>
<th>Land holdings (acres)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (up to 12.5)</td>
<td>448</td>
<td>91.2</td>
</tr>
<tr>
<td>Medium (12.5-25)</td>
<td>33</td>
<td>6.8</td>
</tr>
<tr>
<td>Large (above 25)</td>
<td>10</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>491</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean = 13.59 acres

Table 4.1.4 reveals that overwhelming majority (91.2%) of the farmer respondents were small land holders. Only 6.8 and 2.0% of the farmer respondents were medium and large land holders, respectively. The mean land holding was 13.59 acres.

The above results are in accordance with those of Lee and Stewart (1983) who found that farmers with small land holdings have minimum technology adoption rates. It means that ownership factor influences farmers’ attitude towards adoption of new technologies on their farms. This situation may also be due to the fact that such farmers have lower approach to purchase quality inputs. It may also be due to the reason that most of the advanced technology is designed for large piece of land.

The tenure ship means the manners and conditions of land holding and property rights of the individual to the land (Munir, 1988). In our country the common types of land tenure ship are owners, owner-cum tenants, and tenants. It is assumed that owner cultivators are better than tenants and owner-cum tenants with regard to adoption of improved practices.
Data regarding tenancy status of the respondents are presented in table 4.1.5.

Table 4.1.5: Frequency distribution of the farmer respondents according to their type of tenure

<table>
<thead>
<tr>
<th>Type of tenure</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>452</td>
<td>92.0</td>
</tr>
<tr>
<td>Tenant</td>
<td>24</td>
<td>4.9</td>
</tr>
<tr>
<td>Owner cum tenant</td>
<td>15</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>491</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.1.5 depicts that overwhelming majority (92.0%) of farmer respondents were owner, followed by tenant and owner-cum-tenant as reported by 4.9% and 3.1% of the respondents, respectively.

The above results are in accordance with those of Lee and Stewart (1983) who reported that ownership had significant impact on the attitudes of farmers to adopt new agricultural practices as compared to those who were not owners. In daily life we observe that an individual gives more importance to his belongings rather than others and incur more resources as compared to others’ property. The same was found in this study as overwhelming majority (owners) were more eager to adopt new technologies as compared to tenants and owners cum tenants by joining FSCs.

B. General Information

Table 4.1.6: Frequency distribution of the farmer respondents according to their year of joining the FSC

<table>
<thead>
<tr>
<th>Year of joining</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>64</td>
<td>13.0</td>
</tr>
<tr>
<td>2001</td>
<td>63</td>
<td>12.8</td>
</tr>
<tr>
<td>2002</td>
<td>89</td>
<td>18.1</td>
</tr>
<tr>
<td>2003</td>
<td>49</td>
<td>10.0</td>
</tr>
<tr>
<td>2004</td>
<td>70</td>
<td>14.3</td>
</tr>
</tbody>
</table>
Table 4.1.6 indicates that majority of the farmer respondents joined FSC from year 2000-2006 and highest percentage (19.8%) was achieved during year 2005.

The rise of membership during year 2005 was mainly in district Lukki Marwat and it was due to the incentive specially provided by the Minister of Agriculture at that time in the respective district. This incentive comprised 2 bags of Urea and 2 bags of DAP along with 50 Kg and 100 Kg of wheat seed in irrigated and rain fed areas, respectively, for FSC registered growers, as explored by researcher himself. This data also show the framers’ trend towards public-private partnership through registration at FSC forum from the year 2000 to 2006. As FSC idea flourished, more farmers registered at FSC, which ultimately boosted the public-private partnership.

Table 4.1.7: Frequency distribution of the farmer respondents according to their awareness about their relevant AO and FA

<table>
<thead>
<tr>
<th>Response</th>
<th>AO n</th>
<th>%</th>
<th>FA n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>476</td>
<td>96.9</td>
<td>484</td>
<td>98.6</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>3.1</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>491</td>
<td>100.0</td>
<td>491</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.1.7 depicts that an overwhelming majority (96.9% and 98.6%) of the farmer respondents knew their respective agriculture officers and field assistants, respectively. However, negligible (3.1% and 1.4%) farmer respondents were not aware of their AO’s and FA’s. It might be due to the reason that these farmer respondents occasionally attend the meetings of FSC.
The above research findings are in line with those of Siddiqui (2006) who found that a fair majority (57.2%) of the respondents knew the FA’s both by face and name.

Table 4.1.8: Frequency distribution of the farmer respondents according to the methods by which they were motivated for the membership

<table>
<thead>
<tr>
<th>Methods of motivation</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Personal contacts</td>
<td>474</td>
<td>96.5</td>
<td>17</td>
</tr>
<tr>
<td>Group contacts</td>
<td>44</td>
<td>9.0</td>
<td>447</td>
</tr>
<tr>
<td>Mass contacts</td>
<td>32</td>
<td>6.5</td>
<td>459</td>
</tr>
</tbody>
</table>

Table 4.1.8 reveals that majority (96.5%) of the farmer respondents were motivated through personal contacts for the membership of FSC. However, 9.0 and 6.5% of them were inspired through group and mass contacts for membership of FSC.

Personal contacts still have their importance, which depicts from present research results. This also shows that farmers had full confidence in extension agents. These extension agents worked in their areas for a long time and their credibility is still high in the eyes of farmers (Muhammad, 2001, Choudhary, 1993). On the other hand, the low percentage of usage of group and mass contact methods for motivational purpose on the side of extension workers was due to low or no access to these methods because electronic and print media were mainly utilized by the Department on provincial level and broadcast / telecast at same level for the betterment of farming community.
Table 4.1.9: Frequency distribution of the farmer respondents according to their increase in area sown and average yield of different crops

<table>
<thead>
<tr>
<th>Crops</th>
<th>Area sown increased</th>
<th></th>
<th>Average yield increased</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Wheat</td>
<td>208</td>
<td>42.4</td>
<td>376</td>
<td>76.6</td>
</tr>
<tr>
<td>Maize</td>
<td>207</td>
<td>42.2</td>
<td>468</td>
<td>95.3</td>
</tr>
<tr>
<td>Canola / oilseed</td>
<td>406</td>
<td>82.7</td>
<td>449</td>
<td>91.4</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>250</td>
<td>50.9</td>
<td>354</td>
<td>72.1</td>
</tr>
<tr>
<td>Tobacco</td>
<td>247</td>
<td>50.3</td>
<td>300</td>
<td>61.1</td>
</tr>
<tr>
<td>Vegetables</td>
<td>259</td>
<td>52.7</td>
<td>287</td>
<td>58.5</td>
</tr>
<tr>
<td>Fruits</td>
<td>130</td>
<td>26.5</td>
<td>255</td>
<td>51.9</td>
</tr>
</tbody>
</table>

Table 4.1.9 indicates that area shown for all crops was increased as reported by almost half of the farmer respondents except canola/oil seed because Government took much interest in increasing the yield and area of this crop. However, large majority of the farmer respondents achieved high average yields of various crops after joining the FSC and it might be due to the better delivery of messages and recommendations of these crops by the extension specialists in training sessions of FSC.

The area sown did not increase as compared to average yield because land is constraint and is much more limited due to mountainous terrain. But increase in average yield showed that the transfer of technology along with effective message and acting upon it by farmers made the increase possible.
Figure 4.3: Increase in yield and area sown of farmer respondents
Table 4.1.10: Frequency distribution, mean, standard deviation and rank order of the farmer respondents according to their response concerning agricultural inputs provided to them under FSC  

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Response</th>
<th>Extent of provision</th>
<th>Mean</th>
<th>SD</th>
<th>R.O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Seed</td>
<td>49</td>
<td>1</td>
<td>100.</td>
<td>6.9</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>49</td>
<td>1</td>
<td>100.</td>
<td>10.</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Pesticides</td>
<td>49</td>
<td>1</td>
<td>100.</td>
<td>11.</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.1.10 shows that under FSC the most provided agricultural input was seed as reported by farmer respondents that ranked 1st for different crops with mean 2.827 and SD 0.718, followed by pesticides and fertilizers with means 2.756 and 2.719 with SD 0.824 and 0.854 respectively. It means that Government should pay more emphasis on the provision of fertilizer as compared to seed.

From the results it is clear that now seed and pesticides availability is satisfactory due to the efforts of FSCs. Farmers adopted the use of balanced fertilizers that was helpful in obtaining potential yield so their demand was enhanced which resulted in hampering of smooth supply and timely availability of these inputs.

Table 4.1.11: Frequency distribution, mean, standard deviation and rank order of the farmer respondents according to their response concerning farm machinery provided to them under FSC  

<table>
<thead>
<tr>
<th>Farm machinery</th>
<th>n/%</th>
<th>Response</th>
<th>Extent of provision</th>
<th>Mean</th>
<th>SD</th>
<th>R.O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>n</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n 491</td>
<td>100</td>
<td>-</td>
<td>99</td>
<td>141</td>
<td>233</td>
<td>10</td>
</tr>
<tr>
<td>Bulldozers</td>
<td>n</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n 491</td>
<td>100</td>
<td>-</td>
<td>341</td>
<td>133</td>
<td>17</td>
<td>0.0</td>
</tr>
<tr>
<td>Thresher</td>
<td>n</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n 491</td>
<td>100</td>
<td>-</td>
<td>147</td>
<td>207</td>
<td>118</td>
<td>10</td>
</tr>
<tr>
<td>Maize Sheller</td>
<td>n</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n 491</td>
<td>100</td>
<td>-</td>
<td>283</td>
<td>166</td>
<td>39</td>
<td>3.0</td>
</tr>
<tr>
<td>Wheat reaper</td>
<td>n</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n 491</td>
<td>100</td>
<td>-</td>
<td>273</td>
<td>166</td>
<td>52</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Table 4.1.11 indicates that tractor ranked 1st for farm machinery provided to farmer respondents under FSC with mean 2.363 and SD 0.880. However, thresher and wheat reaper stood on 2nd and 3rd rank as reported by farmer respondents. The reason for greater demand of tractors might be due to the crop intensification, heavy use in land reclamation, transportation of agricultural produce. Whereas thresher and wheat reaper are used once a year, so their demand was comparatively lower.

Table 4.1.12: Frequency distribution, mean, standard deviation and rank order of the farmer respondents according to their response concerning skill development provided to them under FSC n = 491

<table>
<thead>
<tr>
<th>Skills</th>
<th>n / %</th>
<th>Response</th>
<th>Extent of provision</th>
<th>Mean</th>
<th>SD</th>
<th>R.O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Ploughing methods</td>
<td>491</td>
<td>100.0</td>
<td>83</td>
<td>184</td>
<td>136</td>
<td>67</td>
</tr>
<tr>
<td>Harvesting methods</td>
<td>491</td>
<td>100.0</td>
<td>16.9</td>
<td>37.5</td>
<td>27.7</td>
<td>13.6</td>
</tr>
<tr>
<td>Threshing skills</td>
<td>491</td>
<td>100.0</td>
<td>17.5</td>
<td>38.7</td>
<td>26.7</td>
<td>13.2</td>
</tr>
<tr>
<td>Storage skills</td>
<td>491</td>
<td>100.0</td>
<td>18.7</td>
<td>36.7</td>
<td>26.5</td>
<td>13.6</td>
</tr>
<tr>
<td>Fertilizer application skills</td>
<td>491</td>
<td>100.0</td>
<td>18.7</td>
<td>34.2</td>
<td>27.7</td>
<td>14.5</td>
</tr>
<tr>
<td>Pesticides application skills</td>
<td>491</td>
<td>100.0</td>
<td>19.1</td>
<td>35.8</td>
<td>25.7</td>
<td>15.1</td>
</tr>
<tr>
<td>Seed storage skills</td>
<td>491</td>
<td>100.0</td>
<td>18.1</td>
<td>34.4</td>
<td>26.1</td>
<td>14.9</td>
</tr>
<tr>
<td>Budding/Grafting skills</td>
<td>491</td>
<td>100.0</td>
<td>15.5</td>
<td>34.2</td>
<td>31.4</td>
<td>12.8</td>
</tr>
<tr>
<td>Farm management skills</td>
<td>491</td>
<td>100.0</td>
<td>18.1</td>
<td>34.4</td>
<td>26.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Program</td>
<td>491</td>
<td>100.0</td>
<td>18.1</td>
<td>34.4</td>
<td>26.3</td>
<td>14.3</td>
</tr>
</tbody>
</table>
Planning skills &

Need assessment

skills

<table>
<thead>
<tr>
<th>Planning skills</th>
<th>%</th>
<th>100.0</th>
<th>-</th>
<th>16.7</th>
<th>33.4</th>
<th>28.5</th>
<th>14.7</th>
<th>6.7</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Need assessment skills</th>
<th>n</th>
<th>491</th>
<th>-</th>
<th>90</th>
<th>154</th>
<th>126</th>
<th>83</th>
<th>38</th>
</tr>
</thead>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.1.12 reveals that hundred percent farmer respondents reported that they received different skill development trainings under the umbrella of FSC and ranked need assessment skills at 1st with mean 2.644 and SD 1.184, followed by program planning skills and budding/grafting skills at 2nd and 3rd rank, respectively. The need assessment skills were at top priority of the farmers. The reason for this trend might be for putting the potential at the right stream and avoid extra expenditures on undertaking unnecessary activities. Furthermore, skillfully planned programs lead to successful achievement of the intended objectives.

Table 4.1.13: Frequency distribution of the farmer respondents according to their response about the assistance they availed from the line agencies under FSC

<table>
<thead>
<tr>
<th>Line Departments</th>
<th>n/%</th>
<th>Extent of assistance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri. Research</td>
<td>n</td>
<td></td>
<td>282</td>
<td>167</td>
<td>40</td>
<td>2</td>
<td>0</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>57.4</td>
<td>34.0</td>
<td>8.1</td>
<td>0.4</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Live Stock &amp; Dairy Development</td>
<td>n</td>
<td></td>
<td>237</td>
<td>228</td>
<td>26</td>
<td>0.0</td>
<td>0.0</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>48.3</td>
<td>46.4</td>
<td>5.3</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Outreach program of NWFP Agric. University Peshawar</td>
<td>n</td>
<td></td>
<td>375</td>
<td>104</td>
<td>12</td>
<td>0.0</td>
<td>0.0</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>76.4</td>
<td>21.2</td>
<td>2.4</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>NIFA</td>
<td>n</td>
<td></td>
<td>109</td>
<td>152</td>
<td>108</td>
<td>74</td>
<td>48</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>22.2</td>
<td>31.0</td>
<td>22.0</td>
<td>15.1</td>
<td>9.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Water Management</td>
<td>n</td>
<td></td>
<td>67</td>
<td>120</td>
<td>158</td>
<td>86</td>
<td>60</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>13.6</td>
<td>24.4</td>
<td>32.2</td>
<td>17.5</td>
<td>12.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>n</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Pesticide Companies</td>
<td>n</td>
<td></td>
<td>69</td>
<td>109</td>
<td>71</td>
<td>116</td>
<td>126</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>14.1</td>
<td>22.2</td>
<td>14.5</td>
<td>23.6</td>
<td>25.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Seed Companies</td>
<td>n</td>
<td></td>
<td>81</td>
<td>115</td>
<td>76</td>
<td>105</td>
<td>114</td>
<td>491</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td></td>
<td>16.5</td>
<td>23.4</td>
<td>15.5</td>
<td>21.4</td>
<td>23.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5
Table 4.1.13 (a): Mean, standard deviation and rank order of the farmer respondents according to their response about the assistance they availed from the line agencies under FSC

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri Research</td>
<td>1.515</td>
<td>0.662</td>
<td>6</td>
</tr>
<tr>
<td>Live Stock &amp; Dairy Development</td>
<td>1.570</td>
<td>0.593</td>
<td>5</td>
</tr>
<tr>
<td>Outreach program of NWFP Agric. University Peshawar</td>
<td>1.261</td>
<td>0.492</td>
<td>7</td>
</tr>
<tr>
<td>NIFA</td>
<td>2.784</td>
<td>1.460</td>
<td>4</td>
</tr>
<tr>
<td>Water Management Deptt.</td>
<td>3.301</td>
<td>1.472</td>
<td>1</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>0.000</td>
<td>0.000</td>
<td>0</td>
</tr>
<tr>
<td>Pesticide Companies</td>
<td>3.246</td>
<td>1.411</td>
<td>2</td>
</tr>
<tr>
<td>Seed Companies</td>
<td>3.114</td>
<td>1.424</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.1.13 and 4.1.13(a) indicate that farmer respondents ranked 1st, 2nd and 3rd the water management department, pesticide companies and seed companies with mean, 3.301, 3.246 and 3.114, and SD 1.472, 1.144 and 1.424, respectively, the line agencies from which they availed assistance under FSC. It is interesting to see that Agricultural Engineering Department did not provide any assistance to farmers as reported by farmer respondents and it might be due to that the concerned department is recently dissolved by the Government of NWFP and its machinery is utilized through Agricultural Extension Department. However, water management department and pesticides companies have achieved their goals by lining the watercourses and supplying the required pesticides respectively.

C. SWOT analysis
The SWOT analysis is mainly used in business management field (Alonge, 2006), but due to its efficacy this approach is now effectively being used in agricultural extension system (Hanyani-Mlambo, 2002). Kotler (2000) defined SWOT analysis as an overall evaluation of an organization’s strengths, weaknesses, opportunities, and threats. Different researchers categorized threats and opportunities as external or exogenous factors, and strengths and weaknesses as internal or endogenous factors as also pointed out by Karppi et al., (2001). They also defined “strength” as the resource or capacity that an organization or a system can use effectively to achieve its objectives, a “weakness” as a limitation, fault or defect in the organization that will keep it from achieving its objectives, an “opportunity” as any favorable situation in the organization’s environment and a “threat” as any unfavorable situation in the organization’s environment that is potentially demanding to its strategy. Therefore keeping in view the same conceptualization, responses of the farmer respondents were gathered regarding the strengths, weaknesses, opportunities and threats of both the extension systems under study, which is presented in Table 4.1.14 to 4.1.17.

Table 4.1.14: Frequency distribution of the farmer respondents according to their response about the strengths of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Strengths</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>1</td>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>2</td>
<td>Offers technology best fitted to the local situation.</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>3</td>
<td>Ensures timely availability of extension services</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>4</td>
<td>Farmers satisfied with the extension teaching methods used</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>5</td>
<td>Delivers extension messages effectively</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>6</td>
<td>Creates awareness about quality of inputs</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>7</td>
<td>Creates awareness about prices of inputs</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>8</td>
<td>Provides facility of farm machinery</td>
<td>491 100.0</td>
<td>0 0.00</td>
</tr>
</tbody>
</table>
Increases farm production

Provides the inputs as per farmers’ needs

Demand driven system

Develops linkages with GOs

Develops linkages with NGOs

Improves farmer-extension worker linkages

Provides guidelines regarding better marketing

Possesses inputs’ agencies for smooth supply

Designs crop demonstration activities

Trainers are equipped with professional knowledge

It is a one window operation

Farmers’ friendly system

Managed by farmers’ bodies

Table 4.1.14(a): Frequency distribution of the farmer respondents according to their response on given scale about the strengths of FSC and AED.

<table>
<thead>
<tr>
<th>S No</th>
<th>Strengths</th>
<th>Ext. System</th>
<th>n / %</th>
<th>Extent of existence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>FSC</td>
<td>n 45</td>
<td>2 198 151 59 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>9.2 7.7 40.3 30.8 12.0 100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 295</td>
<td>2 60 21 10 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>60.1 21.4 12.2 4.3 2.0 100.0</td>
</tr>
<tr>
<td>2</td>
<td>Offers technology best fitted to the local situation.</td>
<td>FSC</td>
<td>n 70</td>
<td>2 22 171 148 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>14.3 16.3 4.5 34.8 30.1 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 189</td>
<td>2 119 72 19 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>38.5 18.7 24.2 14.7 3.9 100</td>
</tr>
<tr>
<td>3</td>
<td>Ensures timely availability of extension services</td>
<td>FSC</td>
<td>n 50</td>
<td>2 198 72 139 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>10.2 6.5 40.3 14.7 28.3 100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 144</td>
<td>2 108 53 15 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>29.3 34.8 22.0 10.8 3.1 100.0</td>
</tr>
<tr>
<td>4</td>
<td>Farmers satisfied with the extension teaching methods used</td>
<td>FSC</td>
<td>n 38</td>
<td>2 125 175 96 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>7.7 11.6 25.5 35.6 19.6 100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 67</td>
<td>2 192 85 77 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>13.6 14.3 39.1 17.3 15.7 100.0</td>
</tr>
<tr>
<td>5</td>
<td>Delivers extension messages effectively</td>
<td>FSC</td>
<td>n 38</td>
<td>2 125 172 99 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>7.7 11.6 25.5 35.0 20.2 100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 69</td>
<td>2 139 112 78 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>14.1 18.9 28.3 22.8 15.9 100.0</td>
</tr>
<tr>
<td>6</td>
<td>Creates awareness about quality of inputs</td>
<td>FSC</td>
<td>n 49</td>
<td>2 168 148 75 491</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>10.0 10.4 34.2 30.1 15.3 100.0</td>
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</table>

100.0
<table>
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<tr>
<th></th>
<th>Creates awareness about prices of inputs</th>
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<th></th>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>64</td>
<td>80</td>
<td>211</td>
<td>96</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>13.0</td>
<td>16.3</td>
<td>43.0</td>
<td>19.6</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>n</td>
<td>65</td>
<td>103</td>
<td>155</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>%</td>
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<td>21.0</td>
<td>31.6</td>
<td>29.1</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>96</td>
<td>155</td>
<td>166</td>
<td>63</td>
</tr>
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<td></td>
<td>%</td>
<td>19.6</td>
<td>31.6</td>
<td>33.8</td>
<td>12.8</td>
<td>2.2</td>
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<td>Provides facility of farm machinery</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>110</td>
<td>180</td>
<td>122</td>
<td>39</td>
<td>40</td>
</tr>
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<td></td>
<td>%</td>
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<td>36.7</td>
<td>24.8</td>
<td>7.9</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>FSC</td>
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<td>81</td>
<td>130</td>
<td>139</td>
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</tr>
<tr>
<td></td>
<td>%</td>
<td>16.5</td>
<td>26.5</td>
<td>28.3</td>
<td>13.2</td>
<td>15.5</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>132</td>
<td>177</td>
<td>163</td>
<td>11</td>
</tr>
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<td>26.9</td>
<td>36.0</td>
<td>33.2</td>
<td>2.2</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Increases farm production</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>19</td>
<td>73</td>
<td>184</td>
<td>82</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>3.9</td>
<td>35.2</td>
<td>36.0</td>
<td>32.6</td>
<td>20.0</td>
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<td></td>
<td>%</td>
<td>26.9</td>
<td>36.0</td>
<td>33.2</td>
<td>2.2</td>
<td>1.6</td>
</tr>
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<td>AED</td>
<td>n</td>
<td>19</td>
<td>73</td>
<td>184</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>3.9</td>
<td>35.2</td>
<td>36.0</td>
<td>32.6</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Provides the inputs as per farmers’ needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>7</td>
<td>173</td>
<td>184</td>
<td>82</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>1.4</td>
<td>35.2</td>
<td>37.5</td>
<td>16.7</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
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<td>n</td>
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<td>92</td>
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<td>24.2</td>
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<td>n</td>
<td>198</td>
<td>154</td>
<td>91</td>
<td>28</td>
</tr>
<tr>
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<td>%</td>
<td>40.3</td>
<td>31.4</td>
<td>18.5</td>
<td>5.7</td>
<td>4.1</td>
</tr>
<tr>
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<td>Improves farmer-extension worker linkages</td>
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</tr>
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<td>25.1</td>
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<td>129</td>
<td>136</td>
<td>117</td>
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<td>27.7</td>
<td>23.8</td>
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<td>136</td>
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<td>19.1</td>
<td>26.3</td>
<td>27.7</td>
<td>23.8</td>
<td>3.1</td>
</tr>
<tr>
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<td>Provides guidelines regarding better marketing</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td>n</td>
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<td>53</td>
<td>157</td>
<td>145</td>
<td>52</td>
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<td>10.8</td>
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<td>107</td>
<td>130</td>
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<td>%</td>
<td>43.8</td>
<td>21.8</td>
<td>26.5</td>
<td>7.3</td>
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</tr>
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<td>n</td>
<td>215</td>
<td>107</td>
<td>130</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>43.8</td>
<td>21.8</td>
<td>26.5</td>
<td>7.3</td>
<td>0.6</td>
</tr>
</tbody>
</table>
### Table 4.1.14 (b): Mean, standard deviation and rank order of the farmer respondents according to their response about the strengths of FSC and AED

<table>
<thead>
<tr>
<th>Strengths</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td><strong>SD</strong></td>
<td><strong>Rank order</strong></td>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>3.29</td>
<td>1.07</td>
<td>11</td>
</tr>
<tr>
<td>Offers technology best fitted to the local situation.</td>
<td>3.50</td>
<td>1.43</td>
<td>6</td>
</tr>
<tr>
<td>Ensures timely availability of extension services</td>
<td>3.44</td>
<td>1.25</td>
<td>8</td>
</tr>
<tr>
<td>Farmers satisfied with the extension teaching methods</td>
<td>3.48</td>
<td>1.16</td>
<td>7</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5
Table 4.1.14 and 4.1.14 (a & b) reveal that the most important strength of FSC in the eyes of farmer respondents was “managed by farmers’ bodies” as ranked 1st with mean 4.05 and SD 1.29, followed by “it is a one window operation” and “develops linkages with GOs” ranked 2nd and 3rd with mean 4.00 and 3.71 along with SD 1.12 and 1.25, respectively.

