

EFFECTIVE USE OF EXTENSION TEACHING METHODS BY THE SUB ASSISTANT AGRICULTURE OFFICER (SAAO) OF DAE

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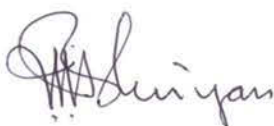
BY

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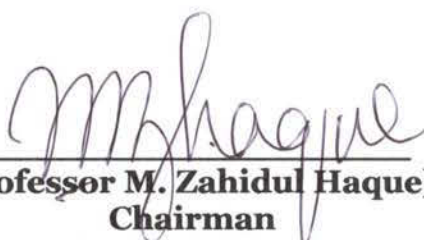
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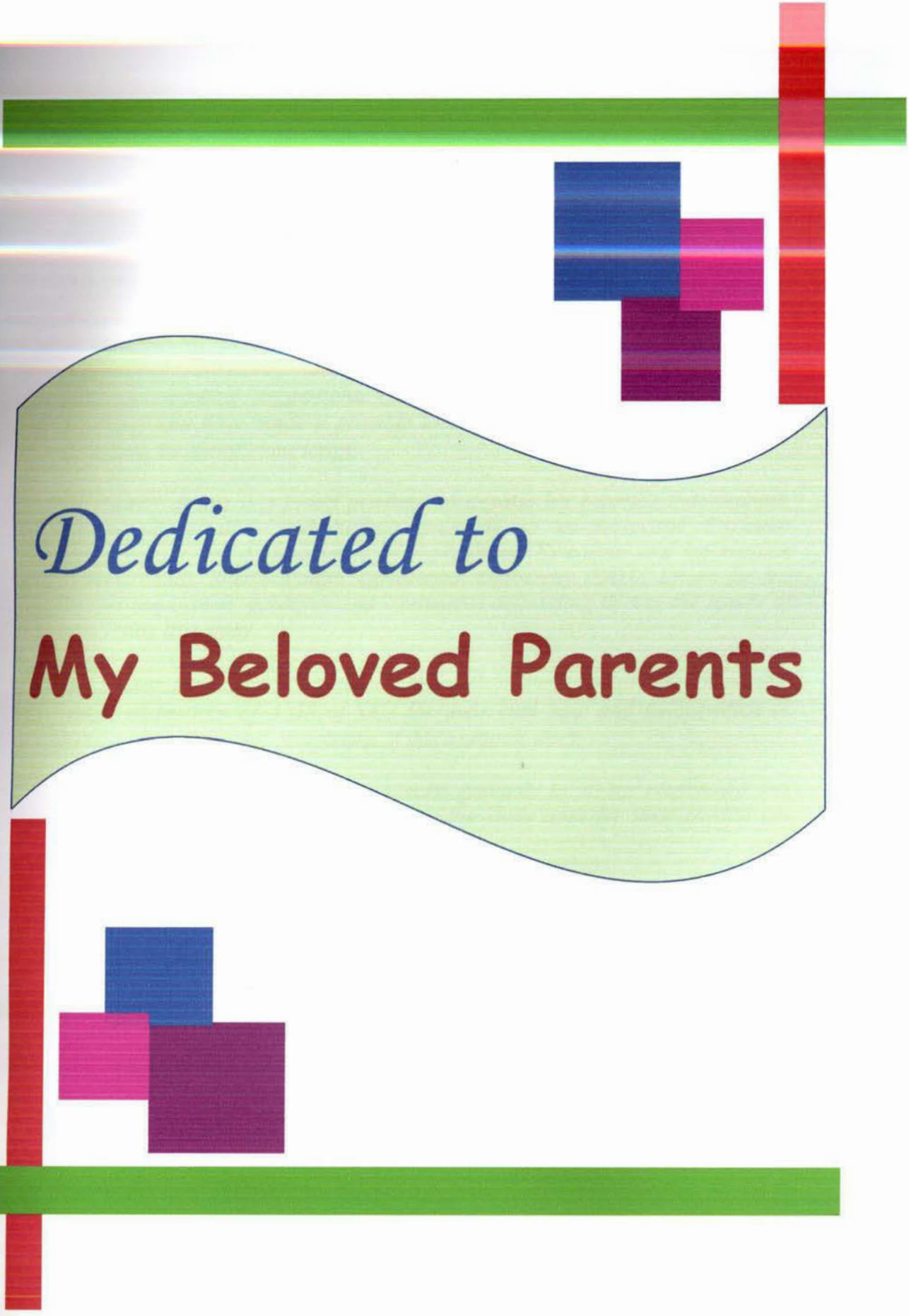
CERTIFICATE

This is to certify that the thesis entitled “EFFECTIVE USE OF EXTENSION TEACHING METHODS BY THE SUB ASSISTANT AGRICULTURE OFFICER (SAAO) OF DAE” submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE IN AGRICULTURAL EXTENSION**, embodies the result of a piece of *bonafide* research work carried out by **MD. MIZANUR RAHMAN**, Registration No. **00786** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that such help or source of information, as has been availed of during the course of this investigation has duly been acknowledged.

(Prof. Mohammad Hossain Bhuiyan)
Supervisor

Dated: 4.9.08
Place: Dhaka, Bangladesh

The page is decorated with several geometric elements. At the top, there is a thick green horizontal bar. To its right, a vertical red bar extends downwards. In the upper right quadrant, there is a cluster of three overlapping squares: a blue one on top, a pink one to its right, and a purple one below the blue one. In the lower left quadrant, there is another cluster of three overlapping squares: a blue one on top, a pink one to its left, and a purple one below the blue one. At the bottom, there is another thick green horizontal bar, with the vertical red bar continuing past it.

Dedicated to
My Beloved Parents

ACKNOWLEDGEMENT

All praises and thanks to almighty Allah, the supreme ruler of the universe who enabled the researcher to complete this study.

The author with a deep sense of respect expresses his heartfelt gratitude to his respectable supervisor Professor Mohammad Hossain Bhuiyan of Department of Agricultural Extension and Information System (AEIS), Sher-e-Bangla Agricultural University (SAU), Dhaka for his untiring and painstaking guidance, valuable suggestions, continuous supervision and scholastic co-operation that have made it possible to complete this piece of research and reviewing the entire manuscript.

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The Author

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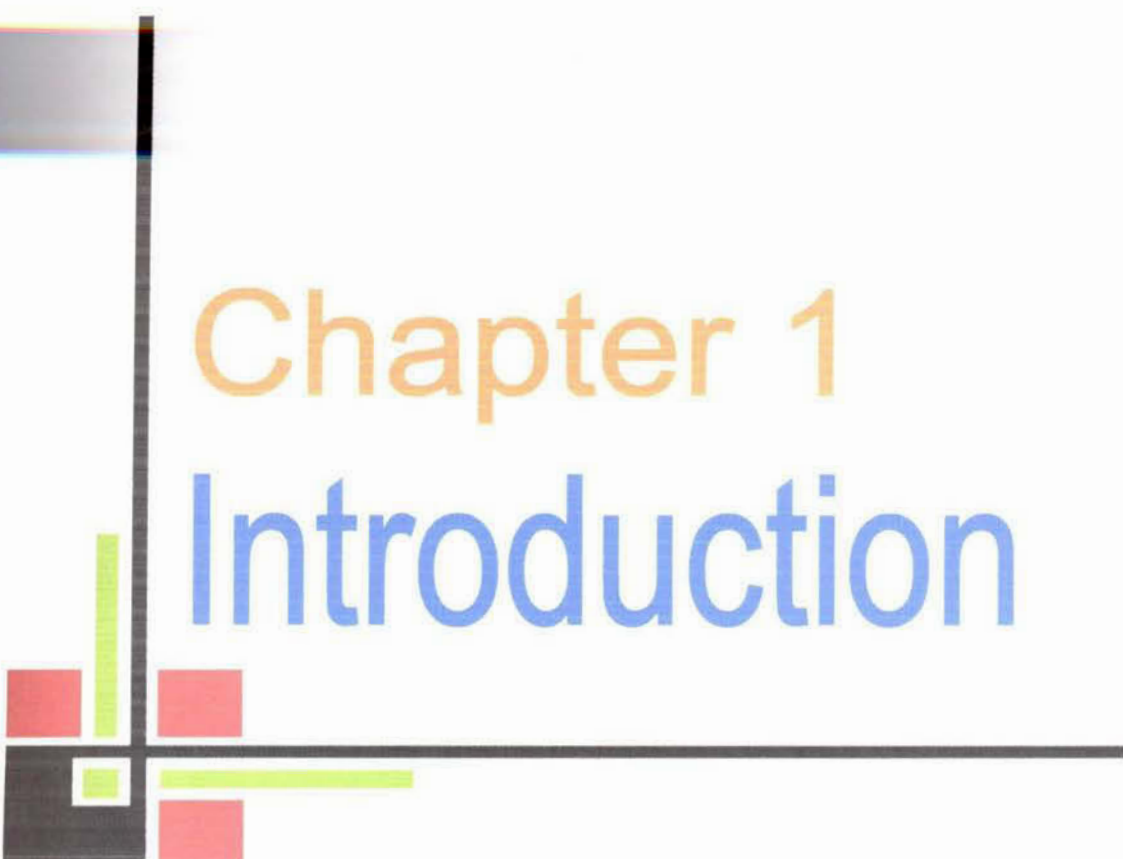
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**EFFECTIVE USE OF EXTENSION TEACHING METHODS
BY THE SUB ASSISTANT AGRICULTURE
OFFICER (SAAO) OF DAE**

ABSTRACT

The main purpose of the study was to determine the extent of effective use of extension teaching methods by the Sub Assistant Agriculture Officer (SAAO) of DAE and to explore the relationships between the selected characteristics of the respondents and their effective use of extension teaching methods. The study was conducted in Kajipur upazila under Sirajganj district. Data were collected from 50 SAAOs by using a pre-tested interview schedule during the period from September 15 to October 15, 2007. Appropriate scales were developed to measure the variables of the study. Correlation(s) test was used to ascertain the relationships between the concerned independent and dependent variables of the study. The finding of the study revealed that highest proportion (56 percent) of the respondents had moderately effective use of extension teaching methods compared to 18 and 26 percent having less effective use and highly effective use of extension teaching methods respectively. Correlation analysis indicated that four out of six characteristics of the SAAOs namely, in-service training, media contact, job satisfaction and job performance had significant positive relationships with their effective use of extension teaching methods. Other two characteristics of the SAAOs namely, service length and job facilities had no significant relationship with their effective use of extension teaching methods.



Chapter 1

Introduction

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Agricultural extension establishes communication networks between the farmers and the agricultural support services which include research institutes, input supplies agencies, marketing departments and credit organization. On the other hand, extension had a vital role in resolving the agro-economic and social production problems which they are facing (Benor et al, 1984). An extension service promotes useful and remunerative technological change among farmers and keeps agricultural research and other rural services well informed of the farmers' conditions and needs. To achieve greater efficiency in the extension system, the government introduced the T & V system in 1978 and extended the system nationwide unifying all extension organization under the umbrella of the one Department of Agriculture Extension (DAE) in 1982. However, in 1995 the new Agricultural Extension Policy (NAEP) was introduced to increase the efficiency of agricultural extension. The policy concentrates on decentralized and demand driven extension to meet farmers' needs and encourages effective links between research and extension. It is the key to successful implementation of the policy like in forging a broad based understanding amongst extension providers and farmers. Though the T&V system has not been continued in Bangladesh but the present extension system following the T&V concept. It allows the transmission of problem solving information to the farmers and feed back information to the research workers. However, in actual operation, the system has not been availed to bring about the anticipated change among the farming community.

With the objective of improving the quality of rural life, the department of Agricultural Extension (DAE) is playing a vital role in assisting farmers to improve productivity and increase their income by promoting appropriate farming practices. Under such a situation transfer of technology becomes a challenging job for the DAE, in any development programme. Sub-Assistant Agriculture Officers(SAAO) play vital roles in transfer of technology because Sub-Assistant Agriculture Officers are the only extension workers who are directly involved with farmers and teach them production recommendation. Sub-Assistant Agriculture Officers being the grass root level extension workers of the organization directly work with the farmers.

