2015

Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study

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University of Rajshahi

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A Dissertation

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Partial Fulfillment of the Requirements for the Degree of

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Session: 2012-13

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CERTIFICATE

We have the pleasure to certify that the dissertation titled "Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study" is the original research work of Md. Mahedi Hasan. So far as we know, no other person was associated in any stage of his research work.

We went through the draft and the final version of this dissertation very carefully and found it satisfactory for submission to the Institute of Bangladesh Studies, University of Rajshahi, Bangladesh for the Degree of Doctor of Philosophy in Marketing.

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DECLARATION

I do hereby declare that the dissertation titled “Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study” submitted to the Institute of Bangladesh Studies, University of Rajshahi, Bangladesh, for the Degree of Doctor of Philosophy in Marketing, is my original research work. No part of this thesis, in any form, has been submitted to any University or Institution for any Degree or Diploma.

Md. Mahedi Hasan

ACKNOWLEDGEMENT

The study has been undertaken for partial fulfillment of the requirements for the PhD Degree in Marketing. First of all I express my heartfelt gratitude to Allah, the Omnipotent, Omniscient and Omnipresent. I am grateful to the Institute of Bangladesh Studies, University of Rajshahi, Bangladesh for giving me the opportunity to conduct the research.

I express my deep sense of gratitude to my supervisor Dr. Md. Nurul Islam, Professor, Department of Statistics, University of Rajshahi and my co-supervisors Dr. Md. Aminul Hoque, Professor and Chairman, Department of Agronomy and Agricultural Extension, University of Rajshahi and Dr. Md. Nazrul Islam Mondal, Associate Professor, Department of Population Science and Human Resource Development, University of Rajshahi for their constant supervision and guidance for the completion of the dissertation. In spite of their busy schedule, they gave enough time to read the manuscript with patience. I must admit that without their active supervision and support it would have not been possible for me to come to the completion of this work.

I am grateful to Dr. Md. Golam Hossain, Professor, Department of Statistics, University of Rajshahi for his valuable suggestions during data processing, analysis and interpretation.

I also express my sincere gratitude to Professor Dr. M. Shohidullah, Director of IBS, R.U, and other faculties and staff of IBS, RU for their generous help and valuable suggestions they offered during different stages of this research work.

I am indebted to the officials of the Ministry of Agriculture, Ministry of Fisheries and Livestock and Bangladesh Betar for their encouragement and help at various stages of my work. Especially I owe a debt of gratitude to Md. Rukunuzzaman, Deputy Director of Bangladesh Betar, Dhaka; Miss Gul-Shahana, Assistant Director of Farm Broadcasting Cell of Bangladesh Betar Dhaka; Md. Mominur Rahman, Deputy Regional Director, of Bangladesh Betar Khulna; Md. Shahidul Islam, Deputy Regional Director of Bangladesh Betar, Khulna; Mohammad Forid Uddin, Deputy Regional Director of Bangladesh Betar Rajshahi and Shuli Rani Boshu Deputy Regional Director of Bangladesh Betar, Rajshahi; Dr. Md. Zahangir Alam, Deputy Director, Mass Communication, AIS, Khamarbari, Dhaka; Md. Abu Sayem, Regional Director, IAIS project, AIS, Rangpur; Abdulla-Hill-Kafi, Regional Agriculture Information Officer, Agricultural Information Service, Rajshahi; Md. Zobidul Kabir, Veterinary Surgeon, DLS, Dhaka; Md. Salim Akhter, Farm Manager, Chapainababgang; Md. Rakib Uddin, Upazila Agriculture Officer, Rajbari, Foridpur and my friend Md. Mahmud Alam, PhD fellow, IBS for their irreplaceable support to me.

I shall be failing in my duty if I do not put on record my warmest feelings and gratefulness for the generous cooperation of the respondents and local people of the study villages. I am also grateful to 32 officers of different departments of the People's Republic of Bangladesh whom I interviewed as key informants.

I have visited and liberally used library facilities of a number of institutions of Bangladesh. These are the libraries of the Institute of Bangladesh Studies, University of Rajshahi, University of Dhaka, the Seminar Libraries of Mass Communication and Agricultural Extension of the University of Rajshahi. I must express my heartfelt gratitude to the officers and staff of these institutions for their sincere cooperation. I owe

my sincere thanks to Md. Monirul Haque Lenin, Assistant Secretary, and other officers and staff of IBS, University of Rajshahi for their whole-hearted cooperation in completing the different official procedures of this research.

Finally I express my heartfelt gratitude to my parents, mother-in-law, brothers, sister and my wife for their encouragement and cooperation and more especially for putting up with my absence for years.