On the other hand, first rank order strength of AED was “delivers extension messages effectively” with mean 3.08 and SD 1.27, followed by “farmers satisfied with the

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mean</th>
<th>SD</th>
<th>Rank</th>
<th>t-value</th>
<th>NS</th>
<th>*Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivers extension messages effectively</td>
<td>3.48</td>
<td>1.16</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creates awareness about quality of inputs</td>
<td>3.30</td>
<td>1.15</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creates awareness about prices of inputs</td>
<td>2.92</td>
<td>1.11</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides facility of farm machinery</td>
<td>2.43</td>
<td>1.16</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increases farm production</td>
<td>3.57</td>
<td>1.01</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides the inputs as per farmers’ needs</td>
<td>2.97</td>
<td>0.97</td>
<td>16</td>
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<td></td>
</tr>
<tr>
<td>Demand driven system</td>
<td>3.55</td>
<td>1.12</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develops linkages with GOs</td>
<td>3.71</td>
<td>1.25</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develops linkages with NGOs</td>
<td>2.36</td>
<td>1.16</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improves farmer-extension worker linkages</td>
<td>3.20</td>
<td>1.12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides guidelines regarding better marketing</td>
<td>3.06</td>
<td>1.23</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possesses inputs’ agencies for smooth supply</td>
<td>3.16</td>
<td>1.14</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designs crop demonstration activities</td>
<td>2.44</td>
<td>0.99</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trainers are equipped with professional knowledge</td>
<td>3.33</td>
<td>1.18</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is a one window operation</td>
<td>4.00</td>
<td>1.12</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmers’ friendly system</td>
<td>3.07</td>
<td>1.15</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managed by farmers’ bodies</td>
<td>4.05</td>
<td>1.29</td>
<td>1</td>
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</tr>
</tbody>
</table>
extension teaching methods used” and “creates awareness about quality of inputs” ranked 2nd and 3rd with mean 3.07 and 2.93 along with SD 1.22 and 1.10, respectively.

Public-private partnership had many advantages which are observed by researcher and confirmed by the quantitative data. This partnership not only released the burden of funding from the shoulders of public sector but also improved the quality of technical knowledge and supply of inputs through private to farmer relations (Qamar, 2002; Iesalnieks and Leimane, 2007). The present system enables farmers’ body to buy inputs themselves through their organization on wholesale rates which makes them able to get high quality inputs at reasonable rates. Research studies show that when inputs were made available, the yield increased (Mesic et al., 2007 and REMAN et al., 2007), and data shown in table 9 proved that when farm machinery and other inputs were provided to farmers, the yield increased.

The results of t-test showed that FSC had a positive difference than that of AED in all strengths except the statement ‘provides facility of farm machinery’.
Table 4.1.15: Frequency distribution of the farmer respondents according to their response about the weaknesses of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Weaknesses</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Neglects needy farmers</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>Lack of marketing facilities.</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>3</td>
<td>Visits are made to progressive farmers only</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>4</td>
<td>No female staff</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>5</td>
<td>Weak linkage with line agencies</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>6</td>
<td>Lack of inputs’ storage facility</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>Weak feedback system</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>8</td>
<td>Weak monitoring and evaluation system</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>9</td>
<td>No sale arrangements for surplus produce.</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>10</td>
<td>Lack of creation of leadership qualities among farming community</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>11</td>
<td>No gender mobilization</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>12</td>
<td>No separate meeting place for female farmers</td>
<td>491</td>
<td>100.0</td>
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<tr>
<td>13</td>
<td>Programs are not carried out at proper time</td>
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<tr>
<td>14</td>
<td>Develops no linkages with the market</td>
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Table 4.1.15(a): Frequency distribution of the farmer respondents according to their response on given scale about the weaknesses of FSC and AED

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<th>Extent of existence</th>
<th>n / %</th>
<th>Total</th>
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<td>Neglects needy farmers</td>
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<td></td>
<td></td>
<td>AED</td>
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</tr>
<tr>
<td>2</td>
<td>Lack of marketing facilities.</td>
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</tr>
<tr>
<td>3</td>
<td>Visits are made to progressive farmers only</td>
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<tr>
<td>4</td>
<td>No female staff</td>
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Table 4.1.15: Frequency distribution of the farmer respondents according to their response about the weaknesses of FSC and AED

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<th>n / %</th>
<th>Total</th>
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<td>Visits are made to progressive farmers only</td>
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<tr>
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<td>Weak linkage with line agencies</td>
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<td>7</td>
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<td>%</td>
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<td>12.8</td>
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<td>No sale arrangements for surplus produce.</td>
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<td>Lack of creation of leadership qualities among farming community</td>
<td></td>
<td>n</td>
<td>93</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>%</td>
<td>18.9</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>4.1</td>
<td>14.1</td>
</tr>
<tr>
<td>11</td>
<td>No gender mobilization</td>
<td></td>
<td>n</td>
<td>48</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td>%</td>
<td>9.8</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>3.1</td>
<td>8.1</td>
</tr>
<tr>
<td>12</td>
<td>No separate meeting place for female farmers</td>
<td></td>
<td>n</td>
<td>43</td>
<td>59</td>
</tr>
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<td></td>
<td></td>
<td>FSC</td>
<td>%</td>
<td>8.8</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>8.8</td>
<td>12.0</td>
</tr>
<tr>
<td>13</td>
<td>Programs are not carried out at proper time</td>
<td></td>
<td>n</td>
<td>49</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td>%</td>
<td>8.6</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>10.0</td>
<td>14.3</td>
</tr>
<tr>
<td>14</td>
<td>Develops no linkages with the market</td>
<td></td>
<td>n</td>
<td>9</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td>%</td>
<td>1.8</td>
<td>28.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n</td>
<td>8</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>1.6</td>
<td>25.3</td>
<td>36.0</td>
<td>26.5</td>
</tr>
<tr>
<td>------------------</td>
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</tbody>
</table>

Scale: To some extent = 1  To below average extent = 2  To an average extent = 3  To above average extent = 4  To high extent = 5
Table 4.1.15(b): Mean, standard deviation and rank order of the farmer respondents according to their response about the weaknesses of FSC and AED

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
</tr>
<tr>
<td>Neglects needy farmers</td>
<td>2.70</td>
<td>1.21</td>
<td>12</td>
</tr>
<tr>
<td>Lack of marketing facilities</td>
<td>4.11</td>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>Visits are made to progressive farmers only</td>
<td>3.30</td>
<td>0.93</td>
<td>7</td>
</tr>
<tr>
<td>No female staff</td>
<td>4.07</td>
<td>1.16</td>
<td>3</td>
</tr>
<tr>
<td>Weak linkage with line agencies</td>
<td>3.52</td>
<td>1.23</td>
<td>4</td>
</tr>
<tr>
<td>Lack of inputs’ storage facility</td>
<td>2.14</td>
<td>1.12</td>
<td>14</td>
</tr>
<tr>
<td>Weak feedback system</td>
<td>3.15</td>
<td>1.38</td>
<td>9</td>
</tr>
<tr>
<td>Weak monitoring and evaluation system</td>
<td>2.27</td>
<td>1.25</td>
<td>13</td>
</tr>
<tr>
<td>No sale arrangements for surplus produce.</td>
<td>4.12</td>
<td>1.22</td>
<td>1</td>
</tr>
<tr>
<td>Lack of creation of leadership qualities among farming community</td>
<td>2.84</td>
<td>1.28</td>
<td>11</td>
</tr>
<tr>
<td>No gender mobilization</td>
<td>3.32</td>
<td>1.11</td>
<td>6</td>
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<tr>
<td>No separate meeting place for female farmers</td>
<td>3.47</td>
<td>1.24</td>
<td>5</td>
</tr>
<tr>
<td>Programs are not carried out at proper time</td>
<td>3.26</td>
<td>1.14</td>
<td>8</td>
</tr>
<tr>
<td>Develops no linkages with the market</td>
<td>3.11</td>
<td>0.96</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 4.1.15 and 4.1.15 (a & b) indicate that “no sale arrangements for surplus produce”, “lack of marketing facilities”, and “no female staff” with mean 4.12, 4.11 and 4.07 along with SD 1.22, 1.00 and 1.16, respectively were ranked 1st, 2nd and 3rd order weaknesses of public-private partnership (FSC) as reported by farmers respondents. The responses ranged between below average extent to high extent.

In contrast to FSC, the major weaknesses of AED were” lack of marketing facilities”, “no sale arrangement for surplus produce” and “no female staff” ranked 1st, 2nd and 3rd with mean 4.23, 4.13 and 4.07 along with SD 0.83, 1.01 and 1.16, respectively as
reported by farmers respondents. For AED, the extent of responses varied between an average extent to high extent.

The t-test results showed a positive difference between FSC and AED, where AED had more powerful weaknesses as compared to FSC.

Every program has some weaknesses along with its strengths and the same is the case with FSC. The smart return of produce is the objective of farmers and it is only possible with established marketing system. But still no sound step has been taken by the government in this regard which leads to instability in the rates of produce due to which all efforts of the farmers’ go in vain (CEEC AGRI POLICY, 2007; and Turner and Wibberlay, 2007). This instability results in low interest of farmers in different extension activities which weakens the farmer-extension worker or farmer-research relationship (Amanor and Farrington, 1991). The instability of the market may be coped with the storage of produce for sometimes (Ruben, 1992), but again it was observed by the researcher that no storage facilities still provided under FSC system. Different studies show that learning become easy with the good sitting arrangements and basic infrastructure (REMAN et al., 2007), but FSC still lacks these basic requirements like training halls and offices for staff especially for women farmers. The quality of a program can be improved and weaknesses can be minimized if there exists high quality of monitoring and evaluation system (Mesic et al., 2007), but still it was found deficient in case of public-private partnership system of extension.
Table 4.1.16: Frequency distribution of the farmer respondents according to their response about the opportunities of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Opportunities</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Enhances hidden capabilities of farmers.</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>Enhances farmers’ knowledge level</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>3</td>
<td>Meets the current agricultural challenges</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>4</td>
<td>Proves extension worker to be a good change agent</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>5</td>
<td>Offers low cost of learning</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>6</td>
<td>Provides farmers the chance of sharing their problems</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>Provides quality inputs at reasonable prices</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>8</td>
<td>Provides need based trainings</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>9</td>
<td>Small farmers are well benefited.</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>10</td>
<td>Encourages heterogeneous grouping</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>11</td>
<td>Supply oriented system</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>12</td>
<td>Arranges study tours for exchange of knowledge</td>
<td>381</td>
<td>77.59</td>
</tr>
<tr>
<td>13</td>
<td>Minimizes dealers’ monopoly on prices of agricultural inputs</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>14</td>
<td>Identifies field problems with the help of technical experts</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>15</td>
<td>Encourages farmers participation</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>16</td>
<td>Based on partnership between farmers and the government</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>17</td>
<td>Provides a forum for farmers to get together</td>
<td>491</td>
<td>100.0</td>
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Table 4.1.16(a): Frequency distribution of the farmer respondents according to their response on given scale about the opportunities of FSC and AED

<table>
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<th>S No</th>
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<th>Ext. System</th>
<th>Extent of existence</th>
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<td></td>
<td></td>
<td>FSC</td>
<td>AED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Enhances hidden capabilities of farmers.</td>
<td>44</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>64</td>
<td>13.0</td>
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<td></td>
<td></td>
<td>187</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>134</td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>62</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>491</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Enhances farmers’ knowledge level</td>
<td>59</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>94</td>
<td>19.1</td>
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<td></td>
<td></td>
<td>121</td>
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<td></td>
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<td>145</td>
<td>29.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>491</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Meets the current agricultural challenges</td>
<td>61</td>
<td>12.4</td>
</tr>
<tr>
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<td></td>
<td>62</td>
<td>12.6</td>
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<td>183</td>
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<td></td>
<td>84</td>
<td>17.1</td>
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<td></td>
<td></td>
<td>101</td>
<td>20.6</td>
</tr>
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<td></td>
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<td>491</td>
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<tr>
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<td>FSC</td>
<td>AED</td>
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<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>4</td>
<td>Proves extension worker to be a good change agent</td>
<td>n 58</td>
<td>47</td>
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<tr>
<td></td>
<td></td>
<td>% 11.8</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 69</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>% 14.1</td>
<td>16.7</td>
</tr>
<tr>
<td>5</td>
<td>Offers low cost of learning</td>
<td>n 20</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 4.1</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 180</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 36.7</td>
<td>27.7</td>
</tr>
<tr>
<td>6</td>
<td>Provides farmers the chance of sharing their problems</td>
<td>n 68</td>
<td>56</td>
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<td></td>
<td></td>
<td>% 13.8</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 150</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 30.5</td>
<td>28.3</td>
</tr>
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<td>7</td>
<td>Provides quality inputs at reasonable prices</td>
<td>n 41</td>
<td>114</td>
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<tr>
<td></td>
<td></td>
<td>% 8.4</td>
<td>23.2</td>
</tr>
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<td></td>
<td></td>
<td>n 243</td>
<td>169</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 49.5</td>
<td>34.4</td>
</tr>
<tr>
<td>8</td>
<td>Provides need based trainings</td>
<td>n 40</td>
<td>103</td>
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<td></td>
<td>% 8.1</td>
<td>21.0</td>
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<td></td>
<td></td>
<td>n 279</td>
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<td></td>
<td></td>
<td>% 56.8</td>
<td>27.7</td>
</tr>
<tr>
<td>9</td>
<td>Small farmers are well benefited</td>
<td>n 59</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 12.0</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 144</td>
<td>131</td>
</tr>
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<td></td>
<td></td>
<td>% 29.3</td>
<td>26.7</td>
</tr>
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<td>Encourages heterogeneous grouping</td>
<td>n 73</td>
<td>47</td>
</tr>
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<td></td>
<td>% 14.9</td>
<td>9.6</td>
</tr>
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<td></td>
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<td>n 150</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 30.5</td>
<td>25.5</td>
</tr>
<tr>
<td>11</td>
<td>Supply oriented system</td>
<td>n 64</td>
<td>84</td>
</tr>
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<td></td>
<td></td>
<td>% 13.0</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 391</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 79.6</td>
<td>8.8</td>
</tr>
<tr>
<td>12</td>
<td>Arranges study tours for exchange of knowledge</td>
<td>n 172</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 45.1</td>
<td>24.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 186</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 48.8</td>
<td>30.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td>AED</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>13</td>
<td>Minimizes dealers’ monopoly on prices of agricultural inputs</td>
<td>n 26</td>
<td>102 139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 5.3 20.8 28.3 30.1 15.5</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 270 96 55 40</td>
<td>30</td>
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<td>% 55.0 19.6 11.2 8.1</td>
<td>6.1</td>
</tr>
<tr>
<td>14</td>
<td>Identifies field problems with the help of technical experts</td>
<td>n 36 51 86</td>
<td>128 190</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 7.3 10.4 17.5 26.1 38.7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 245 139 52</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 49.9 28.3 10.6</td>
<td>9.0</td>
</tr>
<tr>
<td>15</td>
<td>Encourages farmers participation</td>
<td>n 15</td>
<td>140 132</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 3.1</td>
<td>28.5 26.9 28.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 160</td>
<td>211 95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 32.6</td>
<td>43.0 19.3</td>
</tr>
<tr>
<td>16</td>
<td>Based on partnership between farmers and the government Provides a forum for farmers to get together</td>
<td>n 36</td>
<td>45 33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 7.3</td>
<td>9.2 6.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 0</td>
<td>0 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 0</td>
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<td>n 16 67 74</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>% 3.3</td>
<td>13.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 163</td>
<td>129 97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% 33.2</td>
<td>26.3</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5
Table 4.1.16(b): Mean, standard deviation and rank order of the farmer respondents according to their response about the opportunities of FSC and AED

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>FSC</th>
<th>AED</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>t-test</th>
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</thead>
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<td>Mean</td>
<td>SD</td>
<td>Rank</td>
<td>Mean</td>
<td>SD</td>
<td>Rank</td>
<td></td>
</tr>
<tr>
<td>Enhances hidden capabilities of farmers.</td>
<td>3.22</td>
<td>1.11</td>
<td>11</td>
<td>2.24</td>
<td>1.31</td>
<td>8</td>
<td>12.334*</td>
</tr>
<tr>
<td>Enhances farmers’ knowledge level</td>
<td>3.31</td>
<td>1.38</td>
<td>7</td>
<td>2.34</td>
<td>1.24</td>
<td>6</td>
<td>11.316*</td>
</tr>
<tr>
<td>Meets the current agricultural challenges</td>
<td>3.21</td>
<td>1.26</td>
<td>13</td>
<td>2.44</td>
<td>1.04</td>
<td>2</td>
<td>12.803*</td>
</tr>
<tr>
<td>Proves extension worker to be a good change agent</td>
<td>3.69</td>
<td>1.39</td>
<td>5</td>
<td>3.10</td>
<td>1.29</td>
<td>1</td>
<td>9.415*</td>
</tr>
<tr>
<td>Offers low cost of learning</td>
<td>3.83</td>
<td>1.12</td>
<td>3</td>
<td>2.20</td>
<td>1.19</td>
<td>9</td>
<td>21.906*</td>
</tr>
<tr>
<td>Provides farmers the chance of sharing their problems</td>
<td>3.56</td>
<td>1.39</td>
<td>6</td>
<td>2.31</td>
<td>1.16</td>
<td>7</td>
<td>14.655*</td>
</tr>
<tr>
<td>Provides quality inputs at reasonable prices</td>
<td>3.01</td>
<td>1.05</td>
<td>16</td>
<td>1.77</td>
<td>0.99</td>
<td>13</td>
<td>18.768*</td>
</tr>
<tr>
<td>Provides need based trainings</td>
<td>3.22</td>
<td>1.18</td>
<td>12</td>
<td>1.71</td>
<td>1.05</td>
<td>14</td>
<td>21.499*</td>
</tr>
<tr>
<td>Small farmers are well benefited</td>
<td>3.23</td>
<td>1.23</td>
<td>10</td>
<td>2.40</td>
<td>1.19</td>
<td>4</td>
<td>10.903*</td>
</tr>
<tr>
<td>Encourages heterogeneous grouping</td>
<td>3.24</td>
<td>1.31</td>
<td>9</td>
<td>2.43</td>
<td>1.26</td>
<td>3</td>
<td>9.480*</td>
</tr>
<tr>
<td>Supply oriented system</td>
<td>3.04</td>
<td>1.15</td>
<td>15</td>
<td>1.40</td>
<td>0.91</td>
<td>15</td>
<td>24.278*</td>
</tr>
<tr>
<td>Arranges study tours for exchange of knowledge</td>
<td>1.57</td>
<td>1.32</td>
<td>17</td>
<td>1.38</td>
<td>1.10</td>
<td>16</td>
<td>2.469*</td>
</tr>
<tr>
<td>Minimizes dealers’ monopoly on prices of agricultural inputs</td>
<td>3.30</td>
<td>1.12</td>
<td>8</td>
<td>1.91</td>
<td>1.24</td>
<td>11</td>
<td>19.098*</td>
</tr>
<tr>
<td>Identifies field problems with the help of technical experts</td>
<td>3.78</td>
<td>1.26</td>
<td>4</td>
<td>1.85</td>
<td>1.07</td>
<td>12</td>
<td>26.371*</td>
</tr>
<tr>
<td>Encourages farmers participation</td>
<td>3.20</td>
<td>1.09</td>
<td>14</td>
<td>1.97</td>
<td>0.85</td>
<td>10</td>
<td>20.040*</td>
</tr>
<tr>
<td>Based on partnership between farmers and the government</td>
<td>4.12</td>
<td>1.29</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>17</td>
<td>-</td>
</tr>
<tr>
<td>Provides a forum for farmers to get together</td>
<td>3.85</td>
<td>1.16</td>
<td>2</td>
<td>2.35</td>
<td>1.26</td>
<td>5</td>
<td>19.450*</td>
</tr>
</tbody>
</table>

Table 4.1.16 and 4.1.16 (a & b) depict that FSC was bottom up approach and “based on partnership between farmers and the government” ranked 1st with mean 4.12 and SD 1.29. The other major opportunities were “provides a forum for farmers to get together” and “offers low cost of learning” ranked 2nd and 3rd with mean 3.85 and 3.83 along with
SD 1.29 and 1.12, respectively. The extent showed that FSC ranged between some extent to high extent.

The results of t-test showed a positive difference between two under discussion extension programmes and FSC had much more opportunities as compared to AED. For AED, “proves extension workers to be good change agent”, “meets the current agricultural challenges” and “encourages heterogeneous grouping” were raked as 1st, 2nd and 3rd order opportunities with mean 3.10, 2.44 and 2.43 along with SD 1.29, 1.04 and 1.26 respectively. Its inclination was below average extent to an average extent.