The SAAOs have special responsibilities in their service. They involved in making decision about local extension programmes in Upazila Planning workshop and are responsible for developing work programmes. They find out existing groups and work with these groups to meet their extension needs. SAAOs work with farmers to assess needs using techniques such as the problem census and Participatory Rural Appraisal (PRA). They conduct extension activities with all types of farmers large and small, male or female. They also work with special interest groups, such as local dealers. SAAOs plan and implement many different extension methods, some with individual farmers, some with groups (DAE, 1999).

The technical function of SAAOs are methods demonstration, result demonstration, manure preparation etc. SAAOs usually encourage farmers to test or adopt technologies, observing useful and effective technologies. Then farmers use those technologies and promote these to other farmers (DAE, 1999). The responsibility of all other extension staff is ultimately to make the SAAOs more effective in their work. They must also advise farmers on the price and availability of necessary inputs and market condition. They should report farmer's response to recommendation, production problems, input

demand and availability and market condition to his supervisors and in training. The success of Agricultural Extension Programmes to a great extent depends on the use of extension teaching methods of the sub Assistant Agriculture Officers. Agricultural development of USA, Japan, India are driven by their effective and responsible extension workers.

The use of extension teaching methods by SAAOs is not merely based upon dealing with physical and material aspects pertaining to different job areas but also upon their behavioral components like knowledge, skill, satisfaction, attitude towards job and other economic and socio-psychological aspects. In this regard, Leagan (1961) stated that the success or failure of programme for promoting change lies in the hands of the personnel meaning them and will be determined by their ability. Use of extension teaching methods by a worker depends on the full utilization of his abilities and also on the social expectation of the environment in which he works.

The success of the Department of Agricultural Extension absolutely depends upon the use of extension teaching methods of its grass root level workers. The SAAOs visit farms and homes, conduct demonstration, hold meetings, arrange TV and radio talk to teach farmers useful agricultural technology. Personal contact between SAAOs and farmers develops effective relationship for successful extension programme. The ultimate result depends on the performance of the Sub-Assistant Agricultural Officers.

1.2 Justification of the Study

Generation of knowledge through research and its diffusion is the foundation of scientific, technical and social progress of any nation. Agricultural research and extension communication with teaching process have symbiotic relationship with each other. Lack of effective communication among them results in the low agricultural productivity anywhere in the world. To achieve a high level of

production accomplishment, diffusion of improved technology from research system to ultimate users will have to be ensured through effective use of extension teaching methods. The main function of the SAAOs is to teach farmers production problem, use of inputs and relevant technologies. The problem of changing the traditional subsistence farming to modern, scientific and market oriented is the most crucial, and complex issue confronting the country. This problem could be solved if the scientific-information can be communicated rapidly from the research source to the extension workers and finally to the farmers. In spite of many efforts, scientific information is not reaching to the ultimate users as quickly as it should be with the result that there exists a wide gap between the development of scientific information and its utilization by the farmers (Guba, 1968). Communication of scientific information i.e. technology is not merely a process occurring between the sender of a message and its recipient, but a phenomenon of highly complex nature.

The dissemination of technology for modernizing agriculture requires three system: (i) the research system which generates knowledge and develops technology, (ii) the extension system performing the task of communication links between the research and client (farmer) system, and (iii) the client system consisting of ultimate users of technology (Coughenour, 1968). Each of the three systems is equally important in the process of modernizing agriculture (Roger and Srenning, 1969). Their role is complementary to each other. The members of each system are constantly communicating with other members, within and between the systems. Researchers communicate with other researchers and also with extension personnel and farmers. Accordingly, extension personnel communicate with other extension personnel and also with farmers and researcher. Similarly, farmers communicate with fellow farmers and also with extension personnel and researchers. The more is the

communication within and between the systems, the faster will be the dissemination of information in the process of modernization of agriculture (Lionberger and Chang, 1970).

In order to accelerate the process of modernization, it becomes imperative to measure the effectiveness of using extension teaching methods by the Sub Assistant Agriculture Officer (SAAOs). Behavioural scientists including communication specialists expressively studied the communication problems of the client systems under different researches for the diffusion of innovations. Moreover, studies related to Sub Assistant Agriculture Officer and farmers regarding their communication behaviour are a pretty new study in Bangladesh and are not only very few but hardly deal with communication within and between the systems.

The present study attempts to analyze the effective use of extension teaching methods by the Sub Assistant Agriculture Officer in order to seek whether extension teaching methods are properly used by the SAAOs or not.

1.3 Specific Objectives

Based on the aforesaid discussions the research work entitled “Effective Use of Extension Teaching Methods by the SAAOs” has been undertaken. The following specific objectives have been formulated to conduct the research work:

1. To determine the some selected characteristics of the Sub Assistant Agriculture Officers (SAAOs). The characteristics were:
 - i. Service length,
 - ii. In-service training
 - iii. Media contact
 - iv. Job satisfaction

v. Job facilities and

vi. Job performance.

2. To determine the effective use of extension teaching methods of the Sub Assistant Agriculture Officers (SAAOs);

3. To determine the relationship between selected characteristics of the SAAOs and effective use of extension teaching methods by them.

1.4 Scopes of the Study

i. The study was conducted in Kazipur upazila under Sirajganj districts. The research study was carried in order to have an idea about how effectively the SAAOs interact with the farmers about diffusion of innovation. Further more, the study will seek to determine how the SAAOs process the information and report it to the extension system for solution of different production problems so that it may be passed on to other farmers.

ii. It is expected that the findings of this study will help both the extension workers and farmers to communicate different production technology among themselves and at the same time will help to transfer other research information to the farmers effectively. It will also specify the roles of intra and inter-system communication, highlight the bottlenecks in effective transfer of technology in the government extension organization i.e. DAE.

iii. It is also expected that the findings of the study will be useful for designing a communication strategy for disseminating technological information from the SAAOs to farmers in order to modernize agriculture. The findings of the study will also help in identifying some of the personal and situational characteristics of SAAOs in increasing their communication efficiency.

iv. To the academicians, it may help in further conceptualization of the systems model for analyzing the entire agricultural communication system. In addition,

the findings of this study may have other empirical evidence to all aspects of communication behaviour of researchers, extension workers as well as farmers which may be used to build all adequate theory of communication.

1.5 Limitation of the Study

The study has certain limitations which are usually associated with social science researches. Since the findings are based on the ability of the respondents to recall and on the verbal opinions expressed by them, the objectivity of the study is confined to then- ability, recall capacity and also on their sincerity in providing the needed information.

- i. Characteristics of SAAOs are many and varied, but in the present study only 6 personal and situational characteristics were taken into consideration.
- ii. The study was confined only with the information related to extension teaching methods and their dissemination to the farmers.

1.6 Assumptions

An assumption is the supposition that an apparent fact or principle is true in the light of available evidence (Goode, 1945). During the course of study, the researcher had the following assumptions in mind:

1. The selected respondents were competent enough to reply the queries made by the researcher.
2. The responses furnished by the respondents were reliable and valid.
3. Information furnished by the respondents was a representation of the whole population of the study area.
4. The environmental conditions of SAAOs were more or less similar throughout the study area.

1.7 Statement of Hypothesis

Goode and Hatt (1952) defined hypothesis as "a proposition which can be put to a test to determine its validity. It may seem contrary to or in accord with common sense". A null hypothesis states that there is no relationship between the concerned variables. However, the following null hypotheses were formulated to explore relationships of the selected characteristics of SAAOs and their effective use of extension teaching methods.

1. There is no relationship between service length of SAAOs and their effective use of extension teaching methods.
2. There is no relationship between in-service training of SAAOs and their effective use of extension teaching methods.
3. There was no relationship between media contact of SAAOs and their effective use of extension teaching methods.
4. There was no relationship between job satisfaction of SAAOs and their effective use of extension teaching methods.
5. There was no relationship between job facilities of SAAOs and their effective use of extension teaching methods.
6. There was no relationship between job performance of SAAOs and their effective use of extension teaching methods.

1.8 Definition of the Terms

Important terms concerned with the study are defined and interpreted below for clarity of understanding:

Service Length: It referred to one's entire duration of service from the date of first joining in the Department of Agricultural Extension (DAE) till the date of interview.

In-Service Training: In-Service training was measured by the number of days that a respondent had received training in his or her service life. It was indicated by the total number of days of training received by a respondent under different training programs.

Media Contact: It referred to ones becoming accessible to the flow of agricultural information through different selected channels of communication namely: Radio, TV, Newspaper etc.

Job Satisfaction: The degree of job satisfaction or dissatisfaction of Sub Assistant Agriculture Officers (SAAO) related to the various aspects of his job such as accomplishments in job, supervision advancement opportunity, scope for using personal initiative, pay and enjoyment from works.

Job Facilities: It referred to the opportunity provided by an organization (DAE) to its workers for better job performance with great pleasure and satisfaction. In this study factors that were provided to the SAAOs for their job satisfaction were assessed such as transport, travel allowance, training materials necessary funds etc.

Job Performance: The degree to which the respondent accomplished and completed his task efficiently and effectively.



Chapter 2

Review of Literature

CHAPTER 2

REVIEW OF LITERATURE

Review of literature gives the direction of the researcher to carry out the research programme. The research programme is concerned with the effectiveness of SAAOs on the use of extension teaching methods as perceived by them and by the farmers. No research has been conducted on the effective use of extension teaching methods by the SAAOs. So, directly related literature were not readily available for this study. A few of these studies relevant to this research are briefly discussed in this chapter under four sections. The first section is concerned with review of literature on the concept of effectiveness for extension workers and clients. The second section contains the review of past studies in connection with the relationships of selected characteristics and correlates of perception and effectiveness respectively. Relevant review of literature related to Extension Teaching Methods is cited in the third section. conceptual frame work forth section.

2.1 Concept of Effectiveness in Using Extension Teaching Methods of Extension Workers

The term effectiveness may be variously perceived depending on one's orientation, purpose and field investigation. Relevant literatures have been reviewed to clarify the concept of effectiveness and the factors that are likely to influence it. However, the word effectiveness is relatively a new concept for the field worker and client of agricultural extension and rural extension work. Hence review of relevant literature from other functional fields of management may help develop better understanding about the concept of effectiveness and its determinants (Hassanullah, 1989). Effectiveness of the group member like KSS is the result of successful performance which derives from the operative goals of the group or organization as the work to be done is split up and

allocated to people (Miner, 1988). The main function of the SAAOs is to teaching farmers by effective use of extension teaching methods. Below some review of literature have been presented which are relevant to the job responsibilities of SAAOs.

Job effectiveness refers to the degree of agricultural extension worker in performing the various duties and responsibilities effectively assigned to them. Sometimes, the word performance is used in place of job effectiveness for brevity (Mahboob *et al.* 1978).

Effectiveness may be defined as the degree to which a group or social system achieve its goal. An effective group is one that shows high level of both task performance and human resource maintenance overtime (Scharmerhorn *et al.* 1988)

Hovland and Wesis (1951) observed that the effectiveness of source in communicating developmental information to the rural people depends on the people's perception on the credibility of these sources. A source that is perceived to be credible by the people will be more effective in persuasion. Reviewing a number of researchers on source credibility Bettinghous (1973) observed similar finding that if an individual was rated by the receivers as highly credible, the supposition would be that such an individual would have, because of his perceived characteristics, great persuasive abilities.

Rahim (1961) conducted a study in a co-operative society and found the relationship between individual characteristics of co-operators and their effectiveness in connection with innovative farm activities. In his study he found that job effectiveness was significantly related to size of farm, literacy, membership in organization and contact with information sources. All these

relationships were found to be positive. The study further revealed that age of the farmers had no influence on innovative activities.

Vroom (1964) states that effectiveness is a function of ability and motivation which is also agreed by Cummings and Schwabs (1973). Lynch (1971) also reported that any effectiveness of an individual is basically a function of both his abilities and motivations. However, abilities and motivations of individuals are largely determined by his characteristics (Anwar, 1994). Vinke (1962) has shown that a number of characteristics of an individual affect the quality and quantity of his effectiveness.