Md. Mahedi Hasan

GLOSSARY

Ajker Chashabad	:	Name of a five minute farm program broadcast from Bangladesh Betar, Sylhet.
Aman	:	A major rice crop in Bangladesh.
Amar Desh	:	Name of a farm program broadcast from Bangladesh Betar, Dhaka.
Amloki	:	A medicinal fruit of Bangladesh.
Ashar	:	The third month of Bengali year
Ashwin	:	The 6^{th} month of Bengali year.
Asor	:	One type of farm program consists of different formats (drama, discussion, talk, question answer, song and so on) of Program.
Aus	:	A major rice crop in Bangladesh.
Bagda	:	A type of shell fish reared in salty water.
Baishakh	:	The 1^{st} month of Bengali year.
Bandarban	:	An administrative part or area of Bangladesh named District.
Bangladesh Betar	:	Name of the national radio of Bangladesh which is the

		biggest electronic mass media.
Barinagar	:	Name of a market under Jessore district of Bangladesh.
Barishal	:	An administrative part or area of Bangladesh named Division bigger than District.
Betar	:	The national radio of Bangladesh named Bangladesh Betar.
Bigha	:	Unit of measurement of land.
Biplobi	:	Revolutionist.
Boro	:	A major rice crop in Bangladesh.
Buniyadi Ganatantrer Asor	:	Name of a farm program introduced by Radio Pakistan.
Chaitra	:	The 12^{th} and last month of Bengali year.
Chal Kumra	:	A type of large fruit with hard skin and soft flash. Gourd is often dried and used as container.
Chashabad: Mohila Asor	:	Name of a farm program designed and broadcast for the female listeners of Bangladesh Betar Khulna.
Chashadad	:	Name of a farm program designed and broadcast by Bangladesh Betar Khulna.
Chittagong	:	An administrative part or area of Bangladesh named Division bigger than District.

Comilla	:	An administrative part or area of Bangladesh named District.
Cox's Bazar	:	An administrative part or area of Bangladesh named District.
Daruchini	:	A type of spices used for cooking curry and used as medicine.
Desh Amar Mati Amar	:	Name of a farm program broadcast from Bangladesh Betar, Dhaka and relayed from most of the regional stations of Bangladesh Betar.
Dhaka	:	The capital city of Bangladesh.
Dhaka 'K'	:	A Medium Wave (MW) frequency used by Bangladesh Betar, Dhaka.
Dhaka 'Kh'	:	A Medium Wave (MW) frequency used by Bangladesh Betar Dhaka.
Dhundul	:	A long vegetable with green skin and whitish soft flash.
Ei Desh Ei Mati	:	Name of a farm program introduced by Bangladesh Betar Khulna.
Elach	:	A type of spices used for cooking curry and used as medicine.
Foridpur	:	An administrative part or area of Bangladesh named

District.

Gayer Bodhu	:	Name of a farm program broadcast from Bangladesh Betar, Chittagong for the female farmers and the housewives.
Golda	:	A type of shell fish reared in sweet water
Gramer Katha	:	Name of a radio program developed at the end of 1939 for all types of listeners of the villages of East Bengal.
Guti Urea	:	A type of fertilizer containing nitrogen.
Jag of Jute	:	A system of putting the raw jute under water for decomposition.
Jatka	:	A juvenile fish especially hilsha which is prohibited for fishing by the law of Bangladesh.
Jessore	:	An administrative part or area of Bangladesh named District.
Jhinga	:	A long vegetable of green skin with ridge and whitish soft flash.
Jibontika	:	Short drama.
Jor-Kolom	:	Scion and stalk joint together.
Kaderdi	:	A local market of Foridpur, a district of Bangladesh.

Keshorhat	:	A local market of Rajshahi, a district of Bangladesh.
Khamar Bari	:	Name of a farm program broadcast from Bangladesh Betar, Rangamati
Kheshari	:	A type of pulse like lentil.
Khete Khamare	:	Name of the first program produced exclusively for the farmers of East Pakistan. Now there is a farm program from Bangladesh Betar, Rangpur.
Khetkhamar Samachar	:	Name of a daily discussion program broadcast from Bangladesh Betar, Rajshahi.
Khulna	:	An administrative part or area of Bangladesh named Division bigger than District.
Kishan Mati Desh	:	Name of a daily discussion program broadcast from Bangladesh Betar,Thakurgha.
Kishani	:	Name of a daily discussion program broadcast from Bangladesh Betar, Sylhet.
Kopilmoni	:	Agro based market of Khulna, Bangladesh.
Koromca	:	A medicinal fruit of Bangladesh.
Krishani Kotha	:	Name of a daily discussion program broadcast from Bangladesh Betar, Rangpur.
Krishani Sava	:	Name of a daily discussion program broadcast from

		Bangladesh Betar, Rajshahi.
Krishi Katha	:	Name of a daily discussion program broadcast from Bangladesh Betar, Bandarban.
Krishi Khamar	:	Name of a daily discussion program broadcast from Bangladesh Betar, Chitagang.
Krishi Samacar	:	Name of a daily discussion program broadcast from Bangladesh Betar, Khulna.
Labanga	:	A type of spices used for cooking curry and used as medicine.
Magh	:	The 10^{th} month of Bengali year.
Mash kalai	:	A type of pulses.
Modhupur	:	An agro-based local market of Tangail, a district of Bangladesh.
Motsya-O-Prani Sampad Barta	:	Name of a daily discussion program broadcast from Bangladesh Betar, Rajshahi.
Moymanshing	:	An administrative part or area of Bangladesh named District.
Mug (moth bean),	:	A type of pulses.
Nandail	:	An agro-based local market of Moymanshing, a district of Bangladesh.