The very important opportunity provided by FSC in contrast to AED is partnership between farmers bodies (PO’s) and Government (Agricultural Extension Department). The benefits of this type of partnership are countless as it can develop a harmonic environment of cooperation between farmers, NGOs, research, extension and different other agencies (Mesic et al., 2007 and CEEC AGRI POLICY, 2007). This partnership widens the use of range of various audio-visual aids as teaching instruments in adult teaching process through utilization of local consultants (REMAN et al., 2007 and Bajramivic et al., 2007).

This public-private partnership model can be used to minimize the marketing problems of farming community. In marketing system, at different critical stages middle man develops monopoly on different essential inputs (Iesalnieks and Leimane, 2007). As discussed above, FSC helps in minimizing the monopoly of dealers on the prices of agricultural inputs.

Another powerful opportunity is that it provides forum for farmers to get together and share their knowledge that leads to the adoption of new technologies as identified by
Qamar (2006); Bajramovic et al. (2007); and REMAN (2007). Similarly using this opportunity they have been recognized as farmers’ body on the bases of which they have been succeeded to get matching grant from the government.

Table 4.1.17: Frequency distribution of the farmer respondents according to their response about the threats of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Threats</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Political instability of the country</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>Inadequate funds</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>3</td>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>4</td>
<td>Weak linkage of farmers with extension workers</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>5</td>
<td>Low literacy level among farmers</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>6</td>
<td>Lack of women participation in extension activities</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>Low preference of agriculture by youth as full time occupation</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>8</td>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>9</td>
<td>Less trend to develop farmers’ organizations among farming community</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>10</td>
<td>Pressure exerted by political and influential authorities</td>
<td>491</td>
<td>100.0</td>
</tr>
<tr>
<td>11</td>
<td>Recruitment of in-efficient extension workers in the system</td>
<td>491</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.1.17(a): Frequency distribution of the farmer respondents according to their response on given scale about the threats of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Threats</th>
<th>Ext. System</th>
<th>n / %</th>
<th>Extent of existence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>Political instability of the country</td>
<td></td>
<td>n</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>24.2</td>
</tr>
<tr>
<td>2</td>
<td>Inadequate funds</td>
<td></td>
<td>n</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>20.0</td>
</tr>
<tr>
<td>3</td>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td></td>
<td>n</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
<td>22.6</td>
</tr>
</tbody>
</table>

cxli
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Weak linkage of farmers with extension workers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 25.5 22.4 25.7 16.3 10.2 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 23.2 25.7 27.9 12.8 10.4 100.0</td>
</tr>
<tr>
<td>5</td>
<td>Low literacy level among farmers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 23.8 11.2 20.0 18.5 26.5 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 20.2 20.6 29.9 15.1 14.3 100.0</td>
</tr>
<tr>
<td>6</td>
<td>Lack of women participation in extension activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 18.5 16.1 21.8 23.0 20.6 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 20.2 17.9 20.6 22.4 18.9 100.0</td>
</tr>
<tr>
<td>7</td>
<td>Low preference of agriculture by youth as full time occupation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 8.4 16.1 36.5 16.3 22.8 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 11.0 20.2 36.0 14.1 18.7 100.0</td>
</tr>
<tr>
<td>8</td>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 14.3 27.1 29.3 16.1 13.2 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 14.3 27.1 29.3 16.1 13.2 100.0</td>
</tr>
<tr>
<td>9</td>
<td>Less trend to develop farmers' organizations among farming community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 22.8 31.8 20.0 15.5 10.0 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 12.6 12.0 20.8 22.8 31.8 100.0</td>
</tr>
<tr>
<td>10</td>
<td>Pressure exerted by political and influential authorities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 11.6 8.1 36.5 20.4 23.4 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 16.1 10.6 35.0 17.5 20.8 100.0</td>
</tr>
<tr>
<td>11</td>
<td>Recruitment of in-efficient extension workers in the system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>% 24.6 16.5 38.1 9.0 11.8 100.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>% 24.6 16.5 38.1 9.0 11.8 100.0</td>
</tr>
</tbody>
</table>
Table 4.1.17(b): Mean, standard deviation and rank order of the farmer respondents concerning their response about the threats of FSC and AED

<table>
<thead>
<tr>
<th>Threats</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
</tr>
<tr>
<td>Political instability of the country</td>
<td>2.78</td>
<td>1.32</td>
<td>7</td>
</tr>
<tr>
<td>Inadequate funds</td>
<td>2.86</td>
<td>1.39</td>
<td>6</td>
</tr>
<tr>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td>2.54</td>
<td>1.28</td>
<td>11</td>
</tr>
<tr>
<td>Weak linkage of farmers with extension workers</td>
<td>2.62</td>
<td>1.26</td>
<td>9</td>
</tr>
<tr>
<td>Low literacy level among farmers</td>
<td>3.13</td>
<td>1.52</td>
<td>3</td>
</tr>
<tr>
<td>Lack of women participation in extension activities</td>
<td>3.11</td>
<td>1.40</td>
<td>4</td>
</tr>
<tr>
<td>Low preference of agriculture by youth as full time occupation</td>
<td>3.29</td>
<td>1.22</td>
<td>2</td>
</tr>
<tr>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td>2.87</td>
<td>1.23</td>
<td>5</td>
</tr>
<tr>
<td>Less trend to develop farmers’ organizations among farming community</td>
<td>2.58</td>
<td>1.27</td>
<td>10</td>
</tr>
<tr>
<td>Pressure exerted by political and influential authorities</td>
<td>3.36</td>
<td>1.25</td>
<td>1</td>
</tr>
<tr>
<td>Recruitment of in-efficient extension workers in the system</td>
<td>2.67</td>
<td>1.27</td>
<td>8</td>
</tr>
</tbody>
</table>

The table shows that the threats for FSC as expected by farmer respondents were “pressure exerted by political influential authorities”, “low preference of agriculture by youth as full time occupation” and “low literacy level among farmers” with mean 3.36, 3.29 and 3.13 along with SD 1.25, 1.22 and 1.52, respectively. Its inclination was below average extent to an average extent.

Contrary to that, the threats expected for AED by farmer respondents were “less trend to develop farmers’ organizations among farming community”, “pressure exerted by political influential authorities” with mean 3.36, 3.29 and 3.13 along with SD 1.25, 1.22 and 1.52, respectively. Its inclination was below average extent to an average extent.
political influential authorities” and “political instability of the country” ranked 1st, 2nd and 3rd with mean 3.49, 3.16 and 3.11 along with SD 1.37, 1.32 and 1.37, respectively. The overall extent inclination showed that AED fell between below average extent to above average extent.

It was found that the majority of the threats for FSC were the same as for other programs run in past in the country or different countries of the world (Black, 2000; Feder et al., 2000; Amanor and Farrengton, 1991; Ruben, 1992; Singh and Laharia, 1992; Van den Ban and Haqkins, 1996; and Radhakrishna and Yoder, 1996). A sound political system gives surety to the smooth working of all programs in the country but unfortunately due to political instability in Pakistan, the working efficiency of Extension Department has been hindered (Bajramovic et al., 2007). The time to time changes in policy obstruct the smooth running of extension programs (Hanyai-Mlambo, 2002). The other threat is extraordinary duties which are assigned to extension staff; detract them from their major responsibilities of education of farmers (Budak et al., 2007). The low educational rate and suspicious nature of farmers hindered to unite them which developed a trend of non-formation of farmers’ organization among themselves. Keeping in view, it might be assumed that this non-cooperation behavior seems to be a threat for public-private partnership i.e. FSC. The limited financial resources provided to extension and research also cause a threat to FSC (REMAN et al., 2007). Due to these threats and non-profitable subsistence agriculture, youth are reluctant to adopt this sector as full time occupation (Mesic et al., 2007). It is observed that there is a large share of women in agriculture, but still FSC has no separate or combined program for women farmer which is a dearth state of gender inequality of present system.
Table 4.1.18: Frequency distribution of the farmer respondents according to their response concerning their suggestions for the improved model of FSC

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public-private partnership should be strengthen through permanent legislation</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>It should cope with food insecurity situation to reduce the poverty</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Number of stakeholders should be increased to reduce financial burden on government</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>It should enhance the access of farmers to improved technologies</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>It should establish the direct link with the market for the sale of surplus produce of the members</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Female staff with necessary training should be deputed for gender mobilization</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Female farmers should be encouraged to get membership</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Separate offices and training halls for FSCs should be built to run the system smoothly</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>An administrator working as government representative should be deputed permanently to supervise whole the centre</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Regular allowance or honoraria should be allocated for Management Committee Members</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>It should strengthened coordination with line agencies</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Further sub centers should be established on the convenient places</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level</strong></td>
<td>491</td>
<td>0</td>
</tr>
<tr>
<td><strong>FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs</strong></td>
<td>491</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.1.18(a): Frequency distribution of the farmer respondents on the given scale concerning their suggestions for the improvement of model of FSC

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>n</th>
<th>Extent of importance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public-private partnership should be strengthen through permanent legislation</strong></td>
<td>n</td>
<td>1 2 3 4 5 Total</td>
</tr>
<tr>
<td>%</td>
<td>7.1 16.7 32.8 22.8 20.6 100.0</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>161 21 78 4.3 16 3 4 5 Total</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>35 20 20 4.3 6.5 2.0 4.5 5.1 100.0</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>69.9 52.8 58.2 24.0 38.7 20.6 67.8 100.0</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>10 27 33 5.5 4.3 4.5 5.1 2.0 100.0</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>20 88 20 3.3 4.3 5.5 158 90.2 67.8 203 333 100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Female farmers should be encouraged to get membership</strong></td>
<td>n</td>
<td>36 45 33 88 289 491</td>
</tr>
</tbody>
</table>

cxlv
Separate offices and training halls for FSCs should be built to run the system smoothly

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 7.3</td>
<td>6.7</td>
</tr>
<tr>
<td>n 15</td>
<td>23</td>
</tr>
<tr>
<td>% 3.1</td>
<td>4.7</td>
</tr>
</tbody>
</table>

An administrator working as government representative should be deputed permanently to supervise the whole centre

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 2.2</td>
<td>4.5</td>
</tr>
<tr>
<td>n 11</td>
<td>22</td>
</tr>
</tbody>
</table>

Regular allowance or honoraria should be allocated for Management Committee Members

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 3.1</td>
<td>2.0</td>
</tr>
<tr>
<td>n 15</td>
<td>10</td>
</tr>
</tbody>
</table>

It should strengthened coordination with line agencies

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 25.9</td>
<td>12.8</td>
</tr>
<tr>
<td>n 127</td>
<td>63</td>
</tr>
</tbody>
</table>

Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 1.8</td>
<td>28.1</td>
</tr>
<tr>
<td>n 9</td>
<td>138</td>
</tr>
</tbody>
</table>

Further sub centers should be established on the convenient places

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 2.6</td>
<td>12.6</td>
</tr>
<tr>
<td>n 13</td>
<td>62</td>
</tr>
</tbody>
</table>

Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 3.5</td>
<td>11.0</td>
</tr>
<tr>
<td>n 17</td>
<td>54</td>
</tr>
</tbody>
</table>

FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs

<table>
<thead>
<tr>
<th>Membership</th>
<th>Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 17.9</td>
<td>12.6</td>
</tr>
<tr>
<td>n 88</td>
<td>62</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.1.18(b): Mean, standard deviation and rank order of the farmer respondents concerning their suggestions for the improvement of model of FSC

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Mean</th>
<th>SD</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public-private partnership should be strengthened through permanent legislation</td>
<td>3.33</td>
<td>1.18</td>
<td>13</td>
</tr>
<tr>
<td>It should cope with food insecurity situation to reduce the poverty</td>
<td>3.71</td>
<td>1.25</td>
<td>12</td>
</tr>
<tr>
<td>Number of stakeholders should be increased to reduce financial burden on government</td>
<td>4.26</td>
<td>1.10</td>
<td>7</td>
</tr>
<tr>
<td>It should enhance the access of farmers to improved technologies</td>
<td>4.47</td>
<td>0.99</td>
<td>4</td>
</tr>
<tr>
<td>It should establish the direct link with the market for the sale of surplus produce of the members</td>
<td>4.77</td>
<td>0.79</td>
<td>1</td>
</tr>
<tr>
<td>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</td>
<td>4.48</td>
<td>0.93</td>
<td>3</td>
</tr>
<tr>
<td>Female staff with necessary training should be deputed for gender mobilization</td>
<td>4.00</td>
<td>1.12</td>
<td>9</td>
</tr>
<tr>
<td>Female farmers should be encouraged to get membership</td>
<td>4.12</td>
<td>1.29</td>
<td>8</td>
</tr>
<tr>
<td>Separate offices and training halls for FSCs should be built to run the system smoothly</td>
<td>4.43</td>
<td>1.00</td>
<td>5</td>
</tr>
<tr>
<td>An administrator working as government representative should be deputed permanently to supervise the whole centre</td>
<td>4.31</td>
<td>0.90</td>
<td>6</td>
</tr>
<tr>
<td>Regular allowance or honoraria should be allocated for Management Committee Members</td>
<td>4.76</td>
<td>0.84</td>
<td>2</td>
</tr>
<tr>
<td>It should strengthened coordination with line agencies</td>
<td>3.01</td>
<td>1.52</td>
<td>15</td>
</tr>
<tr>
<td>Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership</td>
<td>3.11</td>
<td>0.96</td>
<td>14</td>
</tr>
<tr>
<td>Further sub centers should be established on the convenient places</td>
<td>3.96</td>
<td>1.14</td>
<td>10</td>
</tr>
<tr>
<td>Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level</td>
<td>3.93</td>
<td>1.10</td>
<td>11</td>
</tr>
<tr>
<td>FSC as an organization should provide opportunity to avail various</td>
<td>3.00</td>
<td>1.24</td>
<td>16</td>
</tr>
</tbody>
</table>
projects offered by GOs and NGOs

Table 4.1.18 and 4.1.18 (a & b) indicate that fifty percent of the statements related to suggestions oscillate between above average extent to high extent as reported by farmer respondents. The statements “it should establish the direct link with the market for the sale of surplus produce of the members”, “regular allowance or honoraria should be allocated for Management Committee members”, “multidisciplinary teams of researchers and extension workers should work for information generation through one window operation”, “It should enhance the access of farmers to improved technologies”, and “separate offices and training halls should be built to run the system smoothly” ranked 1st, 2nd, 3rd, 4th and 5th with mean 4.77, 4.76, 4.48, 4.47, and 4.43 along with SD 0.79, 0.84, 0.93, 0.99, and 1.00, respectively. At lowest level suggestion was “FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs.

PART 4.2 Extension field staff (EFS) respondents

A. Biographical information

Table 4.2.1: Frequency distribution of the EFS respondents according to their response about their designation

<table>
<thead>
<tr>
<th>Designation</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>District officer</td>
<td>2</td>
<td>18.2</td>
</tr>
<tr>
<td>Agricultural officer</td>
<td>9</td>
<td>81.8</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2.1 reveals that majority (81.8%) of the respondents was Agricultural Officers of the department of Agricultural Extension and rest of the respondents i.e. 18.2% were District Officers, the first supervisory level above the Agricultural Officers.

The results of the present research study shows that the Government might be interested in deputing more technical staff than the supervisory staff in order to communicate the
modern agricultural technology more effectively to farmers and improve their living standard by increasing their farm income.

Table 4.2.2: Frequency distribution of EFS respondents according to their response about their age

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young (25-35)</td>
<td>3</td>
<td>27.3</td>
</tr>
<tr>
<td>Middle aged (36-45)</td>
<td>3</td>
<td>27.3</td>
</tr>
<tr>
<td>Old (46-55)</td>
<td>5</td>
<td>45.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 43.27 years  
Range = 25-55 years

Table 4.2.2 indicates that a simple majority (54.6%) of the respondents had age group of 25-35 and 36-45 years respectively. Whereas, 45.4% of the respondents had an age group of 46-55 years i.e. old one. The aggregate of first two groups is slightly less than that of national level share (57.2%) of the population fell in the age group of 15-59 years (Government of Pakistan, 2007). The mean age was 43.27 years of EFS respondents. 

The above results are in accordance with those of Radhakrishna and Yoder (1996) who concluded that their respondents’ age ranged from 25-57 years in their study area.
Figure 4.4: Age of EFS respondents
Table 4.2.3: Frequency distribution of the EFS respondents according to their response about their highest qualification

<table>
<thead>
<tr>
<th>Qualification</th>
<th>n</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Sc.(Hons) Agriculture</td>
<td>9</td>
<td>81.8</td>
</tr>
<tr>
<td>B.Sc. (Hons.) Agriculture</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td>Intermediate</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 21 shows that an overwhelming majority (81.8%) of EFS respondents had acquired the degree of M.Sc. (Hons.) Agriculture and only 9.1% of the respondents had got the degrees of B.Sc. (Hons.) Agriculture. However, in NWF province, 25% quota was allotted for field assistants to promote as Agriculture Officer (Government of NWFP, 1992). Therefore, 9.1% of respondents had no specialization and had a minimum qualification up to intermediate level.

The results of the study are practically concerned with those of Ajayi (2001b) who reported that 15.0% of the respondents had West African Certificates, while 57.0% of respondents had B.Sc. / B. Agri. and M.Sc. degrees.
Table 4.2.4: Frequency distribution of the EFS respondents according to their response about the field of specialization

<table>
<thead>
<tr>
<th>Field of specialization</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy</td>
<td>8</td>
<td>72.7</td>
</tr>
<tr>
<td>Horticulture</td>
<td>2</td>
<td>18.2</td>
</tr>
<tr>
<td>No specialization</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2.4 depicts that majority (72.2%) of the respondents had Agronomy as a field of specialization followed by Horticulture as reported by 18.2% of the respondents. However 9.1% of the respondents had no specialization.

The above results are in line with those of Hussain (2006) who found that 45.11% of the respondents had Agronomy as their major subject during his student life at the university.

Table 4.2.5: Frequency distribution of the EFS respondents according to their response about their job experience

<table>
<thead>
<tr>
<th>Job experience (in years)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-11</td>
<td>2</td>
<td>18.2</td>
</tr>
<tr>
<td>12-22</td>
<td>4</td>
<td>36.4</td>
</tr>
<tr>
<td>23-33</td>
<td>5</td>
<td>45.5</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean = 19.72 years  
Range = 01-33 years

Table 4.2.5 indicates that 45.5% of the respondents had 23-33 years of job experience in Agriculture Department followed by 12-22 and 1-11 yeas of job experience as reported by 36.4 and 18.2% of the respondents respectively.
The results of the present study are higher than that of McCaslin and Mwangi (1994) who reported that on an average the extension workers were having 33 years of work experience.

B. General information

Table 4.2.6: Frequency distribution of the EFS respondents about their response about the satisfaction with the use of motivational procedure of FSC

<table>
<thead>
<tr>
<th>Satisfied</th>
<th>Not Satisfied</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.2.6 indicates that a majority (81.8%) of the EFS respondents were satisfied with the motivational procedure of the FSC, whereas only 18.2% of them were not satisfied with above said procedure.

It means that FSC proves itself a better vehicle for the motivation of such a farming community, which was illiterate nearly to half of its population and was under the influence of tribal and traditional taboo and customs.

Table 4.2.7: Frequency distribution of the EFS respondents according to their response about the suggestions they provided for the improvement of motivational procedure

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>More funds should be incurred with AO’s to contact the farmers</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Facility of telephone in the office of AO should be provided for contact</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>with remote areas’ farmers</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>For better mobility four wheel drive vehicle should be provided for</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>personal contacts</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Extra honoraria and residential facilities should be provided to AO’s</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2.7 reveals that the EFS respondents who were un-satisfied with the motivational procedure of FSC submitted their suggestions for improvement were more funds should
be provided to Agricultural Officers, provision of telephone facility in the office of Agric. Officer, four wheel vehicle should be provided and extra honoraria of hard area should be allocated to Agricultural officers and residential facilities.

The suggestions showed that still extension workers faced problems, which mentally and physically disturbed them to work with enthusiasm resulting in the low efficiency by EFS.

Table 4.2.8: Frequency distribution of the EFS respondents according to their response about major responsibilities assigned to AO’s under FSC

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivating farmers for enrolment in FSC</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Maintenance of the record of FSC</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
<td>9.1</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Working with FSC as technical; advisor/facilitator for seed production and other inputs</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Keeping eye on activities of Management committees of FSC</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Assisting the management committee in budget planning</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Preparation of weekly/ fortnightly reports</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Contacting with farmers under said roles</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
<td>9.1</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>Providing technical assistance to the farmers regarding various crops</td>
<td>11</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2.8 depicts that hundred percent of the respondents fulfill almost all the responsibilities assigned to them under FSC schedule except maintenance of the record of FSC and contacting with farmers under said roles as supported by 9.1% of the respondents for each responsibility. The results show that EFS were fully devoted to undertake their assigned task and duties under FSC as reported by the overwhelming majority of respondents. However, some slackers neither in maintaining record of FSC and contacting with farmers under said roles may be due to the fact that EFS were neither properly trained in dealing the accounts matters nor in undertaking appropriate extension methods for technology dissemination to the farming community. Also multiple roles and duties hampered their capabilities.

The results are in accordance with that of Roling (1986) interpreted that most of the World’s extension agencies are engaged in HRD and transferring pure technical
innovation (T.I.) to make the production of food, raw material, and export commodities as effective and efficient as possible.

Table 4.2.9: Frequency distribution of the EFS respondents according to their response about the financial resources of FSC

<table>
<thead>
<tr>
<th>Financial resources</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Enrolment fee (Rs. 100/ member)</td>
<td>11</td>
<td>100</td>
<td>11</td>
</tr>
<tr>
<td>Partnership fee (Rs. 500/ member)</td>
<td>11</td>
<td>100</td>
<td>11</td>
</tr>
<tr>
<td>Matching grant (by Government)</td>
<td>11</td>
<td>100</td>
<td>11</td>
</tr>
<tr>
<td>Loans from banks</td>
<td>3</td>
<td>27.3</td>
<td>8</td>
</tr>
<tr>
<td>Grants and donations</td>
<td>4</td>
<td>36.4</td>
<td>7</td>
</tr>
<tr>
<td>Income from sale of inputs</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.2.9 indicates that the major resources were enrolment fee, partnership fee and matching grant as reported by cent percent of the respondents. On the other hand a large majority (72.7%) of the respondents reported that income from sale of inputs was also a major financial resource of EFS other than above mentioned resources. A lesser number of the respondents also claimed grants and donations from different personalities and loans from banks as financial resource of FSC respectively.