Sinha and Prasad (1966) reported that village level workers (VLWs) were working very effectively while the role of Agriculture Extension Officers (AEOs) and BS (SAAOs) as source of information was almost negligible.

Tripathy and Pandey (1967) reported that indirect methods were most effective followed by personal contact, demonstration, group discussion and literature. Radio, film show and meeting were moderately effective. Tours, exhibits and fairs were less effective. They also reported that effectiveness of extension teaching methods differed in the following contexts. Effectiveness of methods for all improved practices differ significantly as a whole; they differ significantly from each other for the same practice; rate of adoption is positively related to effectiveness of methods, and number of methods employed has positive correlation to the rate of adoption.

Rajaguru and Satapathy (1971) observed that field agent was most effective followed in descending order by neighbour and friend, literature, VLWs, radio, AEO, and film show. The most interesting finding is that RDO was not contacted at all by the farmers at any of the five stages.

Deep (1978) stated that ineffectiveness of groups are those that cannot work together as a team toward the same objective. Cameron (1980) argued that organization can be effective when a group reaches it's (according to goal model). Organization can be effective when internal process is operating well (according to internal process model). It may be stated that there is a great significant positive relationship between group effectiveness and its member's performance. This is because when individual performance is up to the mark, the group becomes effective. The goal achievement is significant factor of effectiveness and group process is also an important factor helps the group to be effective.

Mears (1981) stated that an organization or group effectiveness depends upon the performances of numerous small group or members which function and interact within the overall organizational or group system.

Suryanarayana *et al.* (1990) revealed that 65 percent of the contact farmers were effective in influencing other fellow farmers, 23 percent of the contact farmers were more effective, and 12 percent were less effective. It was particularly observed that the contact farmers who effectively used extension teaching methods were significantly successful in extension knowledge on improved technology to other farmers in the area of their operation.

Majydyn (1996) determined the effectiveness of 11 communication media by farmers' perception on four message characteristics adequateness, understandability, applicability, and persuasiveness etc. Based on the comprehensive perception farm magazine, newspaper and extension publication (leaflet, booklet, etc.) obtained ranks of 8th, 9th and 11th respectively. The perception means of the interpersonal and mass media were 847 and 580 respectively. He concluded that interpersonal media dominate over the mass media in their relative effectiveness.

Walker (1996) in his article reported that the aim of Agricultural Support Services Project (ASSP), which began in 1992, was to improve the operational and organizational efficiency and effectiveness of the Department of Agricultural Extension. A mid-term review was conducted of the ASSP in 1994 and is reviewed in Agricultural Research and Extension Network paper No. 59c and No. 61 (ODI 1996). This briefing note updates events in Bangladesh since the 1994 review.

Mortuza *et al.* (1998) observed that more than half of the KSS (52 percent) had moderate effectiveness and 6 percent had very low and 4 percent had low effectiveness. Only 8 percent were very highly effective KSSs.

2.2 Review of Past Studies Concerning the Relationship between Dependent and Independent Variables

Six characteristics of the farmers on effective use of extension teaching methods by the SAAO were selected as independent variables of the study. The researcher made utmost effort to search out studies dealing the relationships of the selected characteristics of the SAAO with their effective use of extension teaching methods as perceived by them and farmers of that area and found that only a few such relevant works were done in home and abroad. As a result, there is a serious dearth of research works specially on the effective use of extension teaching methods as perceived by the SAAO and the farmers of the study area. So, directly no study concerning effective use of extension teaching methods by the SAAO was available. However, some studies showing relationships between selected characteristics of respondents and effectiveness of different aspects are cited here. These studies, though not directly concerned, are supposed to indicate some dimensions of perception and general effectiveness.

2.2.1 Service Length and Effective Use of Extension Teaching Methods

Hossain and crouch (1992) observed that there exists positive relationship between Service length of SAAOs and the use of Extension Teaching Methods.

Kadom and sable (1983) observed in a study that service length of the SAAOs showed significant association with the use Extension Teaching Methods.

Islam (1981) in his study at the Leguna Province of the phillippines revealed that service length of the SAAOs had significant relation on their use of Extension Teaching Methods.

Rahman (1990) found that service length of the SAAOs was negatively related with their use of Extension Teaching Methods that means younger SAAOs, performed better than the older ones.

Rahman (1990) observed that a positive significant relationship between the service length of the SAAOs and their use of Extension Teaching Methods.

Shamsul and Saiful (1997) conducted a study and found a significant relationship between experience and the use of Extension Teaching Methods.

2.2.2 In-Service Training and Effective Use of Extension Teaching Methods

Joshi (1981) reported that there was significant increase in knowledge gained by the SAAOs as a result of in service training.

Karim (1994) in a study found that in service training had positive and significant relationship with their use of Extension Teaching Methods.

2.2.3 Media Contact and Effective Use of Extension Teaching Methods

Shamsul and Saiful (1997) conducted a study and found a significant relationship between communication exposure and the use of Extension Teaching Methods.

Karim found (1990) a positive relationship between communication exposure and the use of Extension Teaching Methods.

2.2.4 Job Facilities and Effective Use of Extension Teaching Methods

Rahrnan found (1990) positive relationship between job facilities with the use of Extension Teaching Methods. The SAAOs who had more working facilities performed better.

Shamlul and saiful conducted a study and found significant relationship between working facilities and the use of Extension Teaching Methods.

2.2.5 Job Satisfaction and Effective Use of Extension Teaching Methods

Perumal (1975) in a study also found that job satisfaction of the SAAOs had on significant relationship with their use of Extension Teaching Methods.

Jonardham (1980) in his study found that the use of Extension Teaching Methods and job satisfaction of the SAAOs were not related to each other.

Shamsul and Saiful (1997) found a significant relationship between job satisfaction and the use of Extension Teaching Methods.

2.2.6 Job Performance and Effective Use of Extension Teaching Methods

Akhori (1973) reported positive relationship between job performance and the use of Extension Teaching Methods. He also found job performance traits are associated with the most efficient extension personnel.

Goodale (1975) found that the job performance had significant role in raising the standard of the employees work and also in building more effective work team. (Clark 1972).

2.3 Reviews on Extension Teaching Methods

Hooda (1987) observed that with regard to utilization of source of communication, radio was found to be most impersonal source of information. In case of personal source, friends and relatives were the most utilized source of information followed is progressive farmers.

Sainapta (1986) in his study found that demonstration is the best credible source if information be the farmers followed by block extension agency, progressive farmers, television, radio and printed matters.

Nataraju and Channegowda (1985) found in a study that respondents used radio 54 percent, newspaper 46 percent, neighbors 23.3 percent, demonstration 10.6 percent and group meeting 6 percent in receiving information on improved dairy management practices.

Mekabutra (1985) conducted a study in Thailand and reported that among the mass media that offered more knowledge in agriculture was radio, followed by television and newspaper respectively. Considering knowledge gained from mass media that were applicable to their work, farmers opined that television provided about 83.5 percent, radio 78 percent and newspaper 77 percent.

Samanta (1986) reported that mass communication channels involved different mass media such as radio, TV, magazine, newspaper, etc. which enable a source of one or a few individuals to reach a large audience rapidly. These media are effective in the development countries, while in the developing world their effectiveness is limited due to many factors. The modern media of communication like radio, TV, magazines, newspapers, etc. are available mainly to urban people and elites, and the coverage of rural program by mass media are also inadequate.

Chidanandappa and Veerabhadraiah (1998) examined different mass media sources used by extension personnel and reported that extension personnel made use of the package of practices like booklet, extension folders, radio, newspapers, farm magazine to a large extent as media of information.

Van den Ban and Hawkins (1988) reported that in industrialized countries people spent more time with television and radio than printed word. Radio is most important mass media for farmers of less industrialized countries. The urban middle class in less industrialized countries now also spend considerable time watching television but it is not yet a very important medium in rural areas of these countries.

Dinampo (1989) conducted a study in Philippines to determine communication need and preferences. He observed that farmers were found to prefer an interpersonal media (extension agent) rather than mass media. Among mass

media, first preference was radio followed by printed materials and also visual sources.

Reisner and Hays (1989) reported that the agricultural press is a vital link in transplanting information to US farmers.

Haque (1990) in his paper conducted that mass media can perform a better role in technology diffusion. Therefore, planned efforts to introduce more of mass media strategies that are proven effective by experiments are highly recommended.

Chough (1991) in a study observed that press, radio and television were regarded as important vehicles of information which can help ensure the supply of inputs to those really who need them.

Wate and Rivera (1991) in their study examined the application of new technologies in agricultural information transfer process and explored future perspectives of new technologies as a force of change in developing countries. They found that print media, electronic media, radio, television, satellite computers and mobile audiovisual media were the important sources of spreading information.

Khan and Paracha (1994) conducted a study in two villages in Pakistan, one innovative and other non-innovative, among the farmers of a cotton producing district, and reported that the main channel of communication were mass media and interpersonal communication. The mass media centrally organized and included radio, television and newspaper.

Molinar et al. (1994) in their paper concluded that radio would remain the most significant medium in the Pacific for some time because of the geographical

nature of islands. Continued training, radio, video and print are vital if they are to meet the spatial dimension of the communication process.

DAE (1995) in order to achieve the objectives of the following extension programs consider the following extension method and strategies:

- Media campaign including printed media, radio and television
- Thana and district fair
- Traditional and folk media
- Group meeting
- Farmers training, motivational tour, farm walk, method demonstration, field days, result demonstration individual farm visit, etc. Printed media commonly used are bulletins, posters, leaflet, circular letter letters, newspapers and magazines.

Rahman (1995) in his paper reported that the rural press can serve the farmers and families in the villages by providing timely information regarding farming and harvest. The rural press by providing up-to-date market prices of agricultural products can help the local farmers.

Khan (1996) conducted a study on the use of information sources by the poor farmers and found that 75 percent of the respondents had medium use of various information sources for receiving agricultural information.

Islam (1996) in his study found that the highest production (44.55 percent) of the respondents belonged to medium media exposure category and 38.18 percent belong to low exposure and 17.27 percent to high exposure group. He also found that among 15 media radio ranked in 6, television 7, fair 8, agricultural production, 1-5 was for individual media.

Egbule and Njoku (2001) in their study on mass media for adult education in Nigeria found that mass media had poor performance in disseminating requisite agricultural information to farmers, although there is a positive correlation between mass media usage and farm yield.

Ainal (1986) found in a study that extension officers were the most important information resource persons and radio, television talks the most frequently used communication media by farmers.

Chugh (1991) in a study observed that the press, radio and television were regarded as important vehicles of information which ensured the supply of inputs to those who really read them.

Ayaz (1991) in a study found that radio solved the problem inaccessibility of media grid that of illiteracy of farmers. Therefore, radio needs to be used more extensively to disseminate agricultural information to farmers.

Singh (1990) found that most of the contact farmers received information from progressive farmer, some of them received from radio.

Ven den Ban (1987) in his study observed that farm magazine was the most important source of information for Dutch farmers. He also observed that radio and television did not play a much bigger role in agricultural extension service.

Mazher (2003) in a study in Pakistan reported that Pamphlets, Magazines and newspapers were suitable for dissemination of sugarcane production technologies, mass media usage and farm yield. But farmers' preferred television over other mass media channels for getting agricultural information.

2.4 The Conceptual Framework of the Study

In scientific research, selection and measurement of variables constitute an important task. The hypothesis of a research while constructed properly contains at least two important elements i.e. "a dependent variable" and "an independent variable". A dependent variable is that factors which appears, disappears or varies as the researcher introduces, removes or varies the independent variable (Townsend, 1953). An independent variable is that factor which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. In view of prime findings of review of literature, the researcher constructed a conceptual model of the study, which is self-explanatory and is presented in Figure 2.1.