Nim	:	A medicinal tree of Bangladesh.
Ponka Shakh	:	A type of herbaceous plant used as vegetable.
Rajshahi	:	An administrative part or area of Bangladesh named Division bigger than District.
Rangamati	:	An administrative part or area of Bangladesh named District.
Rangpur	:	An administrative part or area of Bangladesh named Division bigger than District.
Ranikhet	:	A type of disease of Chicken.
Rui	:	A type of carp fish.
Shyamal Sylhet	:	Name of a daily discussion program broadcast from Bangladesh Betar, Shelet.
Sobuj Bangla	:	Name of a daily discussion program broadcast from Bangladesh Betar, Rajshahi.
Sonali Phasol	:	Name of a daily discussion program broadcast from Bangladesh Betar, Dhaka.
Sonali Prantar	:	Name of a daily discussion program broadcast from Bangladesh Betar, Cox-s Bazar.
Sraban	:	The 4^{th} month of Bengali year.

Sylhet	:	An administrative part or area of Bangladesh named Division bigger than District.
Taka	:	Unit of measurement of the currency of Bangladesh.
Tangail	:	An administrative part or area of Bangladesh named District.
Thakurgaon	:	An administrative part or area of Bangladesh named District.
Thankuni	:	A medicinal plant also used as vegetable in Bangladesh.
Til	:	A type of oil-seed.
Tosha	:	A type of jute.
Union	:	The smallest administrative unit of Bangladesh.
Upozila	:	The second unit of local government of Bangladesh.

ABBREVIATION

AI	:	Artificial Insemination
AlS	:	Agricultural Information Service
AO	:	Agriculture Officers
AWD	:	Alternating Weathering and Drying
BARI	:	Bangladesh Agricultural Research Institute
BB	:	Bangladesh Betar
BBC	:	British Broadcasting Corporation
BQ	:	Black quarter
BRDB	:	Bangladesh Rural Development Board
BRRI	:	Bangladesh Rice Research Institute
BTV	:	Bangladesh Television
C	:	Chashabad
DM	:	Desh Amar Mati Amar
FM	:	Frequency Modulation
FMD	:	Foot and Mouth Disease
FO	:	Fisheries Officer
FP	:	Farm Programs
IPM	:	Integrated Pest Management
KII	:	Key Informant Interview
KS	:	Khetkhamar Shamachar
MDG	:	Millennium Development Goal
MW	:	Medium Wave

PPR	:	Peste des petits Ruminants
RD	:	Regional Director
SB	:	Shobuz Bangla
SPSS	:	Statistical Package for Social Science.
UFO	:	Upozila Fisheries Officer
VOA	:	Voice of America

ABSTRACT

Bangladesh Betar has been developing and broadcasting different types of farm programs for decades for the development of the agriculture and the farming communities of Bangladesh. These farm programs are in dire need of academic research for in-depth evaluation to know the extent to which the programs are successful in achieving the goals. An effort has been made in this study to reveal the effectiveness of the farm programs of Bangladesh Betar.

This research is predominantly qualitative in nature where Khulna and Rajshahi districts have been selected as the study areas. Document analysis, key informant interview (KII) and survey methods have been used as methodology for this study. Relevant official documents from Bangladesh Betar, agricultural departments and other government offices have been collected for document analysis. For KII twenty eight key informants from Ministry of Agriculture, Ministry of Fisheries and Livestock, and Bangladesh Betar have been selected based on some specified criteria. For questionnaire survey, 465 respondents from Rajshahi and Khulna districts have been selected through random sampling technique. Descriptive analysis (Frequency distributions, proportional test analysis) has been done for analyzing the data and binary logistic regression model has been used to measure the intensity of the explanatory variables on explained variables.

Experts' view is that there is a crying need of farm programs for the development of agriculture. The study has revealed that 71.40% of the experts think that there must be farm programs broadcast from Bangladesh Betar. Almost all (96.8%) the farmers need farm programs. Among them 20% want farm programs from Bangladesh Betar and another 21.72% want farm programs both from Radio (Bangladesh Betar) and

Television. The farm programs designed and broadcast from Bangladesh Betar deserve the qualities of a good program to have beneficial effect on farming and the farmers. The present broadcasting schedules do not match the choice of most of the farmers and the broadcasting frequencies of farm programs are not enough. There is discrimination among the sectors in case of allocation of broadcasting hours. According to the experts the programs should be such that the farmers can participate in the programs.