From the results it is clear that FSC approach runs on 50:50 shares, both by the public & private sectors. This effort of the Government make the people to learn the knowledge and skill required for smooth running of a private business, and thus enabling them to get self confidence as well become self-reliant in conducting their activities and decision making regarding the management of their resources efficiently.
Figure 4.6: Financial resources of FSC
Table 4.2.10: Frequency distribution of the EFS respondents according to their response about the fund utilization of FSC

<table>
<thead>
<tr>
<th>Fund utilization</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Purchase of inputs</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Purchase of machinery</td>
<td>7</td>
<td>63.6</td>
<td>4</td>
</tr>
<tr>
<td>Purchase of fruit plants</td>
<td>6</td>
<td>54.5</td>
<td>5</td>
</tr>
<tr>
<td>Transportation charges</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Lodging and boarding</td>
<td>5</td>
<td>45.5</td>
<td>6</td>
</tr>
<tr>
<td>Refreshment</td>
<td>7</td>
<td>63.6</td>
<td>4</td>
</tr>
<tr>
<td>Study tours</td>
<td>3</td>
<td>27.3</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4.2.10 reveals that cent percent of the respondents were agreed that FSC funds were utilized for the purchase of inputs and transportation charges respectively. A majority (63.6%) of the respondents were agreed that funds were also utilized for the purchase of farm machinery and refreshment on farmer’s gatherings, respectively, for both the cases. More or less half (54.5 & 45.6%) of the respondents showed their response that funds were also utilized on the purchase of fruit plants and lodging and/or boarding respectively. However, some (27.3%) of the respondents reported that funds were utilized on the study tour of the farmers too.

The utilization of funds is one of the major aspects of FSC and it is very touchy matter with respect to bribery. Therefore it is necessary that both Government officials and farmers’ representative to keep on eye on the judicial use of the funds and tier utilization on those matters which are more urgent and having long lasting effects that also favoured the members of FSC.

Table 4.2.11: Frequency distribution of the EFS respondents according to their response about the maintenance of the fund

<table>
<thead>
<tr>
<th>Maintenance of the fund</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Government official (AO)</td>
<td>3</td>
<td>27.3</td>
</tr>
<tr>
<td>Farmers</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Both</td>
<td>8</td>
<td>72.7</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 4.2.11 shows that according to the EFS respondents, funds of the FSC were maintained by both i.e. Government officials (Agricultural Officers) and farmer’s representatives as reported by 72.7% of EFS respondents, whereas only 27.3% of the respondents claimed that the funds were maintained only by Agricultural Officers. But none of the farmers claimed that only farmers maintained the funds of FSC.

Joint maintenance of funds aimed to create self-confidence in farming community to handle their financial matters themselves. It also helps the rural masses to develop a thinking of problem solving themselves for better planning and output. Ngomane (2000) also in favour of joint venture of both public private partnerships to break through the bondage of dependency and poverty.

<table>
<thead>
<tr>
<th>Posts</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>President</td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td>Vice president</td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td>General secretary</td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td>Finance secretary</td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td>Information secretary</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.2.12 shows that all the posts of president, vice president, general secretary and finance secretary of FSC were filled as reported by 81.8% of EFS respondents. However, the post of information secretary was not filled in the case of some FSCs as reported by 27.3% of the respondents.

The results show that farming community was extremely interested in the FSC activities and so occupied almost all the posts of management committees followed by the posts of the information secretary that got a little lower response about their occupation in the
management committees. This situation may be due to the resignation from the posts for several personal engagements or other urgent as well as accidental causes however it was not a significant effect.

Table 4.2.13: Frequency distribution of the EFS respondents according to their response about the awareness of responsibilities of management committee

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Maintenance of all records of FSC in a transparent way easily accessible to each member.</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Budget planning and its approval from General Body.</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Progress and balance sheet preparation and approval from General Body.</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Procurement of Basic Seed</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Procurement of first generation seed from the registered growers.</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
</tr>
<tr>
<td>Arrangement of Seed Certification process through Federal Seed Certification and Registration Department.</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
</tr>
<tr>
<td>Obtaining agencies of fertilizer and pesticides for FSC.</td>
<td>6</td>
<td>54.5</td>
<td>5</td>
</tr>
<tr>
<td>Procurement of fertilizer and pesticides for FSC.</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Linkages with line Agencies and Market.</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
<tr>
<td>Arrangement of sale of surplus produce of farmer members in the market out side the district.</td>
<td>3</td>
<td>27.3</td>
<td>8</td>
</tr>
<tr>
<td>Arrangement for farmers training in seed technology.</td>
<td>7</td>
<td>63.6</td>
<td>4</td>
</tr>
<tr>
<td>Arrangement of exchange visits.</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
<tr>
<td>Arrangement of cleaning, transportation of Seed, storing and purchase of empty gunny bags etc.</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
</tr>
<tr>
<td>Distribution of Basic Seed and signing of TOP with the Seed-producing growers.</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
</tr>
<tr>
<td>Distribution / sale of C-1 seed to the registered members of the FSC.</td>
<td>11</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>Mobilization of the farmers’ enrolment and membership in the FSC.</td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td>Selecting seed producing growers and fields for seed production.</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
<tr>
<td>Arrangement of crop visits by technical experts.</td>
<td>8</td>
<td>72.7</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.2.13 depicts that simple to overwhelming majority (54.5-100%) of the EFS respondents was fully aware of the responsibilities of management committee. However, 72.3% of the EFS respondents were not in view to consider “arrangement of sale of surplus produce of member farmers in the market outside the district” as their
responsibility. This might be due to their un-awareness with FSC by-laws or might not get the chance to do such an activity.

The awareness level of EFS level about the responsibilities of management committee reflects that they have grip on the matter and well trained for the job facilitator that leads to the suspected success of FSC. This concept was also indirectly supported by UNDP (1991) and Reynay *et al.* (1996) who concluded that after the withdrawal of MCC’s involvement declined the income of project area farmers and they insisted the continued need of technical assistance by the EFS.

**Table 4.2.14: Frequency distribution of the EFS respondents according to their response about the intensity of meeting held by management committee**

<table>
<thead>
<tr>
<th>Time interval</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
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<td>00.0</td>
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<td>100.0</td>
<td>9</td>
<td>100.0</td>
</tr>
<tr>
<td>Fortnightly</td>
<td>4</td>
<td>44.5</td>
<td>5</td>
<td>55.5</td>
<td>9</td>
<td>100.0</td>
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<tr>
<td>Monthly</td>
<td>8</td>
<td>88.9</td>
<td>1</td>
<td>11.1</td>
<td>9</td>
<td>100.0</td>
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<tr>
<td>Quarterly</td>
<td>3</td>
<td>3.3</td>
<td>6</td>
<td>66.7</td>
<td>9</td>
<td>100.0</td>
</tr>
<tr>
<td>Special meeting</td>
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<td>77.8</td>
<td>2</td>
<td>22.2</td>
<td>9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note-1: Two district officers are excluded from data  
Note-2: Response is more than one*

Table 4.2.14 indicates that about 90% of EFS arrange the management committee’s meetings on monthly bases in their respective areas, while in some cases meetings were hold on fortnightly and quarterly bases, as reported by 44.4 and 33.3% of the respondents respectively. No respondent reported meetings on weekly bases. It means that the gap between the two meetings was at least two weeks. However about 78% of the respondents reported that special meeting was called when needed.
Table 4.2.15: Frequency distribution of the EFS respondents according to their response about the cooperation of line agencies

<table>
<thead>
<tr>
<th>Name of the agencies</th>
<th>Extent of cooperation</th>
<th>0</th>
<th>%</th>
<th>1</th>
<th>%</th>
<th>2</th>
<th>%</th>
<th>3</th>
<th>%</th>
<th>4</th>
<th>%</th>
<th>5</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agric Research</td>
<td></td>
<td>1</td>
<td>9.1</td>
<td>8</td>
<td>72.7</td>
<td>1</td>
<td>9.1</td>
<td>1</td>
<td>9.1</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Live Stock &amp; Dairy Development</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>8</td>
<td>72.7</td>
<td>2</td>
<td>18.2</td>
<td>1</td>
<td>9.1</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Outreach program of NWFP Agric. University Peshawar</td>
<td></td>
<td>7</td>
<td>63.0</td>
<td>4</td>
<td>36.0</td>
<td>0</td>
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<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>NIFA</td>
<td></td>
<td>2</td>
<td>18.2</td>
<td>3</td>
<td>27.3</td>
<td>4</td>
<td>36.4</td>
<td>2</td>
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<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Water Management Deptt:</td>
<td></td>
<td>1</td>
<td>9.1</td>
<td>2</td>
<td>18.2</td>
<td>5</td>
<td>45.5</td>
<td>3</td>
<td>27.3</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
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<td>4</td>
<td>36.4</td>
<td>5</td>
<td>45.5</td>
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<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Pesticide Companies</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>1</td>
<td>9.1</td>
<td>4</td>
<td>36.4</td>
<td>4</td>
<td>36.4</td>
<td>2</td>
<td>18.2</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
<tr>
<td>Seed Companies</td>
<td></td>
<td>1</td>
<td>9.1</td>
<td>5</td>
<td>45.5</td>
<td>2</td>
<td>18.2</td>
<td>2</td>
<td>18.2</td>
<td>1</td>
<td>9.1</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
</tr>
</tbody>
</table>

Scale: Not applicable =0 To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.2.15(a): Mean, standard deviation and rank order of the EFS respondents according to their response about the cooperation of line agencies

<table>
<thead>
<tr>
<th>Name of the agencies</th>
<th>Mean</th>
<th>SD</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agric Research</td>
<td>1.182</td>
<td>0.751</td>
<td>6</td>
</tr>
<tr>
<td>Live Stock &amp; Dairy Development</td>
<td>1.364</td>
<td>0.674</td>
<td>5</td>
</tr>
<tr>
<td>Outreach program of NWFP Agric. University Peshawar</td>
<td>0.364</td>
<td>0.505</td>
<td>8</td>
</tr>
<tr>
<td>NIFA</td>
<td>1.545</td>
<td>1.036</td>
<td>4</td>
</tr>
<tr>
<td>Water Management Deptt:</td>
<td>1.909</td>
<td>0.944</td>
<td>2</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>0.818</td>
<td>0.751</td>
<td>7</td>
</tr>
<tr>
<td>Pesticide Companies</td>
<td>2.636</td>
<td>0.924</td>
<td>1</td>
</tr>
<tr>
<td>Seed Companies</td>
<td>1.727</td>
<td>1.191</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.2.15 and 4.2.15(a) indicate that all the line agencies were not working to high extent for cooperation with FSC. However, the most effective working relationship was found in pesticide companies as reported by majority of the respondents.

In cooperation with FSC, pesticide companies ranked 1st with 2.636 mean and SD 0.924, followed by Water Management Department and seed companies respectively. The least cooperation was extended by Outreach Programme of NWFP Agricultural University Peshawar.
The research results negate the findings of Ojha and Morin (2001) who stated that when GOs, NGOs or Pos engaged in partnership, their effectiveness was generally increased.

It means that different line departments were not working satisfactorily to cooperate with the FSC. Therefore, it might be assumed that due to non-cooperation of there departments the working efficiency of FSC might not be as fruitful as expected.

Table 4.2.16: Frequency distribution of the EFS respondents according to their response about the skills given to the farmers through AED and FSC

<table>
<thead>
<tr>
<th>Skills</th>
<th>Ext. system</th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>n / %</td>
<td>Extent of provision</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>n</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td></td>
<td></td>
</tr>
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<td>%</td>
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<td>18.2</td>
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<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>9.1</td>
<td>9.1</td>
<td>54.5</td>
<td>18.2</td>
<td>9.1</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ploughing methods</td>
<td>FSC</td>
<td>n</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>27.3</td>
<td>54.5</td>
<td>18.2</td>
<td>0.0</td>
<td>100.0</td>
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<td>3</td>
<td>5</td>
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<td>6</td>
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<tr>
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<td>9.1</td>
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<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>1</td>
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<td>2</td>
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<td>100.0</td>
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<td>Fertilizer application skills</td>
<td>FSC</td>
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<td>0</td>
<td>2</td>
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<td>2</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>11</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
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<td>18.2</td>
<td>45.5</td>
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<td>100.0</td>
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</tr>
<tr>
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<td>2</td>
<td>5</td>
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</tr>
<tr>
<td></td>
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<td>100.0</td>
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<tr>
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<td>AED</td>
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<td>2</td>
<td>5</td>
<td>2</td>
<td>0</td>
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<td></td>
</tr>
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<td>%</td>
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<td>6</td>
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</tr>
<tr>
<td></td>
<td>%</td>
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<td>18.2</td>
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<tr>
<td></td>
<td>AED</td>
<td>n</td>
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<td>2</td>
<td>5</td>
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<td>11</td>
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<tr>
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<td>18.2</td>
<td>45.5</td>
<td>9.1</td>
<td>9.1</td>
<td>100.0</td>
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</table>
Table 4.2.16(a): Mean, standard deviation and rank order of the EFS respondents according to their response about the skills given to the farmers through FSC and AED

<table>
<thead>
<tr>
<th>Skills</th>
<th>FSC</th>
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<th></th>
<th></th>
<th>AED</th>
<th></th>
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<th>t-test</th>
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<tbody>
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<td></td>
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<td>SD</td>
<td>Rank order</td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
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<tr>
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<td>1</td>
<td>-2.764*</td>
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<td>3</td>
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<td>2.909</td>
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<td>0.944</td>
<td>2</td>
<td>-0.607 NS</td>
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<td>Pesticides application skills</td>
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<td>Budding/Grafting skills</td>
<td>3.364</td>
<td>1.027</td>
<td>1</td>
<td>2.727</td>
<td>1.191</td>
<td>3</td>
<td>1.322 NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Planning skills</td>
<td>2.636</td>
<td>1.027</td>
<td>5</td>
<td>2.091</td>
<td>0.944</td>
<td>6</td>
<td>1.166 NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need assessment skills</td>
<td>2.455</td>
<td>0.934</td>
<td>6</td>
<td>2.000</td>
<td>1.095</td>
<td>7</td>
<td>-2.764*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| t-value 1.812 | at p 0.05 | NS= Non-significant | *Significant |

Table 4.2.16 and 4.2.16(a) indicate that in AED extension system the EFS more emphasized on the skills related to ploughing methods and threshing skills whereas in FSC more emphasis was made on budding/grafting and storage skills as in study area orchards of different temperature fruits were abundant.

However, ploughing methods, threshing and fertilizer application skills ranked 1st and 2nd with mean 3.019 and 2.909 and SD 1.044 and 0.944 and 0.831 respectively in AED extension system. On the other hand, in case of FSC budding/grafting skills and storage skills ranked 1st and 2nd with mean 3.364 and 3.091 and SD 1.027 and 0.701, respectively.

The results show that EFS in AED gave emphasis over the farming practices like methods of ploughing, skills of fertilizers application and threshing, whereas under FSC the need of the end users was totally different. They identified preferences of
budding, grafting and storage skills as the areas they should be trained in. Now it can easily be concluded from the study results that interventions planned without farmers participation cannot fulfill the actual demands and needs of farming community and all the energies and expenditures vested for bringing positive change might go to waste.

There was a significant difference in acquiring the skills related to ploughing methods, harvesting methods and need assessment between FSC and AED. The rest of skills had a non-significant difference between two extension systems under study.

Table 4.2.17: Frequency distribution of the EFS respondents according to their response about the availability of farm machinery in AED and FSC

<table>
<thead>
<tr>
<th>Farm machinery</th>
<th>Ext. system</th>
<th>n / %</th>
<th>Extent of availability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Tractor</td>
<td>FSC</td>
<td>n</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>9.1</td>
</tr>
<tr>
<td>Bulldozers</td>
<td>FSC</td>
<td>n</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>45.5</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>36.4</td>
</tr>
<tr>
<td>Thresher</td>
<td>FSC</td>
<td>n</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>27.3</td>
</tr>
<tr>
<td>Maize Sheller</td>
<td>FSC</td>
<td>n</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>45.5</td>
</tr>
<tr>
<td>Wheat reaper</td>
<td>FSC</td>
<td>n</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>63.6</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>54.5</td>
</tr>
<tr>
<td>Ridger</td>
<td>FSC</td>
<td>n</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>63.6</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>81.8</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.2.17(a): Mean, standard deviation and rank order of the EFS respondents according to their response about the availability of farm machinery in AED and FSC
Table 4.2.17 and 4.2.17(a) depicts that tractor was most available farm machinery in both AED and FSC extension system as ranked 1st 2.727 and 2.909 means and SD 0.905 and 2.090, respectively. The other machinery included thresher, bulldozers etc. in AED, and maize sheller and thresher in FSC extension system. It means that Government was interested to increase the farm area and due to mountainous and sub-mountainous region the activity of land leveling was at highest rank. The other thing which was cleared from table showed that during AED extension system more emphasis was made of wheat as thresher ranked 2nd but in FSC more emphasis was made on maize as maize sheller replaced wheat thresher for same rank.

The results of t-test showed a non-significant difference for all the farm machinery between two under discussion extension systems except thresher that had a significant difference in two systems. It means that use of thresher increased among the farmers of FSC as compared to their counterparts.

Table 4.2.18: Frequency distribution of the EFS respondents according to their response about the methods of motivation used by AED and FSC

<table>
<thead>
<tr>
<th>Farm machinery</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
</tr>
<tr>
<td>Tractor</td>
<td>2.909</td>
<td>1.136</td>
<td>1</td>
</tr>
<tr>
<td>Bulldozers</td>
<td>1.636</td>
<td>0.674</td>
<td>4</td>
</tr>
<tr>
<td>Thresher</td>
<td>2.182</td>
<td>0.874</td>
<td>3</td>
</tr>
<tr>
<td>Maize Sheller</td>
<td>2.273</td>
<td>0.786</td>
<td>2</td>
</tr>
<tr>
<td>Wheat reaper</td>
<td>1.455</td>
<td>0.688</td>
<td>5</td>
</tr>
<tr>
<td>Ridger</td>
<td>1.636</td>
<td>0.924</td>
<td>4</td>
</tr>
</tbody>
</table>

*Significant
NS= Non-significant

<table>
<thead>
<tr>
<th>Methods of motivation</th>
<th>Ext. system</th>
<th>n / % Extent of usage</th>
<th>Mean</th>
<th>SD</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal contacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>n</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
<td>0.0</td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
<td>9.1</td>
<td>18.2</td>
</tr>
<tr>
<td>Group contacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC</td>
<td>n</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
<td>9.1</td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
<td>9.1</td>
<td>27.3</td>
</tr>
</tbody>
</table>
### Table 4.2.18(a): Mean, standard deviation and rank order of the EFS respondents according to their response about the methods of motivation used by AED and FSC

<table>
<thead>
<tr>
<th>Methods of motivation</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
</tr>
<tr>
<td>Personal contacts</td>
<td>3.364</td>
<td>0.924</td>
<td>1</td>
</tr>
<tr>
<td>Group contacts</td>
<td>3.364</td>
<td>1.362</td>
<td>1</td>
</tr>
<tr>
<td>Mass contacts</td>
<td>2.818</td>
<td>1.079</td>
<td>3</td>
</tr>
<tr>
<td>Contact/member farmers</td>
<td>3.000</td>
<td>1.095</td>
<td>1</td>
</tr>
<tr>
<td>Kisan councilor</td>
<td>2.273</td>
<td>0.905</td>
<td>4</td>
</tr>
</tbody>
</table>

| Scale: | Not applicable =0 To some extent=1 To below average extent=2 To an average extent =3 |
|        | To above average extent =4 To high extent=5 |

Table 4.2.18(a): Mean, standard deviation and rank order of the EFS respondents according to their response about the methods of motivation used by AED and FSC

<table>
<thead>
<tr>
<th>Methods of motivation</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank order</td>
</tr>
<tr>
<td>Personal contacts</td>
<td>3.364</td>
<td>0.924</td>
<td>1</td>
</tr>
<tr>
<td>Group contacts</td>
<td>3.364</td>
<td>1.362</td>
<td>1</td>
</tr>
<tr>
<td>Mass contacts</td>
<td>2.818</td>
<td>1.079</td>
<td>3</td>
</tr>
<tr>
<td>Contact/member farmers</td>
<td>3.000</td>
<td>1.095</td>
<td>1</td>
</tr>
<tr>
<td>Kisan councilor</td>
<td>2.273</td>
<td>0.905</td>
<td>4</td>
</tr>
</tbody>
</table>

| t-value 1.812 at p 0.05 | NS= Non-significant | *Significant |

Table 4.2.18 and 4.2.18(a) show that personal contacts was the most utilized contact method for the motivation of farming community in both extension systems. However, in FSC group contact methods were also enjoying the first position along with personal contact methods. Whereas, contact/ member farmers were utilized more effectively by EFS as reported by respondents in FSC in contrast to AED, where this segment was totally ineffective. These evidences showed better efficiency of FSC as compared to AED. The Kisan Councilor is the representative of farmers in present set up of Devolution Plan but not wisely utilized by both programmes, i.e. AED and FSC, however position is better in case of FSC. So, there is a need to strengthen this position and awareness may be created in rural masses for the selection of better socio-political and societal influential individuals.
The present results are also confirmed by the results of t-test which showed that contact/member farmers, group contacts and kisan councilor had significant difference between FSC and AED extension systems.

C. SWOT Analysis

In this section, discussion is made according to the responses of EFS about strengths, weaknesses, opportunities and threats regarding public-private partnership model of FSC.