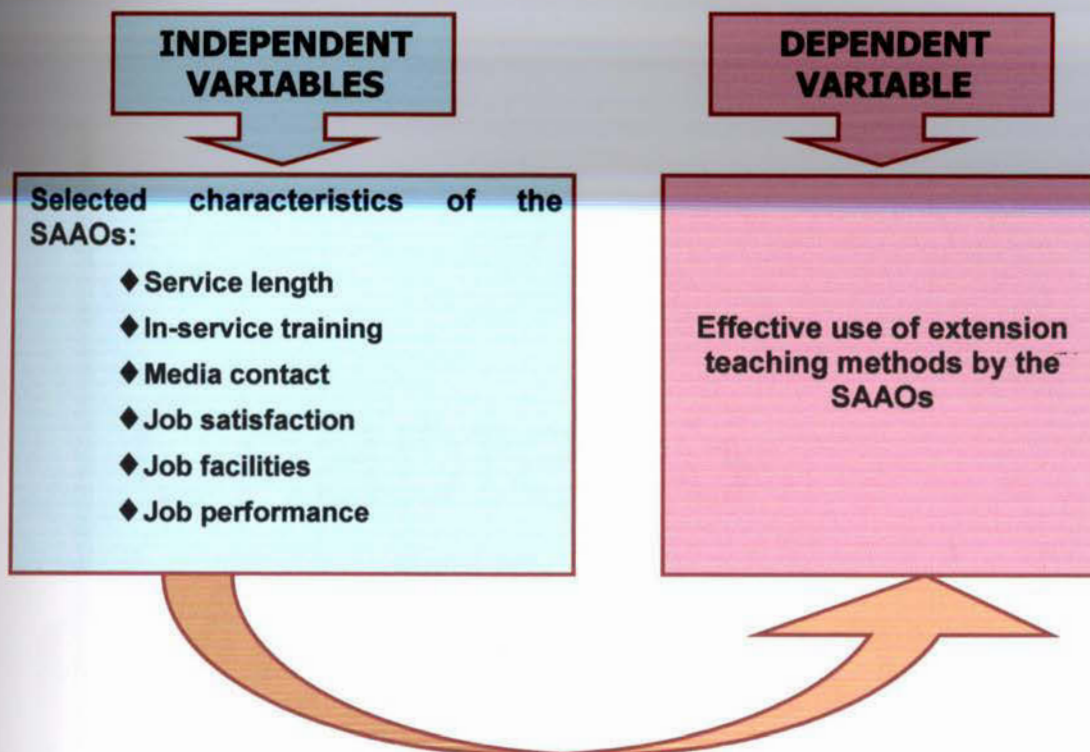


Figure 2.1 The conceptual framework of the study

Research methodology is the structure of the study and the approach to the study. It gives necessary direction to the study for the achievement of the study objectives. It is the first step in the study and the most important step in the study.

Chapter 3

Methodology



CHAPTER 3

METHODOLOGY

Methodology describes the procedure of scientific and empirical research. Importantly it gives necessary direction to the researcher to achieve objectives of the study step by step. Any empirical research whether it is natural or social needs valid and reliable data. To ensure the beneficial output of the research a number of preconditions to be set to run the study smoothly. The precautions are:

- a) Selection of locale of the study
- b) Population and sampling
- c) Selection and preparation of research instrument
- d) Data collection
- e) Measurement of independent and dependent variables
- f) Analysis of data

3.1 Locale of the study

The present study was purposively conducted in Kazipur upazila under Sirajganj district. The Kazipur upazila had 50 blocks. The upazila is not far away from the district town, but all the blocks are not well communicated. Some blocks have river based communication. The maps of Sirajganj district and Kazipur upazila showing the locale of the study are placed in Fig. 3.1 and Fig. 3.2.

Study Area

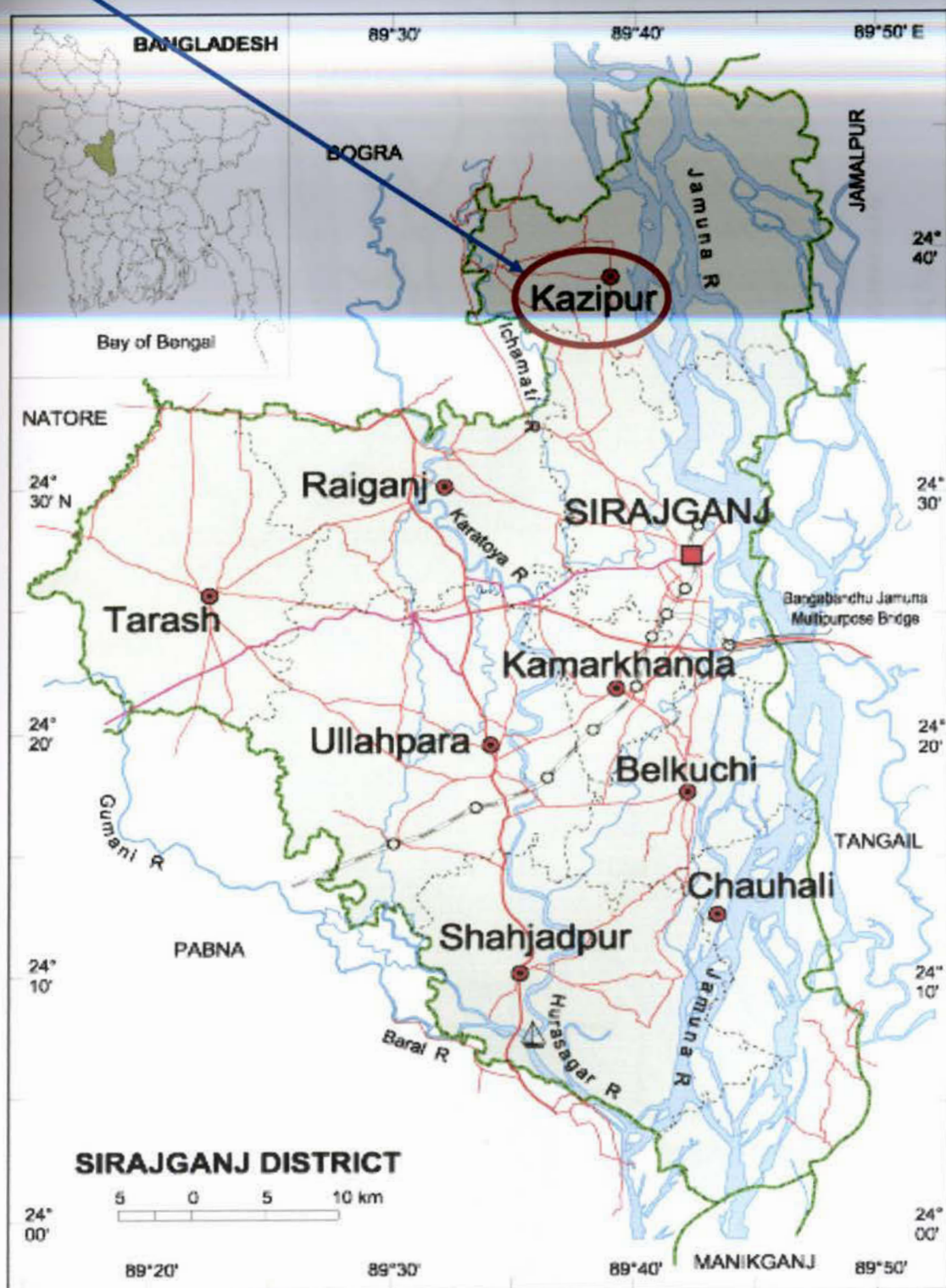


Fig: 3.1 A map of Sirajganj district showing the study upazila

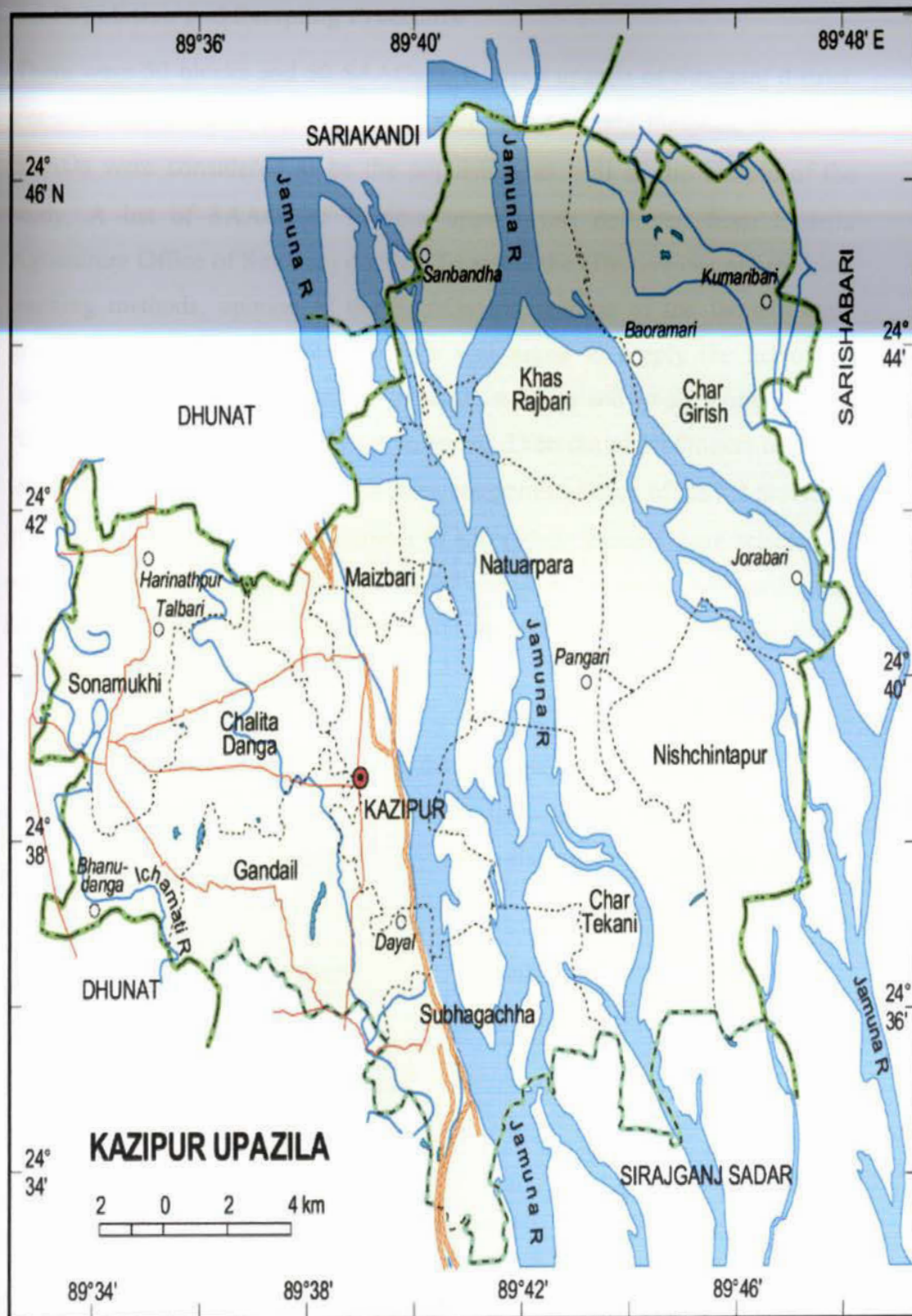


Fig: 3.2 A map of Kazipur upazila showing the locale of the locale

3.2 Population and Sampling Procedure

There were 50 blocks and 50 SAAOs in Kazipur upazila of Sirajganj district. For the study of their effective use of extension teaching methods, all the 50 SAAOs were considered to be the population as well as the sample of the study. A list of SAAOs of Kazipur upazila was collected from Upazila Agriculture Office of Sirajganj district. To assess the effective use of extension teaching methods, opinion of the SAAOs and opinion of the farmers were given importance. Firstly each SAAOs was asked to supply the list of 10 farmers from each of the category of large, medium and small farmers. Thus 50x3x10 equal to 1500 names were collected. Then out of 10 farmers one was selected randomly from each of the three categories of each of the list provided by each SAAOs. Thus a total number of 150 (50x3) farmers were selected to pass their opinion on the effective use of extension teaching methods by the SAAOs. The distribution of the population, sample and of the SAAOs is given in Table 3.1.