Bangladesh Betar itself fails to reach 93.33% of the farmers. Only 6.67% of the farmers listen to the farm programs of Bangladesh Betar. Radio is not culturally fit. Most of the farmers object to the obsolescence of radio (Bangladesh Betar). But almost all the farmers have faith in the information broadcast from Bangladesh Betar. Bangladesh Betar has failed to motivate the farmers to listen to its farm programs. A large number of farmers do not have belief and confidence in the expertise of the government experts especially the agriculture officers and the fisheries officers. Even a vast majority of the farmers think that they know better than the experts. They do not have the urge to know any new technology. Even most of them do not know that they are not aware of the modern farming technologies and their importance. Lack of consciousness of the modern technologies and their benefits is an impediment to listening to the farm programs. Academic education and trainings on agriculture increase the consciousness of the farmers of the new technologies of farming and the benefits of using the technologies which leads them to listening to farm programs. Very weak and constricted FM (Frequency Modulation) transmission of farm programs is an obstacle to listening to the farm programs.

The farm programs of Bangladesh Betar are very much effective in educating the farmers about the modern technologies of farming. The study has revealed that most of

the farmers who listen to the farm programs do not listen to the programs regularly. Yet, there is a clear difference between the listener and non-listener of the farm programs of Bangladesh Betar. At almost every level of farm knowledge the listeners of the farm programs are at better position than the non-listeners of the farm programs. It is also proved that farm programs can be a better complement to other mechanisms for educating the farmers about the farm technologies. The findings divulge that in every sector the farmers who listen to the farm programs of Bangladesh Betar are aware of the modern technologies for farming more than the farmers who do not listen to the farm programs.

The research findings reveal that in every sector the farmers who listen to the farm programs of Bangladesh Betar are motivated to adopt the new technologies more than the farmers who do not listen to the farm programs. Even the mindset of the farmer who listens to the farm programs has shaped up better than that of the farmer who does not listen to the farm programs.

The farm programs of Bangladesh Betar are effective for the diffusion of farm technologies and as media of instruction these farm programs deserve the ability to educate and motivate the farmers in adopting farm technologies though Bangladesh Betar itself fails to reach its target listeners.

Initiatives are to be taken as stimulants to make the farmers listen to the farm programs of Bangladesh Betar. The programs have to be transmitted in such a way that the farmers can receive and listen to the programs through culturally fit technologies.

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CHAPTER ONE

INTRODUCTION

1 Introduction

Bangladesh Betar (BB) is the largest electronic mass media in Bangladesh with the biggest infrastructure covering the whole of Bangladesh. It considers the entire nation as its listeners irrespective of sex, age, cast and creeds. Programs are developed and broadcast for all the sects with due importance.

Agriculture is one of the most emphasized sectors of Bangladesh Betar because Bangladesh is a country of agrarian economy. Agriculture dominates the economy of Bangladesh providing food, employment, income and foreign exchange. The farm programs of Bangladesh Betar are designed and aired for the development of the whole agriculture and the farming communities of Bangladesh. The farm broadcast of Bangladesh Betar is a development broadcast. The purposes of development communication are divided into four categories: (i) to motivate, (ii) to inform, (iii) to teach, and (iv) to change behavior. These goals constitute one dimension along which radio's uses for development communication can be classified; a second dimension is that of strategies or ways of using radio.[1]

The objectives of Bangladesh Betar are: (i) to disseminate information (ii) to educate the listeners, and (iii) to entertain the listeners. Along with these objectives the development broadcast (farm programs) of Bangladesh Betar deserves some extra

[1] Dean T. Jamison and Emile G. McAnany, *Radio for Education and Development* (London: Sage Publication, 1978), p. 17.

specific objectives based on the situations prevailing in the agricultural sectors of Bangladesh. As development broadcast, the farm broadcast of Bangladesh Betar has the following objectives:

a. Changing the mindset of the farming communities: Through farm programs the listeners are provided with information. It is believed that when the farmers are well informed of any particular subject of agriculture, they are expected to be motivated and they will think positively that will lead to positive behavior.
b. Building awareness of the new agricultural technologies among the farmers.
c. Propagating the government policies, plans and steps taken in agricultural sectors, and
d. Propagating the development research of the departments of the Ministries of Agriculture, Fisheries and Livestock and so on.

The basic function of the farm programs of Bangladesh Betar is to provide extension services to the farmers. The main function of extension is to assist transfer of appropriate technologies to farmers.[2] Bangladesh Betar in collaboration with other agricultural departments does this job because multi-channel communication is more effective than single channel communication.[3] Besides, radio is used as an effective

[2] M. A. Kashem, A. Halim and Z. Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies- Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development,* Vol. II, No. 1, July, 1992, p. 95.