Table 4.2.19: Frequency distribution of the EFS respondents according to their response about the strengths of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Strengths</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>2</td>
<td>Offers technology best fitted to the local situation.</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>3</td>
<td>Ensures timely availability of extension services</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>4</td>
<td>Farmers satisfied with the extension teaching methods used</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>5</td>
<td>Delivers extension messages effectively</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>6</td>
<td>Creates awareness about quality of inputs</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>7</td>
<td>Creates awareness about prices of inputs</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>8</td>
<td>Provides facility of farm machinery</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>9</td>
<td>Increases farm production</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>10</td>
<td>Provides the inputs as per farmers’ needs</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>11</td>
<td>Demand driven system</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>12</td>
<td>Develops linkages with GOs</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>13</td>
<td>Develops linkages with NGOs</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>14</td>
<td>Improves farmer-extension worker linkages</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>15</td>
<td>Provides guidelines regarding better marketing</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>16</td>
<td>Possesses inputs’ agencies for smooth supply</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>17</td>
<td>Designs crop demonstration activities</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>18</td>
<td>Trainers are equipped with professional knowledge</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>19</td>
<td>It is a one window operation</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>20</td>
<td>Farmers’ friendly system</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
<tr>
<td>21</td>
<td>Managed by farmers’ bodies</td>
<td>11 100.0</td>
<td>0 0.00</td>
</tr>
</tbody>
</table>
Table 4.2.19(a): Frequency distribution of the EFS respondents according to their response on given scale about the strengths of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Strengths</th>
<th>Ext. system</th>
<th>Extent of existence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>FSC</td>
<td>n / %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>n 0 1 3 3 4 11</td>
<td>% 0.0 9.1 27.3 27.3 36.4 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 3 2 3 2 1 11</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Offers technology best fitted to the local situation.</td>
<td>n 1 1 2 3 4 11</td>
<td>% 9.1 9.1 18.2 27.3 36.4 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 3 2 3 2 1 11</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ensures timely availability of extension services</td>
<td>n 1 3 2 3 2 11</td>
<td>% 9.1 27.3 18.2 27.3 18.2 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 1 2 4 3 1 11</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Farmers satisfied with the extension teaching methods used</td>
<td>n 9.1 18.2 36.4 18.2 18.2 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 2 2 3 3 1 11</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Delivers extension messages effectively</td>
<td>n 9.1 27.3 18.2 18.2 27.3 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 1 3 2 3 2 11</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Creates awareness about quality of inputs</td>
<td>n 9.1 9.1 45.5 18.2 18.2 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 3 2 2 2 2 11</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Creates awareness about prices of inputs</td>
<td>n 9.1 18.2 36.4 18.2 18.2 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n 4 3 2 1 1 11</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Provides facility of farm machinery</td>
<td>n 3 3 2 2 1 11</td>
<td>% 36.4 27.3 18.2 9.1 9.1 100</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>n 3 3 2 2 1 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>10</td>
<td>Increases farm production</td>
<td></td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.2</td>
<td>18.2</td>
</tr>
<tr>
<td>11</td>
<td>Provides the inputs as per farmers’ needs</td>
<td></td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1</td>
<td>18.2</td>
</tr>
<tr>
<td>12</td>
<td>Demand driven system</td>
<td></td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Develops linkages with GOs</td>
<td></td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27.3</td>
<td>27.3</td>
</tr>
<tr>
<td>14</td>
<td>Improves farmer-extension worker linkages</td>
<td></td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>4</td>
<td>3</td>
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<tr>
<td></td>
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<td>36.4</td>
<td>27.3</td>
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<tr>
<td>15</td>
<td>Provides guidelines regarding better marketing</td>
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<td>18.2</td>
</tr>
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<td></td>
<td>AED</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36.4</td>
<td>27.3</td>
</tr>
<tr>
<td>16</td>
<td>Possesses inputs’ agencies for smooth supply</td>
<td></td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>17</td>
<td>Designs crop demonstration activities</td>
<td></td>
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</tr>
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<td></td>
<td>AED</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>18</td>
<td>FSC</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1</td>
<td>18.2</td>
</tr>
<tr>
<td>Trainers are equipped with professional knowledge</td>
<td>AED</td>
<td>n</td>
<td>3</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>-----</td>
<td>---</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>27.3</td>
</tr>
<tr>
<td>19 It is a one window operation</td>
<td>FSC</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
</tr>
<tr>
<td>20 Farmers’ friendly system</td>
<td>FSC</td>
<td>n</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>18.2</td>
</tr>
<tr>
<td>21 Managed by farmers’ bodies</td>
<td>FSC</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>AED</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Table 4.2.19(b): Mean, standard deviation and rank order of the EFS respondents according to their response about the strengths of FSC and AED

<table>
<thead>
<tr>
<th>Strengths</th>
<th>FSC</th>
<th></th>
<th>AED</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Rank</td>
<td>Mean</td>
</tr>
<tr>
<td>Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>3.91</td>
<td>1.04</td>
<td>3</td>
<td>2.64</td>
</tr>
<tr>
<td>Offers technology best fitted to the local situation.</td>
<td>3.73</td>
<td>1.35</td>
<td>4</td>
<td>2.64</td>
</tr>
<tr>
<td>Ensures timely availability of extension services</td>
<td>3.18</td>
<td>1.33</td>
<td>10</td>
<td>3.09</td>
</tr>
<tr>
<td>Farmers satisfied with the extension teaching methods used</td>
<td>3.18</td>
<td>1.25</td>
<td>10</td>
<td>2.91</td>
</tr>
<tr>
<td>Delivers extension messages effectively</td>
<td>3.45</td>
<td>1.57</td>
<td>7</td>
<td>3.27</td>
</tr>
<tr>
<td>Creates awareness about quality of inputs</td>
<td>3.27</td>
<td>1.19</td>
<td>9</td>
<td>2.82</td>
</tr>
<tr>
<td>Creates awareness about prices of inputs</td>
<td>3.18</td>
<td>1.25</td>
<td>10</td>
<td>2.27</td>
</tr>
<tr>
<td>Provides facility of farm machinery</td>
<td>2.55</td>
<td>1.37</td>
<td>11</td>
<td>2.27</td>
</tr>
<tr>
<td>Increases farm production</td>
<td>2.55</td>
<td>1.37</td>
<td>11</td>
<td>3.00</td>
</tr>
<tr>
<td>Provides the inputs as per farmers’ needs</td>
<td>3.55</td>
<td>1.44</td>
<td>6</td>
<td>2.18</td>
</tr>
<tr>
<td>Demand driven system</td>
<td>3.64</td>
<td>1.63</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Develops linkages with GOs</td>
<td>3.36</td>
<td>1.63</td>
<td>8</td>
<td>2.27</td>
</tr>
<tr>
<td>Develops linkages with NGOs</td>
<td>3.55</td>
<td>1.44</td>
<td>6</td>
<td>2.55</td>
</tr>
<tr>
<td>Improves farmer-extension worker linkages</td>
<td>3.18</td>
<td>1.25</td>
<td>10</td>
<td>2.09</td>
</tr>
<tr>
<td>Provides guidelines regarding better marketing</td>
<td>3.18</td>
<td>1.54</td>
<td>10</td>
<td>2.09</td>
</tr>
<tr>
<td>Possesses inputs’ agencies for smooth supply</td>
<td>3.55</td>
<td>1.29</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Designs crop demonstration activities</td>
<td>3.73</td>
<td>1.35</td>
<td>4</td>
<td>3.73</td>
</tr>
<tr>
<td>Trainers are equipped with professional knowledge</td>
<td>3.27</td>
<td>1.27</td>
<td>9</td>
<td>2.55</td>
</tr>
<tr>
<td>It is a one window operation</td>
<td>4.36</td>
<td>0.81</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Farmers’ friendly system</td>
<td>3.73</td>
<td>1.35</td>
<td>4</td>
<td>2.73</td>
</tr>
<tr>
<td>Managed by farmers’ bodies</td>
<td>4.82</td>
<td>0.40</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*t-value 1.812 at p 0.05 NS= Non-significant *Significant
The table 4.2.19 and 4.2.19 (a & b) depict that the most important strength for FSC was “managed by farmers’ bodies” which ranked 1st with means 82 and SD 0.40 followed by “it is a one window operation “ and “uses the problem solving approach” which ranked 2nd and 3rd with means 4.36, and 3.91 with SD 0.81 and 1.38 respectively. The general inclination for FSC ranged from an average extent to high extent.

On the other hand major strengths of AED were “trainers are equipped with professional knowledge”, “delivers extension messages effectively”, ensures timely availability of extension services” ranked 1st, 2nd and 3rd with means 3.73, 3.27 and 3.09 along with SD 1.35, 1.42 and 1.14 respectively. The overall picture for AED showed that the strength oscillates between average extent to above average extent.

The new system of FSC is an experimental design of public-private partnership and is first effort in this connection in the field of Agricultural Extension in NWFP province of Pakistan. There are still weaknesses as diagnosed by researcher in coming pages in the system, but due to its strengths it seems necessary to run the program for the long time, so as after removal of weaknesses it is hoped that it would be a good program in the dissemination of information among farming communities as pointed out by Dialmini and Toeh (2001). Rivera et al. (2000) also in the favour that Public-private partnership was much powerful in the dissemination of improved technologies to farmers as compared to public sector (Swanson and Samy, 2002). Ojha and Morin (2001), who worked on partnerships between governmental organizations (GO’s), non governmental organizations (NGO’s) and private sector organizations (PO’s) also concluded that single agency can not perform as effectively as a group of agencies i.e. PPP.
The other studies which solidify the concept of PPP were given by Marsh and Pannell (1999), Smith (2001), World Bank (2002), Richter (2003), and Spielman and Grebmer (2004). In the present study it is clear from the data that public-private partnership had more powerful strengths as compared to AED as reported by the EFS respondents who had more technical knowledge in contrast to farmer respondents.

The results of t-test showed a mixed trend of strengths between FSC and AED but FSC had more powerful strengths as compared to AED.

**Table 4.2.20: Frequency distribution of the EFS respondents according to their response about the weaknesses of FSC and AED**

<table>
<thead>
<tr>
<th>S No</th>
<th>Weaknesses</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Neglects needy farmers</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Lack of marketing facilities</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Visits are made to progressive farmers only</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>No female staff</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Weak linkage with line agencies</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Lack of inputs’ storage facility</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Weak feedback system</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Weak monitoring and evaluation system</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>No sale arrangements for surplus produce</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Lack of creation of leadership qualities among farming community</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>No gender mobilization</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>No separate meeting place for female farmers</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Programs are not carried out at proper time</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>Develops no linkages with the market</td>
<td>11</td>
<td>0</td>
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</table>

**Table 4.2.20(a): Frequency distribution of the EFS respondents according to their response on given scale about the weaknesses of FSC and AED**

<table>
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<tr>
<th>S No</th>
<th>Weaknesses</th>
<th>Ext. system</th>
<th>n / %</th>
<th>Extent of existence</th>
<th>Total</th>
</tr>
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<tr>
<td></td>
<td></td>
<td>FSC</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>Neglects needy farmers</td>
<td></td>
<td>n 4</td>
<td>2 3 2 0 11</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% 36.4 18.2 27.3 18.2 0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n 1</td>
<td>1 2 3 4 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% 9.1 9.1 18.2 27.3 36.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Lack of marketing facilities</td>
<td>FSC</td>
<td>n 0</td>
<td>1 3 2 5 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% 0.0 9.1 27.3 18.2 45.5</td>
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<td></td>
</tr>
<tr>
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<td>FSC</td>
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<td>2</td>
</tr>
<tr>
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<td>-----</td>
<td>-----</td>
<td>---</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>3</td>
<td>Visits are made to progressive farmers only</td>
<td>AED</td>
<td>1</td>
<td>9.1</td>
<td>18.2</td>
</tr>
<tr>
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<td></td>
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<td>0</td>
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<td></td>
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<td>9.1</td>
<td>18.2</td>
</tr>
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<td></td>
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<td></td>
<td></td>
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<td>0</td>
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</tr>
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<td>Weak linkage with line agencies</td>
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<td>9.1</td>
</tr>
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<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
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<td>Lack of inputs’ storage facility</td>
<td>AED</td>
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<td>9.1</td>
<td>9.1</td>
</tr>
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<td></td>
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<td>9.1</td>
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<td>AED</td>
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<td>9.1</td>
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<td></td>
<td></td>
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<tr>
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<td></td>
<td>2</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>8</td>
<td>Weak monitoring and evaluation system</td>
<td>AED</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
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<td>No sale arrangements for surplus produce</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>0</td>
<td>0</td>
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<tr>
<td>10</td>
<td>Lack of creation of leadership qualities among farming community</td>
<td>AED</td>
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<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FSC</td>
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<td>No gender mobilization</td>
<td>AED</td>
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<td>1</td>
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<td></td>
<td></td>
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<td></td>
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</table>
No separate meeting place for female farmers

<table>
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<tr>
<th>Weaknesses</th>
<th>FSC</th>
<th>AED</th>
<th>t-test</th>
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</thead>
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<tr>
<td></td>
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<td>SD</td>
<td>Rank order</td>
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<td>Neglects needy farmers</td>
<td>2.27</td>
<td>1.19</td>
<td>12</td>
</tr>
<tr>
<td>Lack of marketing facilities.</td>
<td>4.00</td>
<td>1.10</td>
<td>3</td>
</tr>
<tr>
<td>Visits are made to progressive farmers only</td>
<td>3.91</td>
<td>1.22</td>
<td>4</td>
</tr>
<tr>
<td>No female staff</td>
<td>4.73</td>
<td>0.65</td>
<td>1</td>
</tr>
<tr>
<td>Weak linkage with line agencies</td>
<td>3.45</td>
<td>1.29</td>
<td>7</td>
</tr>
<tr>
<td>Lack of inputs' storage facility</td>
<td>3.55</td>
<td>1.44</td>
<td>6</td>
</tr>
<tr>
<td>Weak feedback system</td>
<td>2.73</td>
<td>1.27</td>
<td>10</td>
</tr>
<tr>
<td>Weak monitoring and evaluation system</td>
<td>3.00</td>
<td>1.41</td>
<td>9</td>
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<tr>
<td>No sale arrangements for surplus produce.</td>
<td>4.36</td>
<td>0.92</td>
<td>2</td>
</tr>
<tr>
<td>Lack of creation of leadership qualities among farming community</td>
<td>3.73</td>
<td>1.35</td>
<td>5</td>
</tr>
<tr>
<td>No gender mobilization</td>
<td>3.55</td>
<td>1.44</td>
<td>6</td>
</tr>
<tr>
<td>No separate meeting place for female farmers</td>
<td>3.73</td>
<td>1.35</td>
<td>5</td>
</tr>
<tr>
<td>Programs are not carried out at proper time</td>
<td>2.64</td>
<td>1.21</td>
<td>11</td>
</tr>
<tr>
<td>Develops no linkages with the market</td>
<td>3.36</td>
<td>1.03</td>
<td>8</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.2.20(b): Mean, standard deviation and rank order of the EFS respondents according to their response about the weaknesses of FSC and AED

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5

Table 4.2.20(b): Mean, standard deviation and rank order of the EFS respondents according to their response about the weaknesses of FSC and AED
Table 4.2.20 and 4.2.20 (a & b) reveal that major weaknesses of FSC as diagnosed by EFS respondents were “no female staff”, “no sale arrangements for surplus produce”, and “lack of marketing facilities” ranked 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} with means 4.73, 4.36 and 4.00 along with SD 0.65, 0.92 and 1.10 respectively. The overall inclination oscillates between an average extent to high extent.

In case of AED, “no sale arrangements for surplus produce”, “no female staff”, and “no gender mobilization” were ranked 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} weaknesses with means 4.82, 4.73, and 4.27 along with SD 0.40, 0.65, and 1.01 respectively as reported by EFS respondents. From data it was clear that overall situation showed same position as of FSC i.e. an average extent to high extent.

The above results are in line with those of Swanson and Samy (2002) who identified lack of marketing as a weakness of various extension systems.

It is evident that every program has some weaknesses and both PPP and AED are not out of bound. Due to social norms of Pathan society which does not permit females to do job especially in the rural areas and males ego created a problem of female staff in both the systems but hope is arising that recently few females are employed as agriculture officers (Government of NWFP, 2003) under AED that may results in compensation of deficiency of female staff to some extent in the near future. It was assumed that it was a good sign for the betterment and step forward for gender equality. It was also observed that there was lack of marketing facilities in both the systems. The major breakthrough in the production of crops is impossible if farmers do not get smart profit from their produce which ultimately fulfils their basic needs and this might be achieved by sound marketing system. The other important aspects for smooth running of any system are monitoring.
and evaluation of that program. Data depicts that monitoring and evaluation got less importance in the eyes of EFS which might be the low level of diagnostic competencies of EFS.

Some of the weaknesses identified in FSC and AED were also identified by different authors in different countries in a project named “Agro economic policy analysis of the new member states, the candidate states and the countries of the western Bulkan”.

Mesic et al. (2007) diagnosed lack of systematic monitoring and quality control mechanism and lack of infrastructure (specially meeting halls) in Rumania; REMAN et al. (2007) and CEEC AGRI POLICY (2007) pointed out weak agricultural business and information system (i.e. marketing facilities) in Lithuania; and lastly Turmer and Wibberley (2007) found the lack of management/marketing inputs as the major weaknesses of extension services in Bosnia and Herzegovina.

The t-test showed that there was significant different found in some of the weaknesses between FSC and AED, this depicted that the individuals who planned the FSC had a deep eye on the weaknesses of AED and they tried their level best to minimize them in newly established programme.
Table 4.2.21: Frequency distribution of the EFS respondents according to their response about the opportunities of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Opportunities</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Enhances hidden capabilities of farmers.</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>Enhanced Farmers’ knowledge level</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>3</td>
<td>Meets the current agricultural challenges</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>4</td>
<td>Proved extension workers to be good change agents</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>5</td>
<td>Offers low cost of learning</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>6</td>
<td>Gives farmers the chance of sharing their problems</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>Provides quality inputs at reasonable prices</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>8</td>
<td>Provides need based trainings</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>9</td>
<td>Small farmers are well benefited.</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>10</td>
<td>Encourages heterogeneous grouping</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>11</td>
<td>Supply oriented system</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>12</td>
<td>Arranges study tours for exchange of knowledge</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>13</td>
<td>Minimized dealers’ monopoly on prices of agricultural inputs</td>
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<td>100.0</td>
</tr>
<tr>
<td>14</td>
<td>Identifies problems with the help of technical experts</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>15</td>
<td>Encourages farmers participation</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>16</td>
<td>Based on partnership between farmers and the government</td>
<td>11</td>
<td>100.0</td>
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<tr>
<td>17</td>
<td>Provides a forum for farmers to get together</td>
<td>11</td>
<td>100.0</td>
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Table 4.2.21(a): Frequency distribution of the EFS respondents according to their response on given scale about the opportunities of FSC and AED.

<table>
<thead>
<tr>
<th>S No</th>
<th>Opportunities</th>
<th>Ext. System</th>
<th>Extent of existence</th>
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</thead>
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<td></td>
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<td>Enhances hidden capabilities of farmers.</td>
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<td>1</td>
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<tr>
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<td></td>
<td></td>
<td>%</td>
</tr>
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<td>Enhanced Farmers’ knowledge level</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
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<tr>
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<td>Meets the current agricultural challenges</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>Proved extension workers to be good change agents</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
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<td>Offers low cost of learning</td>
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<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
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<td>Gives farmers the chance of sharing their problems</td>
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<tr>
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<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>7</td>
<td>Provides quality inputs at reasonable prices</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>8</td>
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<td></td>
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clxxix
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<th>%</th>
<th>%</th>
<th>%</th>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td></td>
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<td>1</td>
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<td>1</td>
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<td>3</td>
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<td>0</td>
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<td>Arranges study tours for exchange of knowledge</td>
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<td>n</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Minimized dealers’ monopoly on prices of agricultural inputs</td>
<td>FSC</td>
<td>n</td>
<td>1</td>
<td>1</td>
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<td>3</td>
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<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n</td>
<td>5</td>
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<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Identifies problems with the help of technical experts</td>
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<td>n</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
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<td>3</td>
<td>2</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
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<td>Based on partnership between farmers and the government</td>
<td>FSC</td>
<td>n</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>Provides a forum for farmers to get together</td>
<td>FSC</td>
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<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>n</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5
Table 4.2.21(b): Mean, standard deviation and rank order of the EFS respondents according to their response about the opportunities of FSC and AED

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>FSC Mean</th>
<th>SD</th>
<th>Rank order</th>
<th>AED Mean</th>
<th>SD</th>
<th>Rank order</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhances hidden capabilities of farmers.</td>
<td>3.18</td>
<td>1.25</td>
<td>9</td>
<td>2.55</td>
<td>1.37</td>
<td>3</td>
<td>1.075NS</td>
</tr>
<tr>
<td>Enhanced Farmers’ knowledge level</td>
<td>3.36</td>
<td>1.63</td>
<td>7</td>
<td>2.55</td>
<td>1.37</td>
<td>3</td>
<td>1.150NS</td>
</tr>
<tr>
<td>Meets the current agricultural challenges</td>
<td>3.36</td>
<td>1.63</td>
<td>7</td>
<td>2.55</td>
<td>1.37</td>
<td>3</td>
<td>1.043NS</td>
</tr>
<tr>
<td>Proved extension workers to be good change agents</td>
<td>3.82</td>
<td>1.40</td>
<td>3</td>
<td>2.55</td>
<td>1.37</td>
<td>3</td>
<td>1.813*</td>
</tr>
<tr>
<td>Offers low cost of learning</td>
<td>4.09</td>
<td>1.04</td>
<td>1</td>
<td>2.55</td>
<td>1.37</td>
<td>3</td>
<td>4.949*</td>
</tr>
<tr>
<td>Gives farmers the chance of sharing their problems</td>
<td>3.73</td>
<td>1.35</td>
<td>4</td>
<td>2.27</td>
<td>1.35</td>
<td>5</td>
<td>3.068*</td>
</tr>
<tr>
<td>Provides quality inputs at reasonable prices</td>
<td>3.73</td>
<td>1.49</td>
<td>4</td>
<td>2.27</td>
<td>1.35</td>
<td>5</td>
<td>2.281*</td>
</tr>
<tr>
<td>Provides need based trainings</td>
<td>3.36</td>
<td>1.63</td>
<td>7</td>
<td>2.73</td>
<td>1.27</td>
<td>2</td>
<td>0.921NS</td>
</tr>
<tr>
<td>Small farmers are well benefited.</td>
<td>4.09</td>
<td>1.04</td>
<td>1</td>
<td>1.91</td>
<td>1.04</td>
<td>8</td>
<td>4.519*</td>
</tr>
<tr>
<td>Encourages heterogeneous grouping</td>
<td>3.45</td>
<td>1.21</td>
<td>6</td>
<td>1.64</td>
<td>0.81</td>
<td>9</td>
<td>4.303*</td>
</tr>
<tr>
<td>Supply oriented system</td>
<td>3.27</td>
<td>1.19</td>
<td>8</td>
<td>1.55</td>
<td>0.69</td>
<td>10</td>
<td>4.503*</td>
</tr>
<tr>
<td>Arranges study tours for exchange of knowledge</td>
<td>2.27</td>
<td>1.35</td>
<td>10</td>
<td>2.27</td>
<td>1.35</td>
<td>5</td>
<td>0.000NS</td>
</tr>
<tr>
<td>Minimized dealers’ monopoly on prices of agricultural inputs</td>
<td>3.55</td>
<td>1.29</td>
<td>5</td>
<td>2.09</td>
<td>1.38</td>
<td>7</td>
<td>2.232*</td>
</tr>
<tr>
<td>Identifies problems with the help of technical experts</td>
<td>3.73</td>
<td>1.35</td>
<td>4</td>
<td>2.91</td>
<td>1.45</td>
<td>1</td>
<td>1.526NS</td>
</tr>
<tr>
<td>Encourages farmers participation</td>
<td>3.82</td>
<td>1.33</td>
<td>3</td>
<td>2.45</td>
<td>1.44</td>
<td>4</td>
<td>2.143*</td>
</tr>
<tr>
<td>Based on partnership between farmers and the government</td>
<td>4.09</td>
<td>0.83</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>11</td>
<td>16.323*</td>
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<tr>
<td>Provides a forum for farmers to get together</td>
<td>3.91</td>
<td>1.38</td>
<td>2</td>
<td>2.18</td>
<td>1.40</td>
<td>6</td>
<td>2.666*</td>
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</table>

\( t \)-value 1.812 at p 0.05  
NS= Non-significant  
*Significant

Table 4.2.21 and 4.2.21 (a & b) indicate that according to the EFS respondents the following were the opportunities that strengthen the PPP i.e. FSC. The statements “offers low cost of learning”, “based on partnership between farmers and the government”, “provides forum for farmers to get together”, “proved extension workers to be good change agents”, and “encourages farmers participation” were the top five opportunities of
the system. First two statements collectively ranked 1\textsuperscript{st} with mean 4.09 along with SD1.04 and 0.83 respectively; the 3\textsuperscript{rd} statement was ranked 2\textsuperscript{nd} with mean 3.91 along with SD1.38, and fourth and fifth statements collectively ranked 3\textsuperscript{rd} with mean 3.82 along with SD 1.40 and 1.33 respectively.

In contrast to FSC, the statements which were ranked 1\textsuperscript{st} and 2\textsuperscript{nd} by EFS were “identified problems with the help of technical experts” and “provides need based trainings” with mean 2.9 and 2.73 along with SD 1.45 and 1.27 respectively. The 3\textsuperscript{rd} rank order was collectively awarded to many of the statements as depicts from the table.