Table 3.1 Distribution of population, sample size and of SAAOs

District	Upazila	Population	Sample size
Sirajganj	Kazipur	50	50
Total =		50	50

3.3 Preparation of Interview Schedule

Following the procedure of the measurement of both dependent and independent variables, a draft questionnaire was prepared for recording relevant information from the sample of SAAOs and farmers in conformity with the objectives of the study. It contained both open and closed form of

questions. The questions were arranged systematically. The interview schedule initially prepared and sent to a panel of experts for necessary correction, edition, alteration and rearrangements. Further pre-test was conducted for correction, edition, alternation and rearrangements in the schedule. Then final version of the interview schedule was prepared, printed and multiplied for collection of data.

3.4 Selection of Variables of the Study

In descriptive research, the selection and measurement of variables constitute an important task. Hypothesis contains at least two elements namely independent variables and a dependent variable. An independent variable is the factor which is manipulated by the experimenter to ascertain its relationships to an observed phenomenon. A dependent variable is the factor which appears, disappears or varies on independent variables. The dependent variable of this study was effective use of extension teaching methods by the SAAOs. The independent variables were service length, in service training, media contact, job satisfaction, job facilities and job performance.

3.5 Measurement of Variables

3.5.1 Measurement of Independent Variables

3.5.1.1 Service Length

Service Length of a respondent was determined by the number of years a respondent had worked as SAAOs from date of joining in the job till the time of data collection.

3.5.1.2 In-Service Training

In Service Training of a respondent was calculated by the number of days a respondent attended training courses after joining in the job as SAAOs till the time of data collection.

3.5.1.3 Media Contact

Media contact score of a respondent was measured by his extent of media contact for agricultural information with various channels of communication. Each SAAOs indicated his extent of contact with each of 8 selected communication media by checking any one of the four responses namely, "regularly", "occasionally", "rarely", and "never". Weights were assigned to the responses as follows:

<u>Responses categories</u>	<u>Weight</u>
Regularly	3
Occasionally	2
Rarely	1
Never	0

The scores obtained by a SAAOs on all the 8 items were added together to compute his media contact score. This score of a respondent could range from '0' to '24' where '0' indicates no media contact and '24' indicates very high media contact.

3.5.1.4 Job Satisfaction

For measuring the job satisfaction of the respondents 20 statements were selected. The statements were arranged randomly in a scale in order to explore the respondents' real job satisfaction. The respondents indicated whether they "strongly agreed", "agreed", "disagreed" and "strongly disagreed". Weights were assigned to the responses as the following manner:

<u>Responses categories</u>	<u>Weight</u>
highly satisfied	3
moderate satisfied	2
less satisfied	1
not satisfied	0

Job satisfaction of a respondent was measured by summing up all the scores of all the responses of all selected 20 items. Thus job satisfaction score of a respondent could range from '0' to '60' where '0' indicates no satisfaction and '60' indicates very high job satisfaction.

3.5.1.5 Job Facilities

Job facilities were determined by 12 items and extent of facilitation of all these items were measured by using a 4-point scale. Weights were assigned to each of the item as follows:

<u>Categories of facilitation</u>	<u>Weight</u>
No facility	0
less facility	1
Moderate facility	2
High facility	3

Job facility score was computed for each respondent by summing up the weight of his/her responses against all the 12 items. Thus, job facility score of a respondent could range from '0' to '36', where '0' indicates no job facilities and 36 indicates very high job facilities.

3.5.1.6 Job Performance

To measure the SAAOs' job performance 18 items were selected. A 4-point scale was developed to quantify the responses of the SAAOs provided in respect of his/her job performance. Weights were assigned to the responses as follows:

<u>Responses categories</u>	<u>Weight</u>
High performance	3
Medium performance	2
Little performance	1
No performance	0

These scores could range from '0' to '54' where '0' indicates no job performance and '54' indicates very high job performance.

3.5.2 Measurement of Dependent Variables

Effective use of extension teaching methods by the SAAOs was the dependent variable of this study. Effective use of extension teaching methods has been measured by self rating (assessment by the SAAOs himself) and rating by the client systems (assessment by farmers). This means that the effective use of extension teaching methods by the SAAOs was assessed by SAAOs himself and the client systems. A total of 20 aspects of the effective use of extension teaching methods were identified for assessment. These 20 aspects of effective use of extension teaching methods by the SAAOs were assessed firstly by the SAAOs himself, followed by 3 (three) respective farmers for each SAAOs under his job area as the client system. This means that the effective use of extension teaching methods by 50 SAAOs were evaluated by 50 SAAOs themselves and by 150 farmers from the respective blocks of the SAAOs. In preparing the scale, the items were written in such a way that the rating person did not face any difficulty in understanding the meaning of items and giving their rating on each item properly. The twenty items of the scale represented twenty major areas of extension teaching methods of the SAAOs. Weights were assigned to the responses as follows:

<u>Response categories</u>	<u>Weights</u>
Very effective	3
Effective	2
Less effective	1
Not effective	0

The effective use of extension teaching methods score of SAAOs was measured by summing up all the scores of all the 20 responses of the respondents. Thus the effective use of extension teaching methods score for a SAAO could range from '0' to '60' where '0' indicates very poor use of extension teaching methods and '60' indicates very good use of extension teaching methods. In all the cases (SAAOs and farmers) the possible range of the effective use of extension teaching methods scores were the same.

The effective use of extension teaching methods by SAAOs was also assessed by 3 (three) respective farmers. When evaluated by the farmers, effective use of extension teaching methods score was taken as the mean value score of 3 those farmers. The effectiveness score of extension teaching methods of SAAOs evaluated by three farmers was calculated in the following way:

$$E_f = \frac{f_1 + f_2 + f_3}{3}$$

Where,

E_f = Effectiveness of extension teaching methods of SAAOs evaluated by the farmers

f_1 = First farmer

f_2 = Second farmer

f_3 = Third farmer

Finally, the effective use of extension teaching methods score of SAAOs was measured by the following formula:

$$E_t = \frac{E_s + E_f}{2}$$

E_t = Total score of effective use of extension teaching methods score of the concern SAAO

E_s = Effective use of extension teaching methods score evaluated by the concern SAAO himself

E_f = Mean of effective use of extension teaching methods scores of the concern SAAO evaluated by respective 3 farmers under the job area of the concern SAAO

3.6 Data Collection

For this study data were collected by the researcher himself from 50 SAAOs of Kazipur upazila of Sirajganj district. Data were also collected from 150 farmers of the respective blocks of respective upazila about the effective use of extension teaching methods by the concerned SAAOs only. Data collection took a period of one month from September 15 to October 15, 2007. Advanced information was given to the concerned Upazila Agriculture Officer for

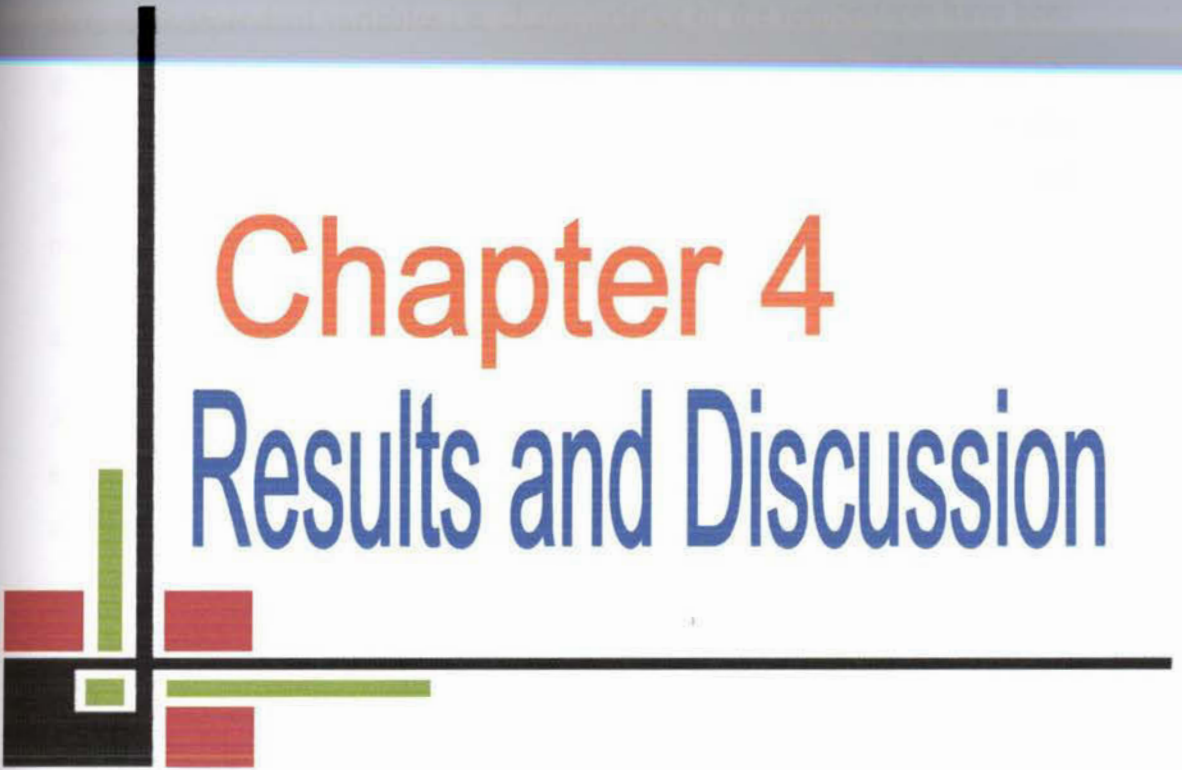
ensuring necessary cooperation with a view to collect data from the respondents. Appointments with the SAAOs were made in advance with the help of the AEOs. Appointments with the farmers were made with the help of SAAOs. Rapport was established with the respondents and the objectives of interview were clearly explained to them. Excellent cooperation was obtained from all the respondents.

3.7 Data Analysis Procedure

For describing the independent and the dependent variables the respondents were classified into several categories in respect of each of the variables. These categories were developed by considering the nature of distribution of the data and the general conditions prevailing on the social system. After data collection, those were compiled, tabulated and analyzed statistically in accordance with the objectives of the study. Qualitative data were converted into quantitative data by means of suitable scoring wherever necessary. Descriptive statistics such as number, percentage distribution, mean and standard deviation were used in describing variables of the study. Correlation analyses were employed for exploring relationship between selected characteristics of the SAAOs with their effective use of extension teaching methods. Correlation matrix was used to determine the inter-correlation among the variables. Five (0.05) and one (0.01) percent level of significance have been used as to reject/accept a null hypothesis. The table value of 'r' was calculated at $(50-2) = 48$ degrees of freedom.

Chapter 4

Results and Discussion



CHAPTER 4

RESULTS AND DISCUSSION

A sequential and detailed discussion on the findings of the study has been presented in this chapter. The chapter is divided into three sections. In the first section, independent variables i.e. characteristics of the respondents have been discussed. The second section dealt with dependent variable of the study i.e. effective use of extension teaching methods by the SAAOs of DAE and finally the third section deals with the relationship between the dependent and independent variables of the study.

4.1 Selected Characteristics of the SAAOs

A summary of the analyzed results for the selected personal, economic, social and psychological characteristics of the SAAOs (independent variables) for this study were shown in Table 4.1.

Table 4.1 SAAOs' Characteristics Profile

Sl. No.	Characteristics	Measuring Unit	Possible range	Observed range	Mean	Standard deviation
1.	Service Length	Actual years	Unknown	3-31	13.96	7.01
2.	In-service Training	Number of days	Unknown	9-38	22.28	7.84
3.	Media Contact	Score	0-24	12-21	16.70	2.10
4.	Job Satisfaction	Score	0 to 60	25-38	31.38	3.30
5.	Job Facilities	Score	0-36	12-25	19.78	3.10
6.	Job Performance	Score	0-54	20-35	25.28	2.91

4.1.1 Service Length

The observed service length scores of the SAAOs ranged from 3 to 31 having an average of 13.96 with a standard deviation 7.01. On the basis of the service length scores of the SAAOs, they were classified into three categories namely, “small service length” (up to 12 years), “medium service length” (13-21 years) and “high service length” (above 21 years). The distribution of the SAAOs according to their service length is shown in Table 4.2.