[3] E. M. Rogers, J. R. Braun and M. A. Wermilion, "Radio Forum: A Strategy for Rural Development," Institute for Communication Research, Stanford University, 1975, p. 3.

medium to instill a motivation, collaboration and development skills needed, as well government plan and agenda to the masses.[4]

Bangladesh Betar (former 'Radio Pakistan') started its mission exclusively for the farmers from 1966 with the inauguration of the farm program named *Khete Khamare* and still has been going on with farm broadcast. In course of time, Bangladesh Betar has launched many farm programs with different names and formats. Along with the central programs, Bangladesh Betar has introduced many farm programs for each of its regional stations based on the local needs. Now daily, weekly and monthly farm programs are aired regularly from Bangladesh Betar. So, the diffusion of modern farm technologies and the success of agriculture depend on the effectiveness of these farm programs of Bangladesh Betar.

1.1 Problem Statement

Radio deserves some competitive advantages among all the communication media. The most significant characteristic is radio's accessibility; another one is its auditory perception. Its accessibility, combined with its reliance on auditory perception, enables people to listen while carrying on a variety of other activities which do not necessarily interfere with their perception.[5]

In a study researchers concluded that on an average four years of schooling resulted in a 7.40% improvement in output.[6] According to John Mellor, education in rural areas is a central ingredient in a strategy to improve agricultural productivity with

[4] Fadzilah Yusof, Faridah Ibrahim and Wan Amizah WM, "Agricultural Radio Talks and Drama: Malaysia Early Development Experience," *Malaysian Journal of Communication,* Vol. 28, No. 1, 2012, p. 86.

[5] P. J. Grise et al. "Educational Radio: A Review of the Literature," Center for Educational Technology, Florida, the Florida State University, 1974, p. 4.

[6] Marlaine E. Lockheed, Dean T. Jamison, and Lawrence J. Lau, "Farmer Education and Farm Efficiency: A Survey," *Chicago Journals of Economic Development and Cultural Change,* Vol. 29, No.1, Oct. 1980, p. 61.

new inputs such as chemical fertilizers and pesticides, irrigation, high-yielding varieties and effective research and extension services.[7] The agriculture of Bangladesh is wrapped with so many problems related to the ignorance of the farmers. The agriculture of Bangladesh is dependent on the vagaries of nature because widespread poverty among the population engaged in agriculture makes them stick to traditional agricultural methods. Due to slow expansion of modern technologies as well as unplanned use of soil and water, the yields of different crops are not at the expected level.

As most of the farmers are uneducated they think rice-based production system is profitable. And so, in Bangladesh almost 75% cultivated land is covered by rice.[8] But this process is appeared to be harmful in protecting the productivity of land. So, to get rid of this situation the farmers are to be educated and Betar plays a vital role here.

In Bangladesh, only 4.14% of net cultivable land remains as currently fallow.[9] So, there is hardly any scope of increasing cultivable land. There is only option to increase agricultural production is to increase cropping intensity and yielding simultaneously which can be done inspiring the farmers to practise crop diversification and inter-cropping in a field instead of single cropping. Bangladesh Betar helps in motivating the farmers adopting this technology through its farm programs.

In some cases, it is not possible for a farmer to make the production profitable because of the shortage of labour and capital at the individual level. This problem can be

[7] Marlaine E. Lockheed, Dean T. Jamison, and Lawrence J. Lau, "Farmer Education and Farm Efficiency: A Survey," *Chicago Journals of Economic Development and Cultural Change,* Vol. 29, No.1, Oct. 1980, p. 38.

[8] National Agriculture Policy, Ministry of Agriculture, Government of the People's Republic of Bangladesh, April 1999. http://www.moa.gov.bd/policy/nap.htm, Accessed on 3rd September, 2013.

[9] Ibid.

solved through creating self-motivated co-operative society. Bangladesh Betar tries to motivate the farmers to form co-operative society by means of its farm programs.

Good quality seed is the prerequisite of good production. Small portion of the required quality seeds are supplied by Bangladesh Agricultural Development Corporation (BADC) and private organizations. The rest are managed by the farmers themselves and the farmers are being motivated and educated with relevant technological support for the production and preservation of seeds at the farmers' level so that the farmers can easily use good quality seeds. Bangladesh Betar plays an important role for the diffusion of required farm technologies and tries to motivate and educate the farmers for adopting the technologies through the farm programs.

Chemical fertilizer is one of the main inputs required for increasing crop production. The expansion of modern farm practices together with intensified cultivation has led to an increasing demand for fertilizer. It is, therefore, necessary to ensure timely supply of fertilizers to match the demand. As a result of unbalanced use of fertilizers, the fertility of land is declining on the one hand and the potential yield is not achieved on the other. In this respect, it is extremely important to adopt and implement such policies so as to encourage the farmers in using balanced fertilizer and at the same time protecting the soil fertility. According to national agriculture policy, steps already taken to popularize the use of granular urea as a means of reducing excessive use of urea fertilizers will be strengthened. Bangladesh Betar helps in motivating the farmers to use granular urea.