The public-private partnership has more opportunities as compared to AED which is clear from above table. The inclination of FSC was referred to high extent in contrast to AED that fall below average ranks. The results of this type of partnerships were encouraging as compared to public sector alone (Reynay \textit{et al.}, 1996, and Black, 2000). The system of public-private partnership had two way uplift of both farmers and extension workers. Farmers were able to get and avail highly sophisticated technology on one hand and on the other hand availed the timely and well planned use of extension teaching methods through public sector (Marsh and Pannell, 2000 and de Haan \textit{et al.}, 2001). However, extension personals of private extension organizations enjoyed smart salaries and prestigious status in society in contrast to their public sector counterparts, who were more technical and well organized and they had more worth in resource poor lands and farmers (Umali- Deininger, 1997, Al-Rimavi and Al-Karablieh, 2001, Anderson and Feder, 2004, and Qamar, 2005). Actually in private sector, the cost of technology was high as indicated by Schwartz (1994) and Sadighi (2004) which was unbearable for resource poor farmers. To compensate this main hurdle, it seems necessary to involve public sector and
make a public-private partnership to lower the expenses borne by the farmers. The working of FSC in NWFP might be able to prove this myth through its opportunities it provides.

There are a number of statements that showed significant differences between FSC and AED which confirms the idea that FSC extension system had more space for development as compared to AED.

Table 4.2.22: Frequency distribution of the EFS respondents according to their response about the threats of FSC and AED

<table>
<thead>
<tr>
<th>S No</th>
<th>Threats</th>
<th>FSC</th>
<th>AED</th>
</tr>
</thead>
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<td></td>
<td></td>
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<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Political instability of the country</td>
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</tr>
<tr>
<td>2</td>
<td>Inadequate funds</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>3</td>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>4</td>
<td>Weak linkage of farmers with extension workers</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>5</td>
<td>Low literacy level among farmers</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>6</td>
<td>Lack of women participation in extension activities</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>Low preference of agriculture by youth as full time occupation</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>8</td>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>9</td>
<td>Less trend to develop farmers’ organizations among farming community</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>10</td>
<td>Pressure exerted by political and influential authorities</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>11</td>
<td>Recruitment of in-efficient extension workers in the system</td>
<td>11</td>
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</tbody>
</table>
Table 4.2.22(a): Frequency distribution of the EFS respondents according to their response on given scale about the threats of FSC and AED.

<table>
<thead>
<tr>
<th>S No</th>
<th>Threats</th>
<th>Ext. System</th>
<th>n / %</th>
<th>Extent of existence</th>
<th>Total</th>
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<td>1 2 3 4 5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>27.3 9.1 18.2 27.3 18.2</td>
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</tr>
<tr>
<td>2</td>
<td>Inadequate funds</td>
<td>FSC</td>
<td>n 3</td>
<td>2 2 2 2 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>27.3 18.2 18.2 18.2 9.1</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td>FSC</td>
<td>n 3</td>
<td>2 2 3 2 1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>27.3 18.2 18.2 27.3 18.2</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Weak linkage of farmers with extension workers</td>
<td>FSC</td>
<td>n 3</td>
<td>3 3 3 2 1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>27.3 27.3 27.3 9.1 9.1</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>Low literacy level among farmers</td>
<td>FSC</td>
<td>n 2</td>
<td>2 3 2 2 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>18.2 27.3 18.2 18.2 18.2</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>Lack of women participation in extension activities</td>
<td>FSC</td>
<td>n 1</td>
<td>1 2 3 2 3</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>9.1 27.3 18.2 27.3 27.3</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>Low preference of agriculture by youth as full time occupation</td>
<td>FSC</td>
<td>n 1</td>
<td>2 3 2 2 3</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>9.1 18.2 27.3 18.2 27.3</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td>FSC</td>
<td>n 2</td>
<td>3 2 2 2 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>9.1 27.3 27.3 36.4 27.3</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Less trend to develop farmers’ organizations among farming community</td>
<td>FSC</td>
<td>n 2</td>
<td>3 3 2 2 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>18.2 27.3 18.2 27.3 9.1</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>Pressure exerted by political and influential authorities</td>
<td>FSC</td>
<td>n 2</td>
<td>3 3 3 3 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>18.2 27.3 27.3 18.2 9.1</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>Recruitment of inefficient extension workers in the system</td>
<td>FSC</td>
<td>n 3</td>
<td>2 2 2 2 2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AED</td>
<td>%</td>
<td>9.1 9.1 18.2 18.2 18.2</td>
<td>100</td>
</tr>
</tbody>
</table>
Scale: To some extent=1 To below average extent=2 To an average extent =3 To above average extent =4 To high extent=5
Table 4.2.22(b): Mean, standard deviation and rank order of the EFS respondents according to their response about the threats of FSC and AED

<table>
<thead>
<tr>
<th>Threats</th>
<th>FSC Mean</th>
<th>FSC SD</th>
<th>FSC Rank order</th>
<th>AED Mean</th>
<th>AED SD</th>
<th>AED Rank order</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political instability of the country</td>
<td>3.00</td>
<td>1.55</td>
<td>4</td>
<td>2.64</td>
<td>1.36</td>
<td>7</td>
<td>0.547 NS</td>
</tr>
<tr>
<td>Inadequate funds</td>
<td>2.82</td>
<td>1.54</td>
<td>6</td>
<td>3.09</td>
<td>1.45</td>
<td>4</td>
<td>-0.404 NS</td>
</tr>
<tr>
<td>Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td>2.64</td>
<td>1.36</td>
<td>8</td>
<td>2.64</td>
<td>1.36</td>
<td>7</td>
<td>0.000 NS</td>
</tr>
<tr>
<td>Weak linkage of farmers with extension workers</td>
<td>2.45</td>
<td>1.29</td>
<td>9</td>
<td>3.45</td>
<td>1.37</td>
<td>3</td>
<td>-1.402 NS</td>
</tr>
<tr>
<td>Low literacy level among farmers</td>
<td>2.91</td>
<td>1.45</td>
<td>5</td>
<td>3.45</td>
<td>1.37</td>
<td>3</td>
<td>-0.803 NS</td>
</tr>
<tr>
<td>Lack of women participation in extension activities</td>
<td>3.73</td>
<td>1.35</td>
<td>2</td>
<td>3.55</td>
<td>1.57</td>
<td>2</td>
<td>0.482 NS</td>
</tr>
<tr>
<td>Low preference of agriculture by youth as full time occupation</td>
<td>3.36</td>
<td>1.36</td>
<td>3</td>
<td>3.00</td>
<td>1.41</td>
<td>5</td>
<td>0.614 NS</td>
</tr>
<tr>
<td>Linguistic problems faced during farmers-facilitator interactions</td>
<td>3.00</td>
<td>1.41</td>
<td>4</td>
<td>2.91</td>
<td>1.30</td>
<td>6</td>
<td>0.191 NS</td>
</tr>
<tr>
<td>Less trend to develop farmers’ organizations among farming community</td>
<td>3.82</td>
<td>1.40</td>
<td>1</td>
<td>2.45</td>
<td>1.29</td>
<td>8</td>
<td>2.507*</td>
</tr>
<tr>
<td>Pressure exerted by political and influential authorities</td>
<td>2.73</td>
<td>1.27</td>
<td>7</td>
<td>3.55</td>
<td>1.29</td>
<td>2</td>
<td>-1.399 NS</td>
</tr>
<tr>
<td>Recruitment of in-efficient extension workers in the system</td>
<td>2.82</td>
<td>1.54</td>
<td>6</td>
<td>3.73</td>
<td>1.35</td>
<td>1</td>
<td>-1.264 NS</td>
</tr>
</tbody>
</table>

Table 4.2.22 and 4.2.22 (a & b) reveal that out of all threats, EFS ranked the statement “no trend to develop farmers’ organizations among farming community” as 1st threat with mean 3.82 along with SD 1.40 followed by “lack of women participation in extension activities” and “low preference of agriculture by youth as full time occupation” with mean 3.73 and 3.36 along with SD 1.35 and 1.36 respectively for public-private partnership.
On the other hand, the threats of AED as pointed out by EFS respondents were “recruitment of inefficient extension workers in the system”, “pressure exerted by political and influential authorities”, “lack if women participation in extension activities”, “low literacy rate among farmers” and “weak linkage of farmers with extension workers” ranked 1st for first statement, 2nd for second and third statements and 3rd for four and fifth statement with mean 3.73, 3.55 and 3.45 respectively.

The working of agricultural extension both public and private sector face multi dimensional threats and problems. The efficacy of a system always depends upon these factors. It was found that political instability badly affected the mobility of extension workers and farmers. Side by side to these political authorities or influential people (Khans) of the area, used these positions as weapon for their bad wills and changed on their advice adversely affected the working of both systems. It was observed by the researchers during data collection, farmers still were not utilizing their capabilities fully because they were still suspicious about the working of FSC. This might be due to the past experiences which were bitter in many aspects. These threats were also observed by Hanyani-Mlambo (2002) and Budak et al., (2007).

The results of t-test showed a non significant difference between FSC and AED in connection with the threats except statement “no trend to develop farmers’ organizations among farming community”.

Table 4.2.23: Frequency distribution of the EFS respondents according to their response about the suggestions for the improved model of FSC
Public-private partnership should be strengthen through permanent legislation & 11 & 100.0 & 0 & 0.00
It should cope with food insecurity situation to reduce the poverty & 11 & 100.0 & 0 & 0.00
Number of stakeholders should be increased to reduce financial burden on government & 11 & 100.0 & 0 & 0.00
It should enhance the access of farmers to improved technologies & 11 & 100.0 & 0 & 0.00
It should establish the direct link with the market for the sale of surplus produce of the members & 11 & 100.0 & 0 & 0.00
Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation & 11 & 100.0 & 0 & 0.00
Female staff with necessary training should be deputed for gender mobilization & 11 & 100.0 & 0 & 0.00
Female farmers should be encouraged to get membership & 11 & 100.0 & 0 & 0.00
Separate offices and training halls for FSCs should be built to run the system smoothly & 11 & 100.0 & 0 & 0.00
An administrator working as government representative should be deputed permanently to supervise whole the centre & 11 & 100.0 & 0 & 0.00
Regular allowance or honoraria should be allocated for Management Committee Members & 11 & 100.0 & 0 & 0.00
It should strengthened coordination with line agencies & 11 & 100.0 & 0 & 0.00
Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership & 11 & 100.0 & 0 & 0.00
Further sub centers should be established on the convenient places & 11 & 100.0 & 0 & 0.00
Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level & 11 & 100.0 & 0 & 0.00
FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs & 11 & 100.0 & 0 & 0.00

Table 4.2.23 (a): Frequency distribution of the EFS respondents concerning importance of their suggestions for the improvement of model of FSC

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public-private partnership should be strengthen through permanent legislation</td>
<td>n</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>9.1</td>
<td>18.2</td>
<td>18.2</td>
<td>18.2</td>
<td>36.4</td>
<td>100.0</td>
</tr>
<tr>
<td>It should cope with food insecurity situation to reduce the poverty</td>
<td>n</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>18.2</td>
<td>18.2</td>
<td>27.3</td>
<td>18.2</td>
<td>18.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Number of stakeholders should be increased to reduce financial burden on government</td>
<td>n</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>9.1</td>
<td>27.3</td>
<td>18.2</td>
<td>45.5</td>
<td>100.0</td>
</tr>
<tr>
<td>It should enhance the access of farmers to improved technologies</td>
<td>n</td>
<td>0.0</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>18.2</td>
<td>45.5</td>
<td>18.2</td>
<td>18.2</td>
<td>100.0</td>
</tr>
<tr>
<td>It should establish the direct link with the market for the sale of surplus produce of the members</td>
<td>n</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>18.2</td>
<td>18.2</td>
<td>18.2</td>
<td>45.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</td>
<td>n</td>
<td>0.0</td>
<td>0.0</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>0.0</td>
<td>9.1</td>
<td>18.2</td>
<td>72.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Female staff with necessary training should be deputed for gender mobilization</td>
<td>n</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>9.1</td>
<td>9.1</td>
<td>18.2</td>
<td>27.3</td>
<td>36.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Female farmers should be encouraged to get membership</td>
<td>n</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>18.2</td>
<td>9.1</td>
<td>9.1</td>
<td>18.2</td>
<td>45.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Separate offices and training halls for FSCs should be built to run the system smoothly</td>
<td>n</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>18.2</td>
<td>81.8</td>
<td>100.0</td>
</tr>
<tr>
<td>An administrator working as government</td>
<td>n</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>11</td>
</tr>
</tbody>
</table>
A representative should be deputed permanently to supervise the whole centre.

Regular allowance or honoraria should be allocated for Management Committee Members.

It should strengthen coordination with line agencies.

Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership.

Further sub centers should be established on the convenient places.

Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level.

FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs.

Table 4.2.23 (b): Mean, standard deviation and rank order of the EFS respondents concerning importance of their suggestions for the improvement of model of FSC.

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Mean</th>
<th>SD</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public-private partnership should be strengthen through permanent legislation</td>
<td>3.55</td>
<td>1.44</td>
<td>13</td>
</tr>
<tr>
<td>It should cope with food insecurity situation to reduce the poverty</td>
<td>3.00</td>
<td>1.41</td>
<td>16</td>
</tr>
<tr>
<td>Number of stakeholders should be increased to reduce financial burden on government</td>
<td>4.00</td>
<td>1.10</td>
<td>8</td>
</tr>
<tr>
<td>It should enhance the access of farmers to improved technologies</td>
<td>3.36</td>
<td>1.03</td>
<td>15</td>
</tr>
<tr>
<td>It should establish the direct link with the market for the sale of surplus produce of the members</td>
<td>3.91</td>
<td>1.22</td>
<td>9</td>
</tr>
<tr>
<td>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</td>
<td>4.64</td>
<td>0.67</td>
<td>4</td>
</tr>
<tr>
<td>Female staff with necessary training should be deputed for gender mobilization</td>
<td>3.73</td>
<td>1.35</td>
<td>11</td>
</tr>
<tr>
<td>Female farmers should be encouraged to get membership</td>
<td>3.64</td>
<td>1.63</td>
<td>12</td>
</tr>
<tr>
<td>Separate offices and training halls for FSCs should be built to run the system smoothly</td>
<td>4.82</td>
<td>0.40</td>
<td>2</td>
</tr>
<tr>
<td>An administrator working as government representative should be deputed permanently to supervise whole the centre</td>
<td>3.82</td>
<td>1.54</td>
<td>10</td>
</tr>
<tr>
<td>Regular allowance or honoraria should be allocated for Management Committee Members</td>
<td>4.36</td>
<td>0.81</td>
<td>6</td>
</tr>
<tr>
<td>It should strengthened coordination with line agencies</td>
<td>4.27</td>
<td>1.01</td>
<td>7</td>
</tr>
<tr>
<td>Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership</td>
<td>3.45</td>
<td>1.29</td>
<td>14</td>
</tr>
<tr>
<td>Further sub centers should be established on the convenient places</td>
<td>4.73</td>
<td>0.65</td>
<td>3</td>
</tr>
<tr>
<td>Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level</td>
<td>4.91</td>
<td>0.30</td>
<td>1</td>
</tr>
<tr>
<td>FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs</td>
<td>4.55</td>
<td>0.69</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 4.2.23 and 4.2.23 (a & b) reveal that about half of the suggestions ranged between above average extent to high extent as reported by EFS respondents. The statements “farmers should be encouraged to participate actively in the process of problem identification and their solution at local level”, “separate offices and training halls should be built to run the system smoothly”, “further sub centers should be established on the convenient places”, “multidisciplinary teams of researchers and extension workers should work for information generation through one window operation”, and “FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs” ranked 1st, 2nd, 3rd, 4th and 5th with mean 4.91, 4.82, 4.73, 4.64 and 4.55 along with SD 0.30, 0.40, 0.65, 0.67 and 0.69 respectively. The least important suggestion was “it should cope with food insecurity situation to reduce the poverty” which ranked 16th with mean 3.00 and SD 1.41. The above findings are partially in accordance with UNDP (1991).

**Part 4.3 Focus Group Discussion**

The results of both focus groups were analyzed carefully and displayed their views and ideas collectively in the form of following statements. The statements concerning the strengths, weaknesses, opportunities, and threats of FSC system were of two types, i.e. similar and dissimilar. Both types of statements are written separately. Again this section was divided into two sub-headings i.e. farmers and EFS respondents. The ideas of focus groups were then tallied with the quantitative data for comparison.

A. **Farmer Respondents**

The response of farmer respondents of Swabi and Lakki Marwat districts about the strengths of FSC is shown as follows.
4.3.1 Statements showing the similar views of farmer respondents about the strengths of FSC

1. Whole the program is managed by farmers
2. It is truly one window operation.
3. Cooperation of different government agencies was better than public extension system
4. Due to timely availability of inputs, farm production increased.
5. Due to better transfer of technology, farmers have become able to utilize their farm resources in judicial way.
6. As training programs were according to the local conditions, therefore it was much beneficial.
7. The quality of extension work improved.
8. Technicality of extension staff enhanced.
9. Extension messages were directly related to the local need.
10. It increased the linkage between the farmer extension workers.

4.3.2 Statements showing the different views of farmer respondents about the strengths of FSC

1. It provides chances to farmers to participate in policy-making matters.
2. As participatory approach every member of FSC had chance to express his views.
3. Partnership of public-private sector lowered the financial burden of government.
4. It helps farmers to realize them the sense of responsibility.
5. The sense of self help and self confidence is created among farmers.
6. It provides timely extension messages.
4.3.3 Statements showing the similar views of farmer respondents about the weaknesses of FSC

1. No due attention was given to the agricultural marketing system.

2. No control on instability of input prices in the market.

3. No female staff for the training of female farmers.

4. Lack of gender mobilization.

5. The inherited problems of weak monitoring and evaluation system still prevail.

6. Extension field staff was not so trained to develop leadership qualities among farming community.

7. Weak feedback system.

4.3.4 Statements showing the dissimilar views of farmer respondents about the weaknesses of FSC

1. Inadequate funds.

2. Unclear agricultural policies.

3. Low quality infrastructure

4. Imbalanced supply of inputs.

5. It is not fully demand driven system.

4.3.5 Statements showing the similar views of farmer respondents about the opportunities of FSC

1. Its basis are powerful due to the partnership of farmers and the government.

2. Farmers are given chance to share their ideas and experiences.

3. Farmers are trained to identify the field problems.

4. The cost of learning became lower due to sharing of private sector.
5. It provides opportunity of sharing of experiences of both public and private sector.

6. Farmers are given chance to enhance their local knowledge by learning new skills.

7. It polishes the qualities of extension workers.

8. The quality of delivery of extension messages has become better.

9. Small landholders are also benefited.

10. Farmers-to-farmers extension is encourage through farmers’ body.

4.3.6 Statements showing the dissimilar views of farmer respondents about the opportunities of FSC

1. FSC is a good example of farmer organization.

2. Provides a need base training.

3. Special aspect of study tour made it a specific program.

4. Gives special awards/recognitions to the farmers who show distinctions.

5. Gives the opportunity of hiring agencies of seed, fertilizers and pesticides.

4.3.7 Statements showing the similar views of farmer respondents about the threats of FSC

1. Political and other influential problems at provincial and local level.

2. People have not yet been fully motivated to adopt agriculture as occupation.

3. Low literacy rate in rural areas.

4. Poverty.

5. Due to a number of languages and their ascent, facilitators feel difficulty in message delivery.
6. Inadequate funds.
7. Political instability in country.

4.3.8 **Statements showing the dissimilar views of farmer respondents about the threats of FSC**

1. Corrupt bureaucracy.
2. Low paid staff.
3. Low quality teaching material.
4. Less priority to agriculture by the government.
5. Old aged extension workers.
6. Insect/pest and diseases.
7. Non-existence of separate office and meeting place.

4.3.9 **Statements showing the similar views of EFS respondents about the strengths of FSC**

1. Farmers elected members who command the FSC.
2. All the necessary inputs are made available under one roof.
3. A limited number of farmers were fully trained according to their needs, who then trained other farmers.
4. The technology is evolved in the field of farmer.
5. Technology is transferred according to the local needs.
6. The quality of extension work has become better.
7. Farmers are satisfied with the extension teaching methods.
8. Foresight of extension field staff increased due to interaction with private sector.
9. Provides better marketing guidelines.
10. The interaction between farmer and extension workers became stronger.

4.3.10. Statements showing the dissimilar views of EFS respondents about the strengths of FSC

1. Timely availability of agricultural inputs.
2. It enhances the professional competencies of extension field staff.
3. Provides specialized training on various aspects of crops.
4. Improves the extension worker-farmer relationship.

4.3.11 Statements showing the similar views of EFS respondents about the weaknesses of FSC

1. It lacks marketing facilities.
2. No female trainer to train female farmer.
3. Influential farmers are well benefited.
4. Weak feed back system.
5. No aspect of gender mobilization.
6. Line departments have no full harmony with the system.
7. Transportation problems.
8. Programs are not carried out at proper time.
9. Low pay and allowances of staff.
10. Bureaucratic behaviour of higher ups.
4.3.12 Statements showing the dissimilar views of EFS respondents about the
weaknesses of FSC
1. Departmental rivalry.
2. Official jealousy between officers.
3. No extra remuneration to the staff.
4. Less interest of farmers in training program.
5. Staff from public extension system is still in use.

4.3.13 Statements showing the similar views of EFS respondents about the
opportunities of FSC
1. Mutual financing of public and private sector.
2. Partnership between government and farmers.
3. Farmers are given opportunity to discuss their problems mutually.
4. The technical assistance increased farmers’ knowledge.
5. It tries to increase the participation of farmers.
6. Provides opportunity to polish the skills of EFS.
7. The working efficiency of EFS increased.

4.3.14 Statements showing the dissimilar views of EFS respondents about the
opportunities of FSC
1. Farmers organization formation.
2. Uses various teaching methods.
3. Provides need based training to farmers.
4. Provides in service training to EFS.
4.3.15 Statements showing the similar views of EFS respondents about the threats of FSC

1. Political instability in the area.
2. Different crises that generally hit the agriculture.
3. Low literacy level.
4. Strict local customs.
5. Linguistic problems.
6. Poverty.
7. Farmers suspicious nature.
8. Inadequate funds.
9. Less availability of facilities to EFS.
10. Farmers reluctant behaviour to adopt new technologies.
11. Low participation rate.

4.3.16 Statements showing the dissimilar views of EFS respondents about the threats of FSC

1. Government allocates fewer funds to agriculture.
2. Insect/pest and diseases.
3. Non-adoption of improved agronomic practices by farmers.
4. Less mobility facilities.
5. No reward to extension field staff of their additional duties.

Both of SWOT analysis showed that about all respondents were agreed with paradigm shift from public extension system to public-private system. Data also showed that the
idea generated in quantitative data gathered through interview schedule by both farmers and EFS respondents was confirmed and cemented through the qualitative data presented in the previous pages.

4.4 SWOT matrix

After analyzing quantitative and qualitative data concerning the perceptions of farmer and extension field staff respondents regarding the strengths, weaknesses, opportunities and threats, following SWOT matrix was developed, based on SWOT matrix prepared by Kotler (2000).