Table 4.2 Distribution of the SAAOs according to service length

Categories	SAAOs		Mean	Standard Deviation
	Number	Percent		
Small service length (up to 12 years)	21	42	13.96	7.01
Medium service length (13-21 years)	21	42		
High service length (above 21 years)	8	16		
Total	50	100		

Finding indicates that equal proportion (42 percent) of the SAAOs had small service length and medium service length compared to 16 percent having high service length.

4.1.2 In-Service Training

The observed in service training scores of the SAAOs ranged from 9 to 38 having an average of 22.28 and the standard deviation was 7.84. On the basis

of their in service training scores, the SAAOs were classified into three categories, namely “low training” (up to 18), “medium training”. (19-28) and “high training” (above 28). The distribution of the SAAOs according to their in-service training is shown in Table 4.3.

Table 4.3 Distribution of the SAAOs according to in-service training

Categories	SAAOs			
	<i>Number</i>	<i>Percent</i>		
Low training (up to 18)	19	38	Mean	Standard Deviation
Medium training (19-28)	18	36		
High training (above 28)	13	26		
Total	50	100		

It was found that the majority (38 percent) of the SAAOs belong to low in-service training compared to 36 and 26 percent having medium and high training respectively. In fact, there is no so much difference between low training and high training score. However, in-service training score should be more than the observed score. The immediate senior boss should take the initiative for the effective in-service training of SAAOs.

4.1.3 Media Contact

The media contact scores of the SAAOs ranged from 12 to 21 having an average 16.70 and a standard deviation of 2.10 against the possible range of 0-24. On the basis of their media contact scores, the SAAOs were classified into the following three categories namely, “low media contact” (up to 15),

“medium media contact” (16-18) and “high media contact” (above 18). Table 4.4 contains the distribution of the SAAOs according to their media contact.

Table 4.4 Distribution of SAAOs according to media contact

Categories	SAAOs		Mean	Standard Deviation
	<i>Number</i>	<i>Percent</i>		
Low media contact (up to 15)	13	26	16.70	2.10
Medium media contact (16-18)	25	50		
High media contact (above 18)	12	24		
Total	50	100		

Finding reveals that 50 percent of the SAAOs had medium media contact compared to 26 and 24 percent having low media contact and high media contact. The SAAOs of DAE are supposed to have more media contact than observed media contact score. It is expected that the more their media contact, the more will be their effective use of extension media contact.

4.1.4 Job Satisfaction

The observed job satisfaction scores of the SAAOs varied from 25 to 38 having an average of 31.38 and a standard deviation of 3.30 against the possible range of 0 to 60. The SAAOs were classified into the following three categories based on their job satisfaction scores: “low job satisfaction” (up to 29), “medium job satisfaction” (30-33), and “high job satisfaction” (above 33). The distribution of the SAAOs according to their job satisfaction scores is shown in Table 4.5.

Table 4.5 Distribution of SAAOs according to job satisfaction

Categories	SAAOs		Mean	Standard Deviation
	<i>Number</i>	<i>Percent</i>		
Low job satisfaction (up to 29)	15	30	31.38	3.30
Medium job satisfaction (30-33)	23	46		
High job satisfaction (above 33)	12	24		
Total	50	100		

It was found that 46 percent of the SAAOs possessed medium job satisfaction compared to 30 and 24 percent of them having low and high job satisfaction respectively. In fact, it is revealed that the observed highest job satisfaction score is only 38 out of possible highest score 100. So, it could be concluded that the SAAOs are not happy with their present job status.

4.1.5 Job Facilities

The observed job facilities scores of the SAAOs ranged from 12-25 having an average of 19.78 with a standard deviation of 3.10 against the possible range of 0 to 36. Based on their job facilities scores, the SAAOs were classified into three categories: “low job facility” (up to 17), “medium job facilities” (18-21) and “high job facilities” (above 21). The distribution of the SAAOs according to their job facilities scores is shown in Table 4.6.

Table 4.6 Distribution of SAAOs according to job facilities

Categories	SAAOs		Mean	Standard Deviation
	<i>Number</i>	<i>Percent</i>		
Low job facilities (up to 17)	12	24	19.78	3.10
Medium job facilities (18-21)	22	44		
High job facilities (above 21)	16	32		
Total	50	100		

The finding reveals that the highest portion (44 percent) of the SAAOs had medium job facilities while 24 and 32 percent of them had low job facilities and high job facilities respectively. Job satisfaction is confined to be dependent on job facilities. The result indicates that most of the SAAOs (68 percent) have low to medium job facilities. Therefore, it can be suggested that job facilities of the SAAOs should be increase.

4.1.6 Job Performance

The observed job performance scores of the SAAOs ranged from 20 to 35 with an average of 25.28 and a standard deviation of 2.91 against the possible range of 0 to 36. On the basis of their job performance scores, the SAAOs were classified into three categories: “low job performance” (up to 24), “medium job performance (25-29) and “high job performance”

(above 29). The distribution of the SAAOs according to their job performance score is shown in Table 4.7.

Table 4.7 Distribution of SAAOs according to job performance

Categories	SAAOs		Mean	Standard Deviation
	Number	Percent		
Low job performance (up to 24)	22	44	25.28	2.91
Medium job performance (25-29)	25	50		
High job performance (above 29)	3	6		
Total	50	100		

Findings show that the majority (50 percent) of the SAAOs had medium job performance compared to 44 and 6 percent having low and high job performance respectively. From the above finding it can be concluded that majority of the SAAOs (56 percent) had medium to high job performance although they received minimum job facilities. Therefore, DAE should increase job facilities of the SAAOs in order to get high job performance from the SAAOs.

4.2 Effective Use of Extension Teaching Methods

Effective use of extension teaching methods by the SAAOs was the dependent variable of the study. It was assessed in three steps. These are as follows:

- a) Self rating i.e. assessment by the SAAOs himself,
- b) Rating by the client system, i.e. assessment by the respective farmers.

c) Rating by average score, i.e. assessment by both the SAAOs himself and respective three farmers.

4.2.1 Self rating i.e. assessment by the SAAOs himself

An interval scale was used to measure effective use of extension teaching methods by the SAAOs himself.

The observed effective use of extension teaching methods score assessed by the SAAOs himself ranged from 30.00 to 42.00 having an average of 36.94 with a standard deviation 2.65. On the basis of their effective use scores, the SAAOs were classified into three categories: “less effective use” (up to 34.00), “moderately effective use” (34.01-38.00) and “highly effective use” (above 38.00). The distribution of the SAAOs according to their own assessment is shown in Table 4.8.

Table 4.8 Distribution of effective use of extension teaching methods according to their own assessment

Categories	SAAOs		Mean	Standard Deviation
	Number	%		
Less effective use (up to 34.00)	5	10	36.94	2.65
Moderately effective use (34.01-38.00)	32	64		
Highly effective use (above 38.00)	13	26		
Total	50	100		

The percent distribution of effective use of extension teaching methods by the SAAOs according to own assessment is shown in Figure 4.1.

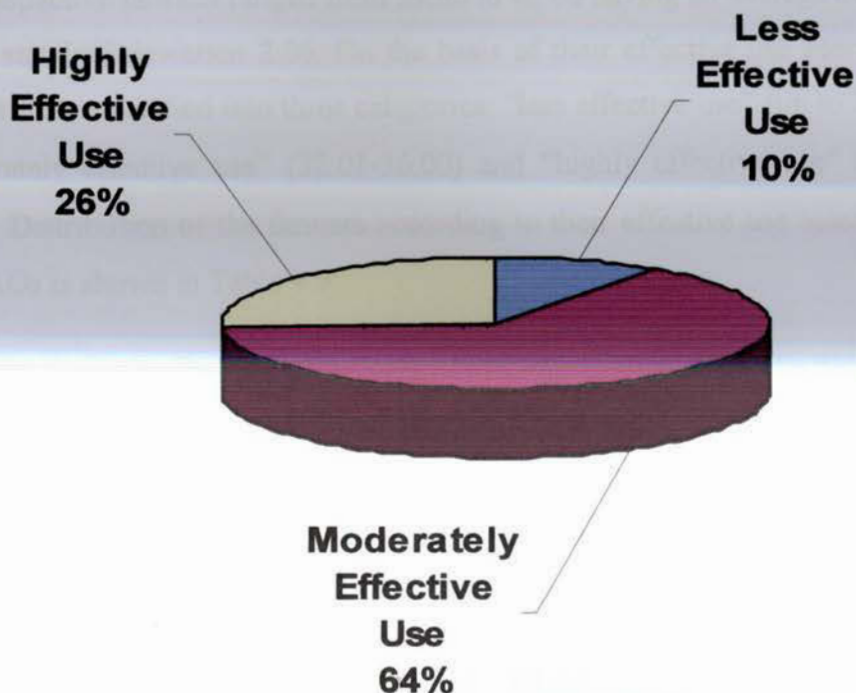


Figure 4.1 A pie graph showing different categories of effective use of extension teaching methods by the SAAOs assessed by the SAAOs himself

The finding shows that the highest proportion (64 percent) of the SAAOs fell in the “moderately effective use” category while 10 percent of them fell in the “less effective use” category and 26 percent fell in the “highly effective use” category. This scenario is not satisfactory and thus should change taking necessary steps by GOs and NGOs.

4.2.2 Rating by the client system, i.e. assessment by three respective farmers

An interval scale was used to measure effective use of extension teaching methods by the SAAOs which was assessed by three respective farmers for each of the SAAOs.

The observed effective use of extension teaching methods score assessed by three respective farmers ranged from 29.66 to 40.00 having an average of 34.75 with a standard deviation 2.06. On the basis of their effective use scores, the SAAOs were classified into three categories: “less effective use” (up to 32.00), “moderately effective use” (32.01-36.00) and “highly effective use” (above 36.00). Distribution of the farmers according to their effective use assessment of SAAOs is shown in Table 4.9.

Table 4.9 Distribution of the farmers according to their effective use assessment of SAAOs

Categories	Farmers		Mean	Standard Deviation
	<i>Number</i>	<i>%</i>		
Less effective use (up to 32.00)	15	10	34.75	2.06
Moderately effective use (32.01-36.00)	96	65		
Highly effective use (above 36.00)	39	26		
Total	150	100		

The percent distribution of effective use of extension teaching methods by the SAAOs according to three respective farmers’ assessment is shown in Figure 4.2.

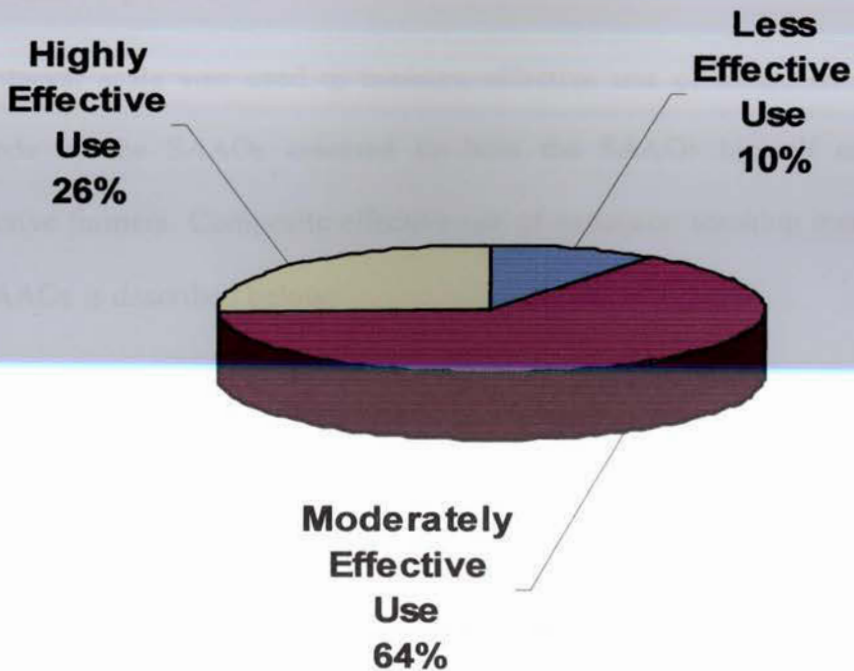


Figure 4.2 A pie graph showing different categories of effective use of extension teaching methods by the SAAOs assessed by three respective farmers

The finding shows that the highest proportion (64 percent) of the SAAOs fell in the “moderately effective use” category while 10 percent of them fell in the “less effective use” category and 26 percent fell in the “highly effective use” category. This scenario is not satisfactory and thus should change taking necessary steps by GOs and NGOs.