Integrated Pest Management (IPM) is one of the burning issues in modern agriculture. To resist pest infestation and to destroy harmful insects and preserve the useful ones the use of more pest resistant varieties of crops, light trap, hand net,

biological control measures and so on have to be increased and popularized to the farmers. All these belong to IPM. Bangladesh Betar tries to motivate the farmers to practise IPM.

Bangladesh Betar has been working for the development of agriculture through educating and building awareness among the farmers of Bangladesh by means of its farm programs. The success and failure of these farm programs is directly related with the development of the agriculture of Bangladesh. About 43.6% of the labour force is employed in agriculture with about 35.40% being employed in the crop sector, and remains a major supplier of raw materials for agro-based industries.[10] If the farm programs are successful, the workforce involved in agriculture will be aware of modern farm technologies and the production will be increased because a research shows that the farmers who listen to and watch the agricultural programs of Bangladesh Betar and Bangladesh Television (BTV) produce more principal crops (rice, jute and wheat) per *bigha* (unit of land measurement) than the farmers who do not listen to and do not watch the agricultural programs of Bangladesh Betar and BTV.[11] As most of the farmers are illiterate and uneducated, if they for whom the farm programs are aired do not listen to the programs, the production may fall.

The cultivable land is decreasing at the rate of 01% every year[12] but the population is increasing at the rate of 1.34% per year.[13] Now there is only 36,926

[10] Bangladesh Economic Review, 2012, http://www.mof.gov.bd/en/budget/13_14/ber/en/chapter-7en. pdf, Accessed on 10th June, 2013.

[11] Andrew Alak Kumar Dewari, "Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh," (PhD dissertation, IBS, RU, Bangladesh), p. 139.

[12] *Trends in the availability of agricultural land in Bangladesh*, The research proposal to be funded under National Food Policy Capacity Strengthening Programme (NFPCSP) Phase II, Implemented by FAO in collaboration with FPMU/Ministry of Food and Disaster Management, Government of the People's Republic of Bangladesh.

[13] Population & Housing Census 2011, Bangladesh Bureau of Statistics (BBS), Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

thousand acres of land under cultivation.[14] But the reality is that to achieve the Millennium Development Goal (MDG) Bangladesh has to reduce the number of the poor to 29% by 2015.[15] And to achieve this, 71% of the population is to be ensured with food equivalent to 2122 kcal per day.[16] So, the existence of the Bangladeshis will be at stake if the illiterate farmers who are entrusted with the responsibility to produce food from 36,926 thousand acres of land are not educated. This would be easy if the farm programs are successful because a research shows that rural farmers, if given conducive atmosphere and access to radio, could be enabled to get adequate information on technologies/recommendations of improved crops and farm practices.[17] So it is very important to know whether the farm programs are successful or not and this can be done through the analysis of the effectiveness of the farm programs.

There are many types of farm programs broadcast from Bangladesh Betar. Daily, weekly, monthly farm programs are developed and broadcast based on the demand of the listeners. It is very important to know to what extent these efforts are successful because a research has revealed that only 2.82% of the population listens to radio programs daily for education purpose.[18] In 1995 a research showed that 45% of the population listens to radio programs and only 18% possesses radio sets in the rural area.[19] If the claims are true then now it is the high time to evaluate the effectiveness of

[14] Land use statistics 2011 Yearbook of Agriculture of Bangladesh, BBS, p. 308, http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/ArgYearBook11/Chapter-10.pdf. Accessed on 10th July, 2013.

[15] *Millennium Development Goal Progress Report-2011*, GED, Bangladesh Planning Commission, Dhaka: Tithy Printing & Packaging, 2012, p.13.

[16] Ibid.

[17] T.O. Fadiji, "Effectiveness of Radio in Dissemination of Agricultural Information to Farmers in Rural Setting of Nigeria," *Global Journal of Social Sciences*, Vol. 4, No. 1-2, August, 2005, p. 35.

[18] Report on Bangladesh Literacy Survey, 2010, BBS, June, 2011, p. ix, http://www.bbs.gov.bd/webtestapplication/userfiles/image/Survey%20reports/Bangladesh%20Literacy%20Surver%202010f.pdf. Accessed on 10th July, 2013.