In the given SWOT matrix, four important strengths/opportunities are selected according to their attractiveness showing high and low probability of success. Similarly four important weaknesses/threats are selected according to their severness showing high and low probability of damage. In each case, statements in the upper-left cell are major items, which should not be ignored while statements in lower-right cell are minor and can be ignored.
### Strengths Matrix

<table>
<thead>
<tr>
<th>Attractiveness</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Farmers’ body
2. One-window operation
3. Farmers’ participation
4. Inputs supply

### Weaknesses Matrix

<table>
<thead>
<tr>
<th>Severeness</th>
<th>High</th>
<th>Low</th>
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<tbody>
<tr>
<td>High</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Weak linkage with market
2. No female staff
3. No infrastructure
4. No gender mobilization

### Opportunities Matrix

<table>
<thead>
<tr>
<th>Attractiveness</th>
<th>High</th>
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<tr>
<td>High</td>
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<td>2</td>
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<tr>
<td>Low</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Public-private partnership
2. National and international trend towards partnership
3. Half funding from government
4. Farmer-to-farmer extension

### Threats Matrix

<table>
<thead>
<tr>
<th>Severeness</th>
<th>High</th>
<th>Low</th>
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<tbody>
<tr>
<td>High</td>
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<tr>
<td>Low</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Political interference
2. Government instability
3. Low literacy rate
4. Local customs and norms

*Figure 4.7: SWOT Matrix*
Chapter # 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The economy of Pakistan mainly depends upon agriculture and provides employment to majority of rural masses. It is also a main source of foreign exchange earning.

Agricultural production can either be increased through extensive or intensive farming. Extensive farming has its own limitations. For example, cultivable land is reducing day by day due to expansion of industries, roads, housing schemes and other infrastructures. Bringing more area under cultivation is not possible due to acute shortage of irrigation water prevailing in the country. Pressure on available land and input resources require an aggressive and innovative farming approach for increasing the productivity to satisfy the need of ever increasing population of Pakistan (Government of Pakistan, 2003). In this scenario, a more valid and sensible proposition for an improved farming seems intensive agriculture meaning there by increasing yield per unit area. Majority of our farming community is illiterate and unaware of modern techniques. Now question arises that who will educate them to adopt modern agriculture. This is an essential job of an agricultural extension service.

A general weakness of agricultural extension is the low adoption of new agricultural technologies by poor and small farmers. Important issues related to this are many; among them, the inappropriateness of the technologies to the poor and small farmers’ conditions and the improper methods used to transfer these technologies to them are very critical (Ojha, 1999). However, as the process of developing more appropriate and productive technology gains momentum, it can be expected that the technological problem will not be serious as far as small and poor farmers are concerned (Fliegel, 1993). What is more crucial is the way the technologies are transferred. Evenson (1997) noted that many situation-specific factors impose on the effectiveness of extension programmes has taken place indicate that some of them were perceived to have been less than fully effective.

As the present public extension systems in many countries have not been able to address the issues and concerns of small and poor farmers, a search for new extension models that are more effective, efficient, and responsive to different categories of farmers is essential (Farrington et al., 1993). This essential model might be the public-private partnership, where public and private sector organizations can work together, which may share the resources of on another to accomplished mutual and individual objectives.

Pakistan is not immune to these changes in the pace of rapid global development. This is why conventional extension system is under serious criticism all over the world, and the same is true in Pakistan. Government of Pakistan is looking for an efficient and cost effective system, which can meet the emerging needs of farming community.
Government of NWFP took different steps for the improvement of agriculture but all these schemes could not fully succeeded to accelerate the tempo of agricultural development to keep pace for meeting the challenges in the province due to one or other reasons. So far Agricultural Extension has been successful in providing technical advice and transfer of known technology to the farmers to some extent, but the crucial needs of the farmers are material based, such as seed, fertilizers, machinery etc. Problem is further complicated due to top-down planning. In order to address these problems, the only way to develop agriculture of the province is to take grass-root level steps by involving local community with bottom-up planning. Government of NWFP has initiated a new public private partnership extension program in the province during the year 2000. This emerging system is locally called as Farm Services Centers (FSCs) where inputs delivery, market facilitation and exchange of experiences and knowledge are the main activities of the system.

However, there was still information gap about whether this public-private partnership would be beneficial in developing and extending agricultural technologies. This study intended to fill up that information gap by analyzing this public-private partnership by measuring its strengths, weaknesses, opportunities and threats. The results of the present study would be helpful in designing more flawless programme that would ultimately provide better results for farming community of NWFP especially and for Pakistan generally.

A complete list of each selected FSC was obtained from respective Agriculture Officer, then with the help of table designed by Fitzggibbon et al. (1987) the following number of farmer respondents were selected through random sampling i.e. 133 from Swabi and 84 from Kernal Sher Killi FSCs belonged from Swabi district. Whereas 165 from Ghazni Khail and 109 from Serai Naurang FSCs belonged to Lakki Marwat district, thus totalling to 491 farmer respondents. All the Agricultural Officers and District Officers of the selected districts served as respondents of the study. The data were collected with the help of well developed two separate interview schedules one for each type of respondents. The data collected was analyzed by using statistical computer package i.e. SPSS and following conclusions were drawn:

5.2 Conclusions

5.2.1 Farmer respondents
• All the farmer respondents were members of FSC and cumulatively 4.1% of them were office bearers of these FSCs. Out of them 41.1% of the farmer respondents were illiterate. However rest of the farmer respondents had educational level from primary to master. A simple majority (57.2%) of farmer respondents were middle aged i.e. 25-50 years of age. An overwhelming majority (91.2%) of the farmer respondents were small land holders upto 12.5 acres. Again overwhelming majority (92.0%) of farmer respondents were owner followed by tenant and owner-cum-tenant as reported by 4.9% and 3.1% of the respondents, respectively.

• A majority of the farmer respondents joined FSC from year 2000-2006 and highest percentage (19.8%) was achieved during year 2005.

• An overwhelming majority (96.9 and 98.6%) of the farmer respondents knew their respective agriculture officers and field assistants, respectively. Majority (96.5%) of the farmer respondents were motivated through personal contacts for the membership of FSC.

• Under FSC the most provided agricultural input was seed as reported by farmer respondents that ranked 1st for different crops with mean 2.827 and SD 0.718, followed by pesticides and fertilizers with means 2.756 and 2.719 with SD 0.824 and 0.854 respectively.

• Tractor ranked 1st for farm machinery provided to farmer respondents under FSC with mean 2.363 with SD 0.880. However, thresher and wheat reaper stood on 2nd and 3rd rank as reported by farmer respondents.

• Hundred percent farmer respondents reported that they received different skill development trainings under the umbrella of FSC and ranked need assessment
skills at 1st with mean 2.644 and SD 1.184, followed by program planning skills and budding/grafting skills at 2nd and 3rd rank, respectively.

- The farmer respondents ranked 1st, 2nd and 3rd the water management department, pesticide companies and seed companies with mean, 3.301, 3.246 and 3.114, and SD 1.472, 1.144 and 1.424, respectively, the line agencies from which they availed assistance under FSC.

- The most important strength of FSC in the eyes of farmer respondents was “managed by farmers’ bodies” as ranked 1st with mean 4.05 and SD 1.29, followed by “it is a one window operation” and “develops linkages with GOs” ranked 2nd and 3rd with mean 4.00 and 3.71 along with SD 1.12 and 1.25, respectively. On the other hand, first rank order strength of AED was “delivers extension messages effectively” with mean 3.08 and SD 1.27, followed by “farmers satisfied with the extension teaching methods used” and “creates awareness about quality of inputs” ranked 2nd and 3rd with mean 3.07 and 2.93 along with SD 1.22 and 1.10, respectively.

- The weaknesses of both extension systems as diagnosed by the farmer respondents were “no sale arrangements for surplus produce”, “lack of marketing facilities”, and “no female staff” with mean 4.12, 4.11 and 4.07 along with SD 1.22, 1.00 and 1.16, respectively were ranked 1st, 2nd and 3rd order weaknesses of public-private partnership (FSC). The responses ranged between below average extent to high extent. In contrast to FSC, the major weaknesses of AED were “lack of marketing facilities”, “no sale arrangement for surplus produce” and “no female staff” ranked 1st, 2nd and 3rd with mean 4.23, 4.13 and 4.07 along with SD
0.83, 1.01 and 1.16, respectively as reported by farmers respondents. For AED, the extent of responses varied between an average extent to high extent.

- In case of opportunities, FSC was “based on partnership between farmers and the government” ranked 1st with mean 4.12 and SD 1.29. The other major opportunities were “provides a forum for farmers to get together” and “offers low cost of learning” ranked 2nd and 3rd with mean 3.85 and 3.83 along with SD 1.29 and 1.12, respectively. The extent showed that FSC ranged between some extent to high extent. For AED, “proves extension workers to be good change agent”, “meets the current agricultural challenges” and “encourages heterogeneous grouping” were raked as 1st, 2nd and 3rd order opportunities with mean 3.10, 2.44 and 2.43 along with SD 1.29, 1.04 and 1.26 respectively. Its inclination was below average extent to an average extent.

- The threats for FSC as reported by farmer respondents were “pressure exerted by political influential authorities”, “low preference of agriculture by youth as full time occupation” and “low literacy level among farmers” with mean 3.36, 3.29 and 3.13 along with SD 1.25, 1.22 and 1.52, respectively. Its inclination was below average extent to an average extent. Contrary to that, the threats expected for AED by farmer respondents were “less trend to develop farmers’ organizations among farming community”, “pressure exerted by political influential authorities” and “political instability of the country” ranked 1st, 2nd and 3rd with mean 3.49, 3.16 and 3.11 along with SD 1.37, 1.32 and 1.37, respectively. The overall extent inclination showed that AED fell between below average extent to above average extent.
• About fifty percent of the statements related to suggestions for the improvement of public-private partnership working under FSC oscillate between above average extent to high extent as reported by farmer respondents. The statements “it should establish the direct link with the market for the sale of surplus produce of the members”, “regular allowance or honoraria should be allocated for Management Committee members”, “multidisciplinary teams of researchers and extension workers should work for information generation through one window operation”, “It should enhance the access of farmers to improved technologies”, and “separate offices and training halls should be built to run the system smoothly” ranked 1st, 2nd, 3rd, 4th and 5th with mean 4.77, 4.76, 4.48, 4.47, and 4.43 along with SD 0.79, 0.84, 0.93, 0.99, and 1.00, respectively. At lowest level suggestion was “FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs.

5.2.2 Extension field staff respondents

• A majority (81.8%) of the respondents was Agricultural Officers of the department of Agricultural Extension and rest of the respondents i.e. 18.2% were District Officers with regard to designation.

• A simple majority (54.6%) of the respondents had age group of 25-35 and 36-45 years respectively. An overwhelming majority (81.8%) of EFS respondents had acquired the degree of M.Sc. (Hons.) Agriculture with Agronomy as a field of specialization as reported by 72.2% EFS respondents. Almost 45.5% of the respondents had 23-33 years of job experience in Agriculture Department.
• Majority (81.8%) of the EFS respondents were satisfied with the motivational procedure of the FSC, whereas only 18.2% of them were not satisfied with the procedure adopted by FSC. The suggestions submitted by un-satisfied respondents for the improvement ‘were more funds should be provided to Agricultural Officers’, ‘provision of telephone facility in the office of Agric. Officer, ‘four wheel vehicle should be provided’, ‘extra honoraria of hard area’ and ‘residential facilities’ should be allocated to Agricultural officers.

• Hundred percent of the respondents fulfil almost all the responsibilities assigned to them under FSC schedule except maintenance of the record of FSC and contacting with farmers under said roles as supported by 9.1% of the respondents for each responsibility.

• The major resources were enrolment fee, partnership fee and matching grant as reported by cent percent of the respondents. On the other hand a large majority (72.7%) of the respondents reported that income from sale of inputs was also a major financial resource of EFS other than above mentioned resources. A lesser number of the respondents also claimed grants and donations from different personalities and loans from banks as financial resource of FSC respectively.

• Cent percent of the respondents were agreed that FSC funds were utilized for the purchase of inputs and transportation charges respectively. A majority (63.6%) of the respondents were agreed that funds were also utilized for the purchase of farm machinery and refreshment on farmer’s gatherings, respectively, for both the cases. More or less half (54.5 & 45.6%) of the respondents showed their response that funds were also utilized on the purchase of fruit plants and lodging and/or...
boarding respectively. However, some (27.3%) of the respondents reported that funds were utilized on the study tour of the farmers too.

- Simple to overwhelming majority (54.5-100%) of the EFS respondents was fully aware of the responsibilities of management committee. However, 72.3% of the EFS respondents were not in view to consider “arrangement of sale of surplus produce of member farmers in the market outside the district” as their responsibility. This might be due to their un-awareness with FSC bye-laws or might not get the chance to do such an activity.

- About 90% of EFS respondents arrange the management committee’s meetings on monthly bases in their respective areas, while in some cases meetings were held on fortnightly and quarterly bases, as reported by 44.4 and 33.3% of the respondents respectively. No respondent reported meetings on weekly bases. It means that the gap between the two meetings was at least two weeks. However about 78% of the respondents reported that special meeting was called when needed.

- All the line agencies were not working to high extent for cooperation with FSC. However, the most effective working relationship was found in pesticide companies as reported by majority of the respondents. In cooperation with FSC, pesticide companies ranked 1st with 2.636 mean and SD 0.924, followed by Water Management department and seed companies respectively. The least cooperation was extended by Outreach Programme of NWFP Agricultural University Peshawar.
In AED extension system the EFS more emphasized on the skills related to ploughing methods and threshing skills whereas in FSC more emphasis was given on budding/grafting and storage skills as in study area orchards of different temperature fruits were abundant. However, ploughing methods, threshing and fertilizer application skills ranked 1\textsuperscript{st} and 2\textsuperscript{nd} with mean 3.019 and 2.909 and SD 1.044 and 0.944 and 0.831 respectively in AED extension system. On the other hand, in case of FSC budding/grafting skills and storage skills were ranked 1\textsuperscript{st} and 2\textsuperscript{nd} with mean 3.364 and 3.091 and SD 1.027 and 0.701, respectively. There was a significant difference in acquiring the skills related to ploughing methods, harvesting methods and need assessment between FSC and AED. The rest of skills had a non-significant difference between two extension systems under study.

Tractor was most available farm machinery in both AED and FSC extension system as ranked 1\textsuperscript{st} 2.727 and 2.909 means and SD 0.905 and 2.090, respectively. The other machinery included thresher, bulldozers etc. in AED, and maize sheller and thresher in FSC extension system.

The personal contact was the most utilized contact method for the motivation of farming community in both extension systems. However, in FSC group contact methods were also enjoying the first position along with personal contact methods. Whereas, contact/ member farmers were utilized more effectively by EFS as reported by respondents in FSC in contrast to AED, where this segment was totally ineffective.
The most important strength for FSC was “managed by farmers’ bodies” which ranked 1st with means 82 and SD 0.40 followed by “it is a one window operation “and “uses the problem solving approach” which ranked 2nd and 3rd with means 4.36, and 3.91 with SD 0.81 and 1.38 respectively. The general inclination for FSC ranged from an average extent to high extent. On the other hand major strengths of AED were “trainers are equipped with professional knowledge”, “delivers extension messages effectively”, ensures timely availability of extension services” ranked 1st, 2nd and 3rd with means 3.73, 3.27 and 3.09 along with SD 1.35, 1.42 and 1.14 respectively. The overall picture for AED showed that the strength oscillates between average extent to above average extent.

The major weaknesses of FSC as diagnosed by EFS respondents were “no female staff”, “no sale arrangements for surplus produce”, and “lack of marketing facilities” ranked 1st, 2nd, and 3rd with means 4.73, 4.36 and 4.00 along with SD 0.65, 0.92 and 1.10 respectively. The overall inclination oscillates between an average extent to high extent. In case of AED, “no sale arrangements for surplus produce”, “no female staff”, and “no gender mobilization” were ranked 1st, 2nd, and 3rd weaknesses with means 4.82, 4.73, and 4.27 along with SD 0.40, 0.65, and 1.01 respectively as reported by EFS respondents.

According to the EFS respondents the following were the opportunities that strengthen the PPP i.e. FSC. The statements “offers low cost of learning”, “based on partnership between farmers and the government”, “provides forum for farmers to get together”, “proved extension workers to be good change agents”, and “encourages farmers participation” were the top five opportunities of the
First two statements collectively ranked 1\textsuperscript{st} with mean 4.09 along with SD 1.04 and 0.83 respectively; the 3\textsuperscript{rd} statement was ranked 2\textsuperscript{nd} with mean 3.91 along with SD 1.38, and fourth and fifth statements collectively ranked 3\textsuperscript{rd} with mean 3.82 along with SD 1.40 and 1.33 respectively. In contrast to FSC, the statements which were ranked 1\textsuperscript{st} and 2\textsuperscript{nd} by EFS were “identified problems with the help of technical experts” and “provides need based trainings” with mean 2.9 and 2.73 along with SD 1.45 and 1.27 respectively.

- Out of all threats, EFS ranked the statement “no trend to develop farmers’ organizations among farming community” as 1\textsuperscript{st} threat with mean 3.82 along with SD 1.40 followed by “lack of women participation in extension activities” and “low preference of agriculture by youth as full time occupation” with mean 3.73 and 3.36 along with SD 1.35 and 1.36 respectively for public-private partnership.

On the other hand, the threats of AED as pointed out by EFS respondents were “recruitment of inefficient extension workers in the system”, “pressure exerted by political and influential authorities”, “lack if women participation in extension activities”, “low literacy rate among farmers” and “weak linkage of farmers with extension workers” ranked 1\textsuperscript{st} for first statement, 2\textsuperscript{nd} for second and third statements and 3\textsuperscript{rd} for four and fifth statement with mean 3.73, 3.55 and 3.45 respectively.

- About half of the suggestions for the improvement of FSC ranged between above average extent to high extent as reported by EFS respondents. The statements “farmers should be encouraged to participate actively in the process of problem identification and their solution at local level”, “separate offices and training halls
should be built to run the system smoothly”, “further sub centres should be established on the convenient places”, “multidisciplinary teams of researchers and extension workers should work for information generation through one window operation”, and “FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs” ranked 1st, 2nd, 3rd, 4th and 5th with mean 4.91, 4.82, 4.73, 4.64 and 4.55 along with SD 0.30, 0.40, 0.65, 0.67 and 0.69 respectively. The least important suggestion was “it should cope with food insecurity situation to reduce the poverty” which ranked 16th with mean 3.00 and SD 1.41.

- Findings of focus group discussion reveals that about all the respondents were agreed with this paradigm shift. Majority of the respondents viewed that it can become a real one-window operation if the weak coordination with market is controlled. Similarly, its nature of partnership was considered as a big opportunity but political instability was considered a threat for that.

5.3 **Recommendations**

On the basis of conclusions the following recommendations were suggested.

5.3.1 **Recommendations for NWFP Government**

- Government should provide the opportunities of availing projects of different funding agencies to increase the share of private sector on FSC basis.
- Government should formulate law to increase the participation of women in the present programs, as they are main component of agriculture.

5.3.2 **Recommendations for NWFP Agriculture Department**
• Department should provide more facilities like pay and other allowances to the staff who engaged in additional activities of FSC to increase their working efficiency.

• As recommended by respondents separate meeting places should be provided for female farmers, so as they effectively get trainings and efficiently utilized the acquired knowledge in relevant fields.

5.3.3 Suggestion for future researcher

• This manuscript was the basic effort to analyse public-private partnership by comparing the FSC and AED systems. It was suggested to future researchers to plan a study of mid term evaluation of FSC after a lapse of seven years to find out the disadvantages and threats. After their suggested remedies the efficacy of this public-private partnership might be increased.

5.4 Strategy for an improved extension model

Based on research findings and figure 4.7, researcher developed a strategy for an improved model of public-private partnership in the following lines.

Figure 5.1 shows the proposed model of public-private partnership, which highlights the public sector with blue colour and private sector with grey colour. Green colour with inward arrows denotes required factors i.e. strengths/opportunities while red colour with outward arrows shows un-required factors i.e. weaknesses/threats.

It is proposed that existing extension model can be helpful in public-private partnership if efforts are made to minimise the weaknesses and threats using its strengths and availing its opportunities which are highlighted in SWOT matrix (figure 4.7).
Figure 5.1: Proposed model of public-private partnership
LITERATURE CITED


Ahmad, B., N. Tabassum, and P. A. Gill. 2000. Diagnosing priorities for rural women welfare through participatory approach: A study in the FAO-UAF project area in Faisalabad district. Institute of Applied Research and Technology Transfer, Deptt. of Farm Management, Univ. of Agri., Faisalabad.


Ajayi, M.T. 2001a. Evaluation of the effectiveness of field days carried out by agricultural trainees as a technology transfer strategy. Journal of International Agricultural Extension Education, 8 (03): 57-64.


Bajramovic, S., V. Falan, H. Custovic and J. Wibberley. 2007. Rural technology transfer in transition economies in Bosnia and Herzegovina. Under Project Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkan. CEEC AGRI POLICY


Budak, D. B., F. Yavuz and A. Gül. 2007. Rural technology transfer in transition economies in Turkey. Under Project Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkan. CEEC AGRI POLICY


CEEC AGRI POLICY. 2007. Rural technology transfer in transition economies in Lithuania. Under Project Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkan.


Develop On-site Innovative Technology Committee (DOIT committee) 1996. DOIT promotes collaborative partnerships as key to innovative technology development.


http://www.yale.edu/unhti/pubs/AZI/gomez.html


publication. www.accountancy.com.pk

Lahore, Pakistan: Policy and programme framing cell, Agricultural
department.

PC-1 Form. Directorate General Agriculture (Extension and Adoption
Research) Punjab, Lahore, Pakistan.

Gowda, M. J. C. 2001. Micro Level Opportunities and Challenges for Privatization of
Agricultural Extension. In Shekara, P.C (ed.), Private Extension in India:
Myths, Realities, Apprehensions and Approaches, pp: 18-25. National
Institute of Agricultural Extension Management, Hyderabad, India.

Guadagni, M. 2001. Colombia decentralization of agricultural extension services, a case
study. The World Bank group.

partnerships really matter: innovation theory, institutional arrangements
and implications for developing new technology for the poor.

Service: Attitudes and Preferences of Extension Personnel. In Shekara,
P.C (ed.), Private Extension in India: Myths, Realities, Comprehensions


Hoque, M.J., and K. Usami. 2007. Effectiveness of agricultural extension training courses for block supervisors at the Department of Agricultural Extension (DAE)


http://www.fao.org/DOCREP/005/AC913E/ac913e00.htm#Contents


Iesalnieks, I. and I. Leimane. 2007. Rural technology transfer in transition economies in Latvia. Under Project Agro economic policy analysis of the new member
states, the candidate states and the countries of the western Balkan. CEEC

AGRI POLICY


InSync. 1998. The CSF of successful partnership. (Online).