4.2.3 Rating by average score, i.e. assessment by both the SAAOs himself and respective three farmers

An interval scale was used to measure effective use of extension teaching methods by the SAAOs assessed by both the SAAOs himself and three respective farmers. Composite effective use of extension teaching methods by the SAAOs is described below:

The observed average score of effective use of extension teaching methods assessed by both the SAAOs and three respective farmers ranged from 31.16 to 40.00 having an average of 35.83 with a standard deviation 1.77. On the basis of their effective use scores, the SAAOs were classified into three categories: “less effective use” (up to 34), “moderately effective use” (34.01-37.00) and “highly effective use” (above 37.00). The distribution of the SAAOs according to their own assessment and three respective farmers’ assessment is shown in Table 4.10.

Table 4.10 Distribution of effective use of extension teaching methods according to the respective farmers’ assessment

Categories	SAAOs		Mean	Standard Deviation
	Number	%		
Less effective use (up to 34.00)	9	18	35.83	1.77
Moderately effective use (34.01-37.00)	28	56		
Highly effective use (above 37.00)	13	26		
Total	50	100		

The percent distribution of effective use of extension teaching methods by the SAAOs according to their own assessment and three respective farmers' assessment is shown in Figure 4.3.

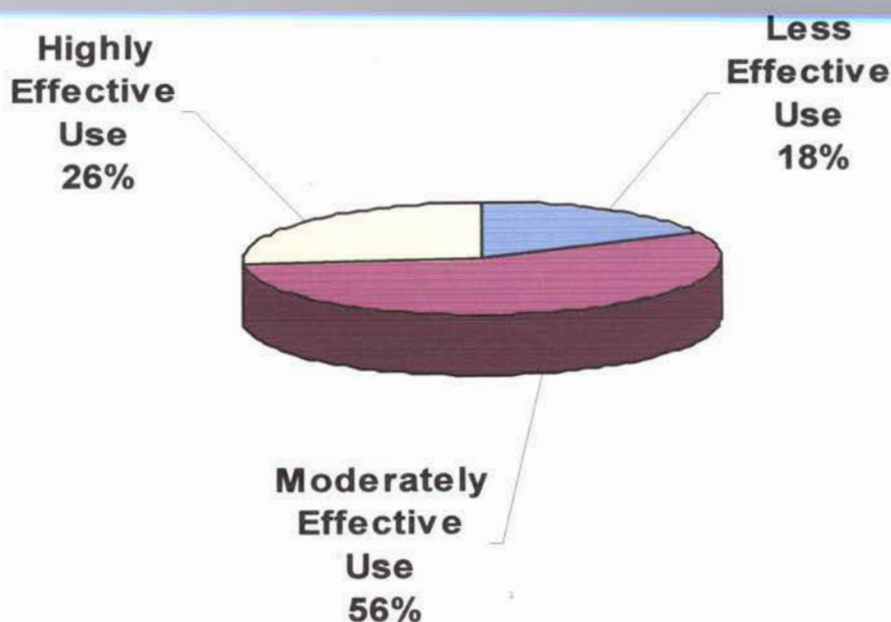


Figure 4.3 A pie graph showing different categories of effective use of extension teaching methods by the SAAOs assessed by both the SAAOs himself and three respective farmers

The finding shows that a large proportion (56 percent) of the SAAOs had moderately effective use of extension teaching methods compared to 18 and 26 percent having less effective use and highly effective use of extension teaching methods respectively. This scenario is not satisfactory and thus should change taking necessary steps by GOs and NGOs. To get

effective extension services continuously, in-service training opportunity and job facilities of the SAAOs should be increased.

4.3 Relationship between the characteristics of the SAAOs and their effective use of extension teaching methods

Coefficient of correlation was computed in order to explore the relationship between the selected characteristics of the SAAOs and their effective use of extension teaching methods. The selected characteristics constituted independent variables of the study and effective use of extension teaching methods by the SAAOs constituted the dependent variable of the study.

In this section relationship between six selected characteristics (independent variables) of the SAAOs viz. service length, in service training, media contact, job satisfaction and dependent variables i.e. effective use of extension teaching methods has been described.

Person's Product Moment Co-efficient of Correlation (r) has been used to test the hypothesis concerning the relationship between two variables. Five percent and one percent level of probability were used as the basis for rejection of a hypothesis. The calculated value of ' r ' was calculated at $(50-2) = 48$ degrees of freedom. The summary of the results of the co-efficient of correlation indicating the relationships between the selected characteristics of the respondents and their effective use of extension teaching methods is shown in Table 4.11.

Table 4.11 Correlation coefficient among the variables of the study

Dependent Variable	Computed Value of 'r'	Independent Variables	Table Value of 'r' at 48 Degrees of Freedom	
			5%	1%
Effective use of extension teaching methods	0.139 ^{NS}	Service Length	0.276	0.361
	0.396**	In Service Training		
	0.346*	Media Contact		
	0.291*	Job Satisfaction		
	0.136 ^{NS}	Job Facility		
	0.413**	Job Performance		

^{NS} = Not significant
* = Significant at 0.05 level of probability
** = Significant at 0.01 level of probability

4.3.1 Relationship between service length of the SAAOs and dependent variable

The relationship between service length of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between service length of the SAAOs and their effective use of extension teaching methods”

Computed value of the co-efficient of correlation between service length of the SAAOs and their effective use of extension teaching methods was found to be 0.139^{NS} as shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A negligible relationship was found to exist between the two variables.
- The computed value of 'r' (0.139) was smaller than the table value (± 0.279) with 48 degrees of freedom at 0.05 level of probability.
- The concerned null hypothesis was accepted.
- The co-efficient of correlation between the concerned variables was not significant at 0.05 level of probability.

The finding demonstrates that service length of the SAAOs had no significant relationship with their effective use of extension teaching methods.

4.3.2 Relationship between in service training of the SAAOs and dependent variable

The relationship between in service training of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between in service training of the SAAOs and their effective use of extension teaching methods”

The co-efficient of correlation between in service training of the SAAOs and their effective use of extension teaching methods was found to be 0.396** as shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A high relationship was found to exist between the two variables.
- The computed value of 'r' (0.396) was greater than the table value (± 0.362) with 48 degrees of freedom at 0.01 level of probability.
- The concerned null hypothesis was rejected.

- The co-efficient of correlation between the concerned variables was significant at 0.01 level of probability.

The finding demonstrates that there was a significant positive relationship between the in service training of the SAAOs and their effective use of extension teaching methods.

4.3.3 Relationship between media contact of the SAAOs and dependent variable

The relationship between media contact of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between media contact of the SAAOs and their effective use of extension teaching methods”

Computed value of the co-efficient of correlation between media contact of the SAAOs and their effective use of extension teaching methods was found to be 0.346* as shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A high relationship was found to exist between the two variables.
- The computed value of 'r' (0.346) was greater than the table value (± 0.276) with 48 degrees of freedom at 0.05 level of probability.
- The concerned null hypothesis was accepted.
- The co-efficient of correlation between the concerned variables was significant at 0.05 level of probability.

The finding demonstrates that the media contact of the SAAOs had a significant positive relationship with their effective use of extension teaching methods.

4.3.4 Relationship between job satisfaction of the SAAOs and dependent variable

The relationship between job satisfaction of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between job satisfaction of the SAAOs and their effective use of extension teaching methods”

Computed value of the co-efficient of correlation between job satisfaction of the SAAOs and their effective use of extension teaching methods was found to be 0.291* as shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A high relationship was found to exist between the two variables.
- The computed value of 'r' (0.291) was greater than the table value (± 0.276) with 48 degrees of freedom at 0.05 level of probability.
- The concerned null hypothesis was rejected.
- The co-efficient of correlation between the concerned variables was significant at 0.05 level of probability.

The finding demonstrates that the job satisfaction of the SAAOs had a significant positive relationship with their effective use of extension teaching methods.

4.3.5 Relationship between job facility of the SAAOs and dependent variable

The relationship between job facility of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between job facility of the SAAOs and their effective use of extension teaching methods”

Computed value of the co-efficient of correlation between job facility of the SAAOs and their effective use of extension teaching methods was found to be 0.136^{NS} as shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A negligible relationship was found to exist between the two variables.
- The computed value of 'r' (0.136) was smaller than the table value (± 0.276) with 48 degrees of freedom at 0.05 level of probability.
- The concerned null hypothesis was accepted.
- The co-efficient of correlation between the concerned variables was not significant at 0.05 level of probability.

The finding demonstrates that the job facility of the SAAOs had no significant relationship with their effective use of extension teaching methods.

4.3.6 Relationship between job performance of the SAAOs and dependent variable

The relationship between job performance of the SAAOs and their effective use of extension teaching methods was examined by testing the following null hypothesis:

“There is no relationship between job performance of the SAAOs and their effective use of extension teaching methods”

Computed value of the co-efficient of correlation between job performance of the SAAOs and their effective use of extension teaching methods was found to be 0.413** which is shown in Table 4.11. The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a positive trend.
- A high relationship was found to exist between the two variables.
- The computed value of 'r' (0.413) was greater than the table value (± 0.361) with 48 degrees of freedom at 0.01 level of probability.
- The concerned null hypothesis was rejected.
- The co-efficient of correlation between the concerned variables was significant at 0.01 level of probability.

The finding demonstrates that the job performance of the SAAOs had a significant positive relationship with their effective use of extension teaching methods.



Chapter 5

Summary, Conclusion and Recommendation

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations of the study.

5.1 Summary of the Findings

The summary of the major findings are presented in the following four subsections:

5.1.1 Selected Characteristics of SAAOs

Service Length

The observed service length scores of the SAAOs ranged from 3 to 31 with an average of 13.96 and the standard deviation was 7.01. Finding indicates that equal proportion (42 percent) of the SAAOs had small service length and medium service length compared to 16 percent having high service length.

In-Service Training

The observed in-service training scores of the SAAOs ranged from 9 to 38 with an average of 22.28 and the standard deviation was 7.84. It was found that the majority (38 percent) of the SAAOs low in service training compared to 36 and 26 percent having medium and high training respectively.

Media Contact

The observed media contact scores of the SAAOs ranged from 12 to 21 against the possible range of 0 to 24 with an average of 16.70 and the standard deviation was 2.10. Finding reveals that 50 percent of the SAAOs had medium

media contact compared to 26 and 24 percent having low media contact and high media contact.

Job Satisfaction

The observed job satisfaction scores of the SAAOs ranged from 25 to 38 against the possible range of 0 to 60 with an average of 31.38 and the standard deviation was 3.30. It was found that 46 percent of the SAAOs possessed medium job satisfaction compared to 30 and 24 percent of them having low and high job satisfaction respectively.

Job Facilities

The observed job facilities scores of the SAAOs ranged from 12 to 25 against the possible range of 0 to 36 with an average of 19.78 and the standard deviation was 3.10. Finding reveals that the highest portion (44 percent) of the SAAOs had medium job facilities while 24 and 32 percent of them had low job facilities and high job facilities respectively.

Job Performance

The observed job performance scores of the SAAOs ranged from 20 to 35 against the possible range of 0 to 36 with an average of 25.28 and the standard deviation was 2.91. Findings show that the majority (50 percent) of the SAAOs had medium job performance compared to 44 and 6 percent having low and high job performance respectively.

5.1.2 Effective Use of Extension Teaching Methods by the SAAOs

Measuring the effective use of extension teaching methods by the SAAOs was the main focus of this study. It was quantified by computing scores. These observed effective use of extension teaching methods scores of the SAAOs could range from 31.16 to 40.00 having an average of 35.83 with a standard deviation of 1.77. The findings indicate that a large proportion (56 percent) of the SAAOs had moderately effective use of extension teaching

methods compared to 18 and 26 percent having less effective use and high effective use of extension teaching methods respectively.

5.1.3 Relationship between the Selected Characteristics of the SAAOs and their Effective Use of Extension Teaching Methods

Six null hypotheses were formulated to explore the relationship between the selected characteristics of the SAAOs and their effective use of extension teaching methods. For testing each of the hypotheses the coefficient of correlation (r) test was used. Correlation analysis indicated that four out of six characteristics of the SAAOs namely, in-service training, media contact, job satisfaction and job performance had significant positive relationships with their effective use of extension teaching methods. Other two characteristics of the SAAOs namely, service length and job facilities had no significant relationship with their effective use of extension teaching methods.

5.2 Conclusions

A conclusion may be looked upon as an inference based on the findings of empirical study, pertinent facts and unbiased judgments. Findings of the study and the logical interpretations of their meaning in light of other relevant facts promoted the researcher to draw the following conclusions:

1. The effective use of extension teaching methods by the SAAOs was not satisfactory as 56 percent of them had moderately effective use of extension teaching methods. To develop the living status of the rural people by increasing agricultural production there is a need to further enhance the rate and extent of their use of extension teaching methods more effectively for agricultural purpose. Government, particularly DAE should provide sufficient training on the effective use of extension teaching methods to all the SAAOs of the study area and continuously perform extension research and provide other support

services so that the SAAOs can convey extension information to the farmers very effectively.

2. The study indicates that majority of the SAAOs (84 percent) had small to medium service length and its relationship with their effective use of extension teaching methods was not significant. It may, therefore, be concluded that proper emphasis should be given on the SAAOs of all service length categories by DAE in order to increase their effectiveness.
3. In-service training of the SAAOs of the study area had significant positive relationship with their effective use of extension teaching methods. Through this in-service training SAAOs become aware of the recent information on the various aspects of modern agricultural production system. As a result the SAAOs can effectively influence farmers to adopt agricultural innovation. Consequently, the above facts lead to the conclusion that necessary arrangements should be made to increase in-service training facilities of the SAAOs which would ultimately increase their effective use of extension teaching methods. Therefore, imparting training on various agricultural innovations should be arranged.
4. Finding indicates that there is significant relationship between media contact of the SAAOs with their effective use of extension teaching methods. Media contact increases the outlook of the SAAOs which lead them to know about recent agricultural innovation. It is evident from the fact that 50 percent of the respondents had medium extension contact. It may, therefore, be concluded that further increase of media

contact of the SAAOs through effective methods would lead to the multiplication of effective use of extension teaching methods.

5. Job satisfaction of the SAAOs had significant positive relationship with their effective use of extension teaching methods. This means that high job satisfaction rate among the SAAOs of the study area might have influenced in their effective use of extension teaching methods. But, it was observed that 46 percent of the SAAOs were under the level of medium job satisfaction. Hence, it may be included that unless immediate steps are taken to improve the level of job satisfaction of the SAAOs, it will be very difficult to get success in using extension teaching methods very effectively by those SAAOs. Therefore, it is suggested that concern authority should take necessary initiative to increase the job satisfaction of the SAAOs.
6. Finding of the study showed that job facilities of the SAAOs no had significant relationship with their effective use of extension teaching methods. It may be concluded that the availability of enough facilities of the SAAOs in their service environment is not essential to increase their effective use of extension teaching methods.
7. Job performance of the SAAOs had significant positive relationship with their effective use of extension teaching methods. Through job performance a SAAOs can express how effectively the SAAOs can use extension teaching methods. It was observed that 50 percent of the SAAOs had medium job performance. Therefore, the above fact leads to the conclusion that for effective use of extension teaching methods, the job performance should be developed.

5.3 Recommendations

On the basis of findings and conclusion of the study, recommendations are made as follows:

5.3.1 Recommendations for Policy Issues

1. Extensive research, development and training programmes should be designed and implemented by GOs to make available more ways to the SAAOs of using extension teaching methods.
2. In-service training should be conducted particularly for the SAAOs and more SAAOs should be engaged for effective and successful implementation of the development activities. Need-based training programmes should be developed and implemented extensively to improve the skill of SAAOs in different agricultural aspect and thereby increase their effectiveness.
3. Initiatives should be taken by concern authority to make the efforts necessary for scientific improvement of various extension teaching methods.
4. Strategy should be taken to make the extension teaching methods to be available to the SAAOs as well as to the farmers in an integrated approach involving private and public sector organizations.

5.3.2 Recommendations for Future Studies

1. The present study was carried out in a small area of a particular district. Similar studies may be conducted in other parts of the country to get a clear picture of the whole country which will be helpful for effective policy formulation.

2. There are few studies conducted so far particularly as to assess the effective use of extension teaching methods. In this study the researcher assessed the effective use of extension teaching methods of only the SAAOs. Future studies should be designed considering other officers of DAE and also considering the farmers.
3. The researcher selected only 6 (six) characteristics of the SAAOs to correlate with effective use of extension teaching methods by the SAAOs. It is recommended for future studies that the researcher should include other important characteristics of the SAAOs that might affect their effective use of extension teaching methods.



Chapter 6

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APPENDIX-A

DEPARTMENT OF AGRICULTURAL EXTENSION AND INFORMATION SYSTEM SHER-E-BANGLA AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

An Interview Schedule on

“EFFECTIVE USE OF EXTENSION TEACHING METHODS BY THE SUB ASSISTANT AGRICULTURE OFFICER OF DAE”

Respondent No.
Name of Respondent:
Place of positing Block.....
Upazilla.....
District.....
Region.....

(Please answer accurately as far as possible. Your information will be kept confidential.)

1. Service Length

Please mention your length of service:

Years.....Month..... Days.....

2. In-Service Training

Mention chronologically the particulars of in-service training attended during the tenure of your service life.

Sl. no.	Subject of in-service Training	Name of the training Centre/Institute	Duration(In days) With year

3. Extension media Contact

Please indicate the extent of your frequency of media contact by putting tick (✓) any one of the four responses.

Sl. no.	Programme/publication	Regularly	occasionally	Rarely (seldom)	Never
1.	Radio				
	a)Desh amar Mati Amar				
	b) Sonali Fasal				
	c) Krishi samachar				
	d) Sabuj Bangla				
	e) Khat Khamar				
	f) Azker Krishi				
	g) Krishikatha				
	h)Azker chashabad				
	i) Sonali prantor				
2.	Television (BTV): Matio manush				
3.	News paper: Azker krishi				
4.	Krishi katha				
5.	District bulletin of DAE				
6.	Leaflet				
7.	Booklet				
8.	Flash card				

4. Job Satisfaction

Please indicate the degree of your agreement by putting tick mark (✓) against each of the following statement.

Sl. no.	Items	Highly satisfied	Moderately satisfied	Less satisfied	Not at all satisfied
1.	Job security				
2.	Pay and allowances				
3.	Status in the society as a SAAO				
4.	Position in the society as SAAO				
5.	Opportunity to earn money and prosperity				
6.	Praise and recognition for good work				
7.	Prospect and provision for promotion				

8.	Beneficial service for the farmers				
9.	Freedom of work				
10.	Cooperation from colleagues				
11.	Cooperation from superiors				
12.	Cooperation form farmers				
13.	Office and accommodation facilities				
14.	Transportation facility				
15.	Freedom for risk and responsibility				
16.	Freedom for FINA and planning				
17.	Challenging task				
18.	Chances to be useful to others				
19.	Opportunity to be honored and remember by the client system				
20.	Excessive bossing by the superiors				

5. Job Facilities

Please indicate the degree of your agreement with the factors which facilitate to perform your responsibilities by putting tick mark (√) against each factor in the appropriate box.

Sl. no.	Facilitating factors	Very good facilities	Good facilities	Good to some extent facilities	Not Good
1.	Technical suggestions from the superiors				
2.	Group approach per week				
3.	One day practical training at the thana headquarters				
4.	Weekly conference at the thana headquarters				
5.	Cooperation from GKS (Gram Krishak				

	Samity) members				
6.	Farmers information need assessment and bottom-up planning				
7.	Establishment of demonstration plot				
8	Cooperation from GO and NGO members				
9	Traveling facilities				
10.	Arrangement of motivational tour of farmers				
11.	Farmers training				
12.	Supervision of agricultural input distribution				

6. Job performance

Please mention the extent of job performance as a SAAO by putting tick mark (√) against each activity.

Sl. no.	Activities	High performance	Medium performance	Little performance	No performance
1.	Maintaining SAAO dairy				
2.	Preparation of plan of work				
3.	Preparation of achievement report				
4.	Crop –cutting report				
5.	Insect pest attack report				
6.	Damage report due to natural calamities				
7.	Farm and home visit				
8.	Diary writing				
9.	Relief works				
10.	Census work				
11.	Preparing				

	impact point				
12.	Visit demonstration				
13.	Attending field days				
14.	Field visit				
15.	Discussion meeting				
16.	Attending training session				
17.	Monitoring extension programme				
18.	Identifying information needs and problems of farmers				

7. Effective Use of Extension Teaching Methods (ETM)

Please mention how effective was the use of extension teaching methods by the SAAO from the list of following extension teaching methods:

Sl. no.	ETM	Extent of use of ETM			
		<i>Very effective</i>	<i>Effective</i>	<i>To some extent effective</i>	<i>Not effective</i>
01.	Agricultural magazine				
02.	Consultation with AEO/UAO				
03.	Watching farm TV programme				
04.	Listening farm Radio broadcast				
05.	Visiting agriculture research station				
06.	Training attended				
07.	Farm and home visit				
08.	Organizing farmers training programme				
09.	Motivational tours				
10.	Distribution of leaflets and booklets				
11.	Organizing field days				

12.	Conduction of RD				
13.	Conduction of MD				
14.	Lecture in different occasion				
15.	Flash cards				
16.	Postering				
17.	Group discussion				
18.	Writing lecture script for farmers training programme				
19.	Dealing with farmers office call				
20.	Reporting UAO about standard crops				

Signature of the interviewer
Date:

APPENDIX-B

CORRELATION MATRIX AMONG THE VARIABLES OF THE STUDY

VARIABLE	X1	X2	X3	X4	X5	X6	X7	X8	X9
X1	1								
X2	.742**	1							
X3	.032 ^{NS}	.130 ^{NS}	1						
X4	.056 ^{NS}	.218 ^{NS}	.479**	1					
X5	.072 ^{NS}	.028 ^{NS}	.372**	.322*	1				
X6	.340*	.405**	.311*	.301*	.075 ^{NS}	1			
X7	.099 ^{NS}	.378**	.478**	.442**	.125 ^{NS}	.371**	1		
X8	.133 ^{NS}	.215 ^{NS}	-.017 ^{NS}	-.082 ^{NS}	.073 ^{NS}	.241 ^{NS}	.115 ^{NS}	1	
X9	.139 ^{NS}	.396**	.346*	.291*	.136 ^{NS}	.413**	.819**	.663**	1

^{NS} = Not Significant

* = Correlation is significant at the 0.05 level

** = Correlation is significant at the 0.01 level

X1 = SERVICE LENGTH

X2 = IN SERVICE TRAINING

X3 = MEDIA CONTACT

X4 = JOB SATISFACTION

X5 = JOB FACILITIES

X6 = JOB PERFORMANCE

X7 = EFFECTIVE USE OF EXTENSION TEACHING METHODS OF SAAO
ASSESSED BY SAAO HIMSELF

X8 = EFFECTIVE USE OF EXTENSION TEACHING METHODS OF SAAO
ASSESSED BY RESPECTIVE FARMERS

X9 = EFFECTIVE USE OF EXTENSION TEACHING METHODS OF SAAO
ASSESSED BY BOTH SAAO & RESPECTIVE FARMERS