[19] *The Daily Bhorer Kagoj*, Dhaka, 12 June, 1995, pp. 1 & 8. (Cited in "Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh" (PhD Dissertation, IBS, Rajshahi University).

radio (Bangladesh Betar) programs for the listeners of different sectors. If the programs fail to entertain, motivate and educate the listeners then the program plans should be revised. If we analyze the research findings mentioned above, then it can be said that the radio programs fails to attract the listeners. That means, the popularity of radio (Bangladesh Betar) has fallen. Many people who used to listen to Bangladesh Betar now listen to the programs of BTV, other satellite television, private FM radio and foreign radio like British Broadcasting Corporation (BBC), Voice of America (VOA) and so on. But it is indisputable that, radio (Bangladesh Betar) deserves some competitive advantages which are absent from television and other media. The most competitive advantages of Bangladesh Betar are: (i) Easy accessibility, that is, Bangladesh Betar can reach where no other media can; (ii) Affordability, that is, radio is one of the cheapest devices which is within the reach of purchasing power of most of the people of Bangladesh and (iii) Auditory perception that means radio programs can be listened during the busiest period even while travelling and driving. A farmer while he/she is tilling his/her land can listen to the radio program which is not possible in case of any other media. This is why, it is a time befitting quarry about why the farmers do not listen to the farm programs, how many people listen to the programs of Bangladesh Betar and of them how many listen to the farm programs of Bangladesh Betar and whether the programs have any impact on agriculture. In 2001 a research showed that the more people were exposed to media, the more they were intended to accept the modern agricultural technologies.[20] In this case, the question remains about what about Bangladesh Betar is and how far it is applicable to the programs and listeners of Bangladesh Betar.

[20] Mst. Aklima Akhtar, "Impact of Mass Media on the Rural Community Adopting Socio-Economic Development Strategies" (PhD Dissertation, IBS, RU, Bangladesh, 2001), p. 126.

1.2 Research Questions

In pursuance of the problem statement there raise some questions which are as follows:

a. What is the present state of farm programs of Bangladesh Betar?
b. Is there any need of farm programs?
c. How do the farm programs of Bangladesh Betar meet the information need of the farmers?
d. What types of information farmers seek from the farm programs of Bangladesh Betar?
e. To what extent does Bangladesh Betar have the accessibility and acceptability to the farmers in presence of many alternative media?
f. To what extent do the farm programs of Bangladesh Betar educate the farmers?
g. To what extent do the farm programs of Bangladesh Betar affect the farm practices of the farmers?
h. To what extent do the farm programs of Bangladesh Betar affect the mindset of the farmers of Bangladesh?

1.3 Research Objectives

Based on the aforesaid research questions the following objectives have been selected for this study.

1.3.1 Core Objective

The core objective of the study is to know the effectiveness of the farm programs of Bangladesh Betar on the agriculture of Bangladesh.

1.3.2 Specific Objectives

The specific objectives of the research are:

a. To know the state of the farm programs of Bangladesh Betar.
b. To make an assessment of the need of the farm programs.
c. To assess the proportion of the farmers' access to the farm programs of Bangladesh Betar.
d. To know what type of information the farmers seek from the farm programs.
e. To know how much the farmers get their required information.
f. To know what type of farm programs the farmers expect from Bangladesh Betar.
g. To know whether the farmers are being educated by the farm programs.
h. To assess the influence of the farm programs on the mindset of the farmers.
i. To find out the effects of the farm programs on the farm practices.

1.4 Conceptual Framework

Communication is the transfer of information from sender to a receiver and in between there is communication channel (media). The communication channel brings the sender and the receiver close together. The success of communication greatly depends on the media of communication. The process of communication is being shown through the following communication model:[21]

[21] Heinz Weihrich and Harold Koontz, *Management: A Global Perspective*, 10th ed. (New York: McGraw-Hill, Inc., 2000), p. 540.

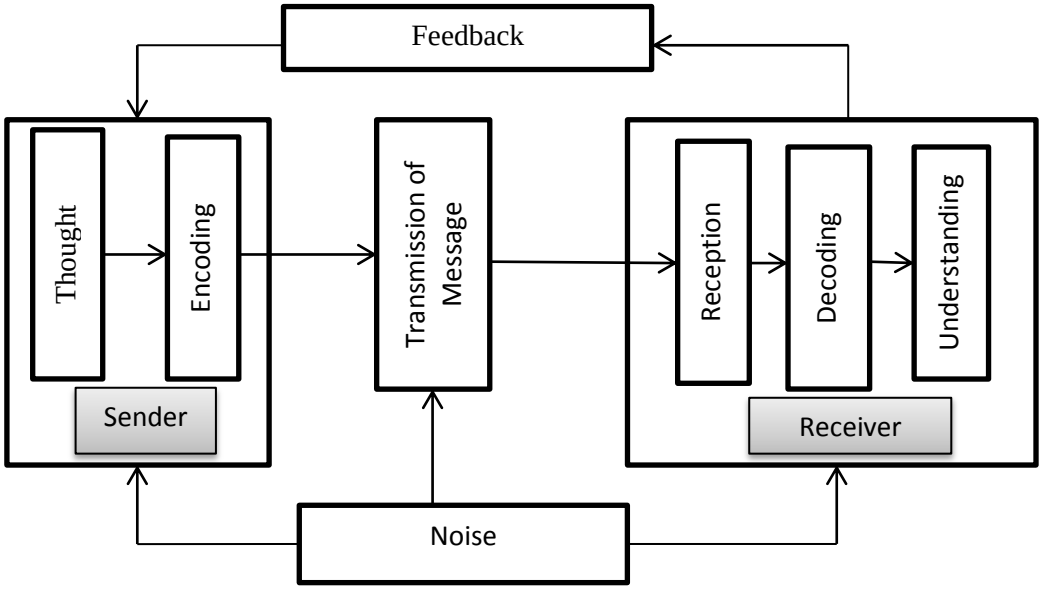

Figure 1.1: Communication model

Transfer of technology (TOT) is not merely the means of transferring knowledge, information and skills about technology to its potential users but also helping them to use these technologies fruitfully to their advantages. The basic consideration in the transfer of technology is "how to acquire and use the information" which requires the transfer of skills, managerial know how, and adaptation. Transfer of technology means the movement of technology through extension systems to users system (end users). The extension system also includes the adaptive research, farm trial, farming system research (FSR), and multi-location testing (MLT). Moreover, for effective transfer of technology support services such as inputs, credit and marketing of products also have to be incorporated.[22] The technology transfer process is depicted in the following figure:

[22] M.A. Kashem, A. Halim and M. Zulfiker Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies–A Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development*, Vol. II, No. 1, July 1992, p. 97.

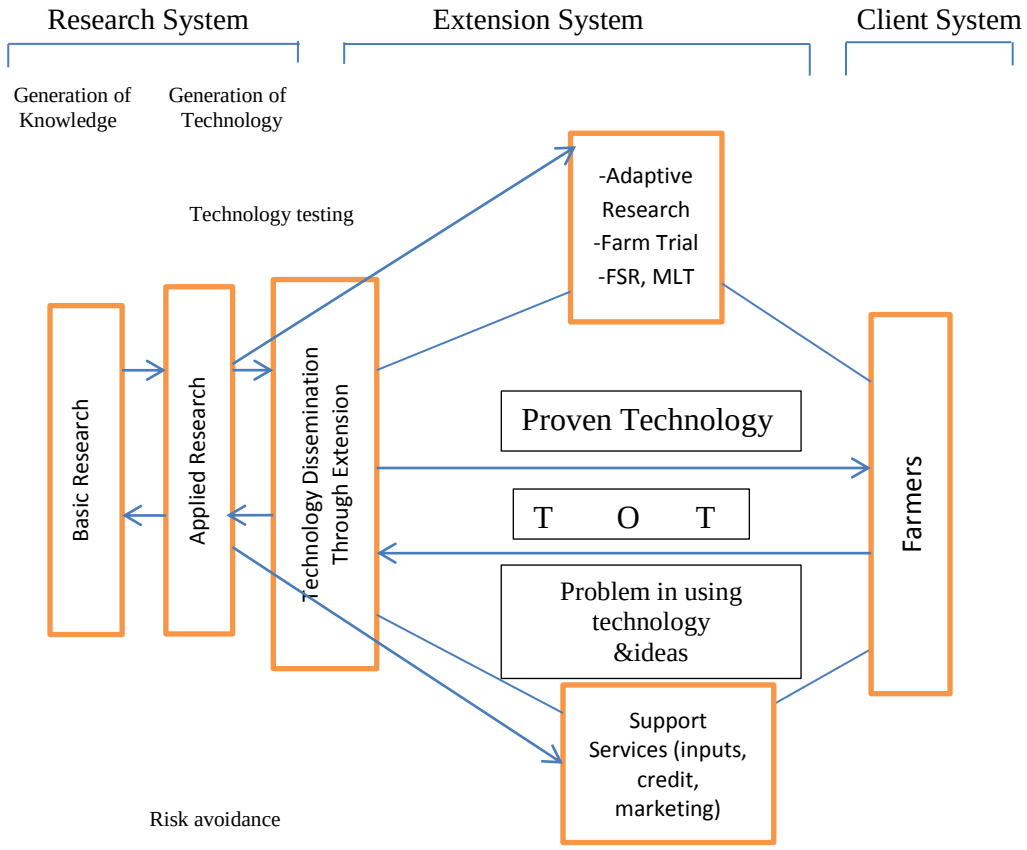

Figure 1.2: Technology transfer process

According to this model technology transfer process involves three distinct systems:

a. Research System (development of technology through basic and applied research).

b. Extension System (transfer of new technology by acting as interpreter, disseminator and facilitator). Radio can play a vital role here. Bangladesh Betar can play as an interpreter, disseminator and facilitator for transferring the new technologies to the farmers of Bangladesh. As Bangladesh Betar is only an audio media the experts cannot show the use but they can dictate the use of any technology.

c. Client System (technology utilization by farmers, that is, the target group who are expected to adopt the new technology into their existing farming system).

The model shows that if the technology is proved to be effective, the farmers will