Mesic, Ž, Žutinic, D and Wibberley, J. 2007. Rural technology transfer in transition economies in Croatia. Under Project Agro economic policy analysis of the
new member states, the candidate states and the countries of the western Balkan. CEEC AGRI POLICY


Mungate, D. and Mvududu, S. 1991 Government and NGO collaboration in natural resources in Zimbabwe. Agricultural Administration (Research and


REMAN, G, VINCZE, M, KÖLCSEY, A and Kerekes, K. 2007. Rural technology transfer in transition economies in Romania. Under Project Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkan. CEEC AGRI POLICY

Richter, J. 2003. We the people, or, we the corporations.? Critical reflections on UN-business partnerships. Geneva: IBFAN-GIFA.


Shaw, I. 2003. Qualitative research and outcomes in health, social work and education. Qualitative Research, 3(1): 57-77.


AN ANALYSIS OF PARADIGM SHIFT FROM PUBLIC EXTENSION SYSTEM TO PUBLIC-PRIVATE PARTNERSHIP EXTENSION SYSTEM IN N.W.F.P PAKISTAN

Q.1 Biographical Information

1.1 Name of the Respondent (optional) __________________________
1.2 Name of the Village: _______________________________________
1.3 Union Council ___________________________________________
1.4 Tehsil ___________________________________________________
1.5 District __________________________________________________
1.6 Designation w/r to FSC (if any) ________________________________
1.7 Education (in years) _______________________________________
1.8 Age (in years) _____________________________________________
1.9 Total land holding (acres) __________________________________
1.10 Type of tenure: Owner____ Tenant____ Owner cum Tenant____
1.11 When you got membership of FSC ___________________________
1.12 Do you know the AO in your area: Yes______ No______________
1.13 Do you know the FA in your area: Yes_______ No______________

Q.2 Please identify the means by which you are motivated for membership in FSC

<table>
<thead>
<tr>
<th>2.1</th>
<th>Personal contacts</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>Group contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Mass contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Others</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q.3 Please show whether you got increase in your area sown and average yield per acre with respect to the following crops after getting the membership of FSC

<table>
<thead>
<tr>
<th>Crops</th>
<th>Area sown increased</th>
<th>Average yield increased</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3.1 Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2 Maize</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3 Canola / oilseed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4 Sugarcane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5 Tobacco</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6 Vegetables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.7 Fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8 Any others (Pl. specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note for Q.4 to 6

Please state whether the given items are provided to you? If yes, then show the extent on the following scale.

- To some extent ................................................................. 1
- To below average extent ..................................................... 2
- To an average extent .......................................................... 3
- To above average extent ..................................................... 4
- To high extent ....................................................................... 5

Q. 4. Give the detail of major inputs provided to you by FSC

<table>
<thead>
<tr>
<th>Input provided</th>
<th>Yes</th>
<th>No</th>
<th>Extent of provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Seed</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>4.2 Fertilizers</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>4.3 Pesticides</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>4.4 Others</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>

Q. 5 Give the detail of major farm machinery provided to you on rental basis under FSC

<table>
<thead>
<tr>
<th>Machinery provided</th>
<th>Yes</th>
<th>No</th>
<th>Extent of provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Tractor</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>5.2 Bulldozers</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>5.3 Thresher</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>5.4 Maize Sheller</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>5.5 Wheat reaper</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>5.6 Ridger</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
Q. 6  Give the detail of training and skill development you got under FSC

<table>
<thead>
<tr>
<th>Skill development</th>
<th>Yes</th>
<th>No</th>
<th>Extent of provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Ploughing methods</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.2 Harvesting methods</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.3 Threshing skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.4 Storage skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.5 Fertilizer application skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.6 Pesticides application skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.7 Seed storage skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.8 Budding/Grafting skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.9 Farm management skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.10 Program Planning skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.11 Need assessment skills</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>6.12 Others (Pl specify)</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>

Note for Q.7 to Q.12
Please state whether you agree with the given statements. If yes, then show the extent on the following scale.

To some extent ................................................................. 1
To below average extent .................................................... 2
To an average extent ........................................................ 3
To above average extent ..................................................... 4
To high extent ...................................................................... 5

Q. 7. Please state whether you availed assistance from the following line agencies for your farming needs. If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>Name of the line Agencies</th>
<th>Yes</th>
<th>No</th>
<th>Extent of assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Agri Research</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.2 Live Stock &amp; Dairy Development</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.3 Outreach program of NWFP Agric. University Peshawar</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.4 NIFA</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.5 Water Management Deptt:</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.6 Agricultural Engineering</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.7 Pesticide Companies</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.8 Seed Companies</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>7.9 Others (Pl mention)</td>
<td></td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
Q. 8 Please state whether the following strengths exist in FSC and AED. If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Public extension system (AED)</th>
<th>Public-private Partnership extension system (FSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.2 Offers technology best fitted to the local situation.</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.3 Ensures timely availability of extension services</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.4 Farmers satisfied with the extension teaching methods used</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.5 Delivers extension messages effectively</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.6 Creates awareness about quality of inputs</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.7 Creates awareness about prices of inputs</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.8 Provides facility of farm machinery</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.9 Increases farm production</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.10 Provides the inputs as per farmers’ needs</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.11 Demand driven system</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.12 Develops linkages with GOs</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.13 Develops linkages with NGOs</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.14 Improves farmer-extension worker linkages</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.15 Provides guidelines regarding better marketing</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.16 Possesses inputs’ agencies for smooth supply</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.17 Designs crop demonstration activities</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.18 Trainers are equipped with professional knowledge</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td>8.19 It is a one window operation</td>
<td>No 1-2-3-4-5</td>
<td>No 1-2-3-4-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8.20 Farmers’ friendly system</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>8.21 Managed by farmers’ bodies</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>8.22 Any other (pl. specify)</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
**Q. 9** Please state whether the following weaknesses exist in FSC and AED. If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Weaknesses</th>
<th>Public extension system (AED)</th>
<th>Public-private Partnership extension system (FSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>Neglects needy farmers</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.2</td>
<td>Lack of marketing facilities.</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.3</td>
<td>Visits are made to progressive farmers only</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.4</td>
<td>No female staff</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.5</td>
<td>Weak linkage with line agencies</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.6</td>
<td>Lack of inputs’ storage facility</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.7</td>
<td>Weak feedback system</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.8</td>
<td>Weak monitoring and evaluation system</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.9</td>
<td>No sale arrangements for surplus produce.</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td></td>
<td>Lack of creation of leadership qualities among farming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.10</td>
<td>No gender mobilization</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.11</td>
<td>No separate meeting place for female farmers</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.12</td>
<td>Programs are not carried out at proper time</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.13</td>
<td>Develops no linkages with the market</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>9.14</td>
<td>Any other (pl. specify)</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
</tbody>
</table>

**Q.10** Please state whether the following opportunities exist in FSC and AED. If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Public extension system (AED)</th>
<th>Public-private Partnership extension system (FSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Enhances hidden capabilities of farmers.</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>10.2 Enhanced Farmers’ knowledge level</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
<tr>
<td>10.3 Meets the current agricultural</td>
<td>_  1-2-3-4-5</td>
<td>_  1-2-3-4-5</td>
</tr>
</tbody>
</table>

*Table with Yes/No and Extent of existence columns for weaknesses and opportunities.*
challenges

10.4 Proved extension workers to be good change agents
10.5 Offers low cost of learning
10.6 Gives farmers the chance of sharing their problems
10.7 Provides quality inputs at reasonable prices
10.8 Provides need based trainings
10.9 Small farmers are well benefited. Encourages heterogeneous grouping
10.10
10.11 Supply oriented system
10.12 Arranges study tours for exchange of knowledge
10.13 Minimized dealers’ monopoly on prices of agricultural inputs
10.14 Identifies problems with the help of technical experts
10.15 Encourages farmers participation Based on partnership between farmers and the government Provides a forum for farmers to get together
10.16
10.17 Any other (pl. specify)

Q.11 Please state whether the following threats exist in FSC and AED. If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Threats</th>
<th>Public extension system (AED)</th>
<th>Public-private Partnership extension system (FSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Political instability of the country</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
</tr>
<tr>
<td>11.2</td>
<td>Inadequate funds Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.3</td>
<td>Weak linkage of farmers with extension workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.4</td>
<td>Low literacy level among farmers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.5</td>
<td>Lack of women participation in extension activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.6</td>
<td>Low preference of agriculture by youth as full time occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.7</td>
<td>Linguistic problems faced during</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ccli**
farmers-facilitator interactions
No trend to develop farmers’
organizations among farming community

11.9
Pressure exerted by political and influential authorities

11.10
Recruitment of in-efficient extension workers in the system

11.11
Any other (pl. specify)

Q. 12
Please state whether you agree with the following statements for the improvement of the Public-Private partnership extension model (FSC). If yes, then show the extent on the given scale.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Suggestions</th>
<th>Yes/No</th>
<th>Extent of satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1</td>
<td>Public-private partnership should be strengthen through permanent legislation</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.2</td>
<td>It should cope with food insecurity situation to reduce the poverty</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.3</td>
<td>Number of stakeholders should be increased to reduce financial burden on government</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.4</td>
<td>It should enhance the access of farmers to improved technologies</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.5</td>
<td>It should establish the direct link with the market for the sale of surplus produce of the members</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.6</td>
<td>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.7</td>
<td>Female staff with necessary training should be deputed for gender mobilization</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.8</td>
<td>Female farmers should be encouraged to get membership</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.9</td>
<td>Separate offices and training halls for FSCs should be built to run the system smoothly</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.10</td>
<td>An administrator working as government representative should be deputed permanently to supervise whole the centre</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.11</td>
<td>Regular allowance or honoraria should be allocated for Management Committee Members</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.12</td>
<td>It should strengthened coordination with line agencies</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.13</td>
<td>Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.14</td>
<td>Further sub centers should be established on the convenient places</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.15</td>
<td>Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.16</td>
<td>FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs</td>
<td></td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
12.17  Any other (pl. specify)  

Appendix -II

INTERVIEW SCHEDULE
AN ANALYSIS OF PARADIGM SHIFT FROM PUBLIC EXTENSION SYSTEM TO PUBLIC-PRIVATE PARTNERSHIP EXTENSION SYSTEM IN N.W.F.P PAKISTAN
(For Extension Field Staff)

<table>
<thead>
<tr>
<th>CODE NO.</th>
<th>DISTRICT</th>
<th>FSC</th>
<th>CIRCLE</th>
</tr>
</thead>
</table>

Q.1 Biographical Information
1.1 Name of the officer (optional)
1.2 Designation
1.3 Age
1.4 Highest professional qualification
1.5 Field of specialization
1.6 Job experience (in years)

Q.2 Are you satisfied with motivational procedure of FSC
   Yes ____  No ____
   If no give suggestions

   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

Q.3 Please specify the major responsibilities assigned to AO under FSC
   Responsibilities
   Yes  No

   3.1 Motivating farmers for enrolment in FSC
   3.2 Maintenance of the record of FSC
   3.3 Working with FSC as technical advisor/facilitator
   3.4 Keeping eye on activities of Management committees of FSC
   3.5 Assisting the management committee in budget planning
   3.6 Preparation of weekly/ fortnightly reports
   3.7 Contacting with farmers under said roles
   3.8 Providing technical assistance to the farmers regarding various crops
   3.9 Others

Q.4 What are the financial resources of FSC
   Yes  No

   4.1 Enrolment fee (Rs. 100/ member)
   4.2 Partnership fee (Rs. 500/member)
   4.3 Marching grant (by Govt.)

ccliii
4.4 Loans from banks
4.5 Grants and donations
4.6 Income from sale of inputs
4.7 Others

Q.5 What are the areas where funds are utilized

<table>
<thead>
<tr>
<th>Q.5</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Purchase of inputs</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.2</td>
<td>Purchase of machinery</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.3</td>
<td>Purchase of fruit plants</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.4</td>
<td>Transportation charges</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.5</td>
<td>Lodging and boarding</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.6</td>
<td>Refreshment</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.7</td>
<td>Study tours</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.8</td>
<td>Others - Pl specify</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Q.6 Who maintains the funds

<table>
<thead>
<tr>
<th>Q.6</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Govt. Officials</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.2</td>
<td>Farmers</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.3</td>
<td>Both (5.1 &amp; 5.2)</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.4</td>
<td>Any others (Pl. specify)</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Q.7 Please indicate whether all the posts of your FSC are filled or not

<table>
<thead>
<tr>
<th>Posts of MC</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 President</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.2 Vice president</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.3 General secretary</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.4 Finance secretary</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.5 Information secretary</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Q.8 What are the responsibilities of management committee

<table>
<thead>
<tr>
<th>Responsibilities of MC</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Maintenance of all records of FSC in a transparent way easily accessible to each member.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.2 Budget planning and its approval from General Body.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.3 Progress and balance sheet preparation and approval from General Body.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.4 Procurement of Basic Seed</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.5 Procurement of C-1 from the registered growers.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.6 Arrangement of Seed Certification process through Federal Seed Certification and Registration Department.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.7 Obtaining agencies of fertilizer and pesticides for FSC.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.8 Procurement of fertilizer and pesticides for FSC.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.9 Linkages with line Agencies and Market.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.10 Arrangement of sale of surplus produce of farmer members in the market out side the district.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
8.11 Arrangement for farmers training in seed technology.
8.12 Arrangement of exchange visits.
8.13 Arrangement of cleaning, transportation of Seed, storing and purchase of empty gunny bags etc.
8.14 Distribution of Basic Seed and signing of TOP with the Seed-producing growers.
8.15 Distribution / sale of C-1 seed to the registered members of the FSC.
8.16 Mobilization of the farmers’ enrolment and membership in the FSC.
8.17 Selecting seed producing growers and fields for seed production.
8.18 Arrangement of crop visits by technical experts.
8.19 Others

Q.9 After how much time does management committee hold its regular meetings

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Fortnightly</td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>Any Other</td>
<td></td>
</tr>
</tbody>
</table>

Q.10 Please show the extent of the cooperation of the line agencies with FSC on the following scale

To some extent .......................... 1
To below average extent ....................... 2
To an average extent .......................... 3
To above average extent ...................... 4
To high extent .............................. 5

Name of the line agencies

<table>
<thead>
<tr>
<th>Yes/ No</th>
<th>Extent of cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Agricultural Research</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.2 Live Stock &amp; Dairy Development</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.3 Outreach program of NWFP Agric. University Peshawar</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.4 NIFA</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.5 Water Management Deptt:</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.6 Agricultural Engineering</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.7 Pesticide Companies</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.8 Seed Companies</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>10.9 Others (Pl mention)</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
Q. 11  To what extent do you think that the following skills are given to farmers in the given Extension systems? Please elaborate your response by encircling the corresponding number against each statement on the scale given in Q. 10

<table>
<thead>
<tr>
<th>Skills</th>
<th>Yes/ No</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Yes/ No</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 Ploughing methods</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.2 Harvesting methods</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.3 Threshing skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.4 Storage skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.5 Fertilizer application</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.6 Pesticides application</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.7 Seed storage skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.8 Budding/Grafting skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.9 Farm management skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.10 Program Planning skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>11.11 Need assessment skills</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>

Q. 12  To what extent do you think the availability of farm machinery to farmers on rental basis in the given Extension systems? Please elaborate your response by encircling the corresponding number against each statement on the scale given in Q. 10

<table>
<thead>
<tr>
<th>Machinery</th>
<th>Yes/ No</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Yes/ No</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1 Tractor</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.2 Bulldozers</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.3 Thresher</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.4 Maize Sheller</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.5 Wheat reaper</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.6 Ridger</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>12.7 Others – specify</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
Q. 13  To what extent do you think the following methods are used for farmers’ motivation in the given Extension systems? Please elaborate your response by encircling the corresponding number against each statement on the scale given in Q. 10

<table>
<thead>
<tr>
<th>Methods of motivation</th>
<th>Yes/ No</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Yes/ No</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1 Personal contacts</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>13.2 Group contacts</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>13.3 Mass contacts</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>Contact/member farmers</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>13.4 Kisan councilor</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>Any other (Pl. Specify)</td>
<td>_</td>
<td>1-2-3-4-5</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>

Q. 14  To what extent do you think that the following strengths are present in FSC and AED. Please encircle the corresponding number against each statement according to the scale given in Q.10.

<table>
<thead>
<tr>
<th>Strengthened by</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of exist</td>
<td>Yes/ No</td>
<td>Extent of exist</td>
</tr>
<tr>
<td>14.1 Extension workers meet contact farmers, who then assist in spreading the messages to other farmers.</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.2 Offers technology best fitted to the local situation.</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.3 Ensures timely availability of extension services</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.4 Farmers satisfied with the extension teaching methods used</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.5 Delivers extension messages effectively</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.6 Creates awareness about quality of inputs</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.7 Creates awareness about prices of inputs</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>14.8 Provides facility of farm machinery</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>Q. 15</td>
<td>To what extent do you think that the following weaknesses are present in FSC and AED. Please encircle the corresponding number against each statement according to the scale in Q.10.</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>14.9</td>
<td>Increases farm production 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.10</td>
<td>Provides the inputs as per farmers’ needs 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.11</td>
<td>Demand driven system 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.12</td>
<td>Develops linkages with GOs 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.13</td>
<td>Develops linkages with NGOs 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.14</td>
<td>Improves farmer-extension worker linkages 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.15</td>
<td>Provides guidelines regarding better marketing 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.16</td>
<td>Possesses inputs’ agencies for smooth supply 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.17</td>
<td>Designs crop demonstration activities 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.18</td>
<td>Trainers are equipped with professional knowledge 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.19</td>
<td>It is a one window operation 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.20</td>
<td>Farmers’ friendly system 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.21</td>
<td>Managed by farmers’ bodies 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
<tr>
<td>14.22</td>
<td>Any other (pl. specify) 1-2-3-4-5 1-2-3-4-5 1-2-3-4-5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1 Neglects needy farmers</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.2 Lack of marketing facilities.</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.3 Visits are made to progressive farmers only</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.4 No female staff</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.5 Weak linkage with line agencies</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.6 Lack of inputs’ storage facility</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.7 Weak feedback system</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.8 Weak monitoring and evaluation system</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.9 No sale arrangements for surplus produce.</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.10 Lack of creation of leadership qualities among farming community</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
<tr>
<td>15.11 No gender mobilization</td>
<td>_</td>
<td>1-2-3-4-5</td>
</tr>
</tbody>
</table>
Q.16 To what extent do you think that the following opportunities exist in the FSC and AED. Please encircle the corresponding number against each statement according to the scale given in Q.10.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.12 No separate meeting place for female farmers</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
</tr>
<tr>
<td>15.13 Programs are not carried out at proper time</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
</tr>
<tr>
<td>15.14 Develops no linkages with the market</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
</tr>
<tr>
<td>15.15 Any other (pl. specify)</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
</tr>
<tr>
<td>16.1 Enhances hidden capabilities of farmers.</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>16.2 Enhanced Farmers’ knowledge level</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.3 Meets the current agricultural challenges</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.4 Proved extension workers to be good change agents</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.5 Offers low cost of learning</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.6 Gives farmers the chance of sharing their problems</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.7 Provides quality inputs at reasonable prices</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.8 Provides need based trainings</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.9 Small farmers are well benefited.</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.10 Encourages heterogeneous grouping</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.11 Supply oriented system</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.12 Arranges study tours for exchange of knowledge</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.13 Minimized dealers’ monopoly on prices of agricultural inputs</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.14 Identifies problems with the help of technical experts</td>
<td>_ 1-2-3-4-5</td>
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<td>16.15 Encourages farmers participation</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<td>16.16 Based on partnership between farmers and the government</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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<tr>
<td>16.17 Provides a forum for farmers to _ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
<td>_ 1-2-3-4-5</td>
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</tbody>
</table>
Q.17 To what extent do you think that the following threats exist in the FSC and AED. Please encircle the corresponding number against each statement according to the scale given in Q.10

<table>
<thead>
<tr>
<th>Threats</th>
<th>Public-private partnership extension system (FSC)</th>
<th>Public extension system (Agric. Ext Dept.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes/No</td>
<td>Yes/No</td>
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<tr>
<td></td>
<td>Extent of existence</td>
<td>Extent of existence</td>
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<tr>
<td>17.1 Political instability of the country</td>
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<td>17.2 Inadequate funds</td>
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<td>17.3 Loss of confidence of farmers due to bitter experiences they gained from previous programs</td>
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<td>17.4 Weak linkage of farmers with extension workers</td>
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<tr>
<td>17.5 Low literacy level among farmers</td>
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<tr>
<td>17.6 Lack of women participation in extension activities</td>
<td>_</td>
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<tr>
<td>17.7 Low preference of agriculture by youth as full time occupation</td>
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<tr>
<td>17.8 Linguistic problems faced during farmers-facilitator interactions</td>
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<tr>
<td>17.9 Less trend to develop farmers’ organizations among farming community</td>
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<tr>
<td>17.10 Pressure exerted by political and influential authorities</td>
<td>_</td>
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<tr>
<td>17.11 Recruitment of in-efficient extension workers in the system</td>
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<td>17.12 Any other (pl. specify)</td>
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</table>

Q.18 To what extent do you suggest that should be the components of an improved Public-Private partnership extension (FSC) model. Please encircle the
corresponding number against each statement according to the scale given in Q.10

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>18.1</th>
<th>18.2</th>
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<th>18.6</th>
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<th>18.13</th>
<th>18.14</th>
<th>18.15</th>
<th>18.16</th>
<th>18.17</th>
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<tbody>
<tr>
<td>Public-private partnership should be strengthen through permanent legislation</td>
<td>Yes</td>
<td>No</td>
<td>1-2-3-4-5</td>
<td>Yes</td>
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<td>It should cope with food insecurity situation to reduce the poverty</td>
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<td>Number of stakeholders should be increased to reduce financial burden on government</td>
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<td>It should enhance the access of farmers to improved technologies</td>
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<td>It should establish the direct link with the market for the sale of surplus produce of the members</td>
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<td>Multidisciplinary teams of researchers and extension workers should work for information generation through one window operation</td>
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<td>Female staff with necessary training should be deputed for gender mobilization</td>
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<td>Female farmers should be encouraged to get membership</td>
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<td>Separate offices and training halls for FSCs should be built to run the system smoothly</td>
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<td>An administrator working as government representative should be deputed permanently to supervise whole the centre</td>
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<td>Regular allowance or honoraria should be allocated for Management Committee Members</td>
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<td>It should strengthened coordination with line agencies</td>
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<td>Minimum qualification for Management Committee Members should be fixed as bachelor to promote educated leadership</td>
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<td>Further sub centers should be established on the convenient places</td>
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<td>Farmers should be encouraged to participate actively in the process of problem identification and their solution at local level</td>
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<td>FSC as an organization should provide opportunity to avail various projects offered by GOs and NGOs</td>
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<td>Any other (pl. specify)</td>
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Appendix-III

INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSION

AN ANALYSIS OF PARADIGM SHIFT FROM PUBLIC EXTENSION SYSTEM TO PUBLIC-PRIVATE PARTNERSHIP EXTENSION SYSTEM IN N.W.F.P PAKISTAN

Q.1 What are your views about the working of FSC?

Q.2 Please compare the strengths and weaknesses of FSC?

Q.3 What types of opportunities are being offered under the forum of FSC?

Q.4 What do you think real threats for the sustainability of this model?

Q.5 Do you agree with paradigm shift from public extension to public-private partnership extension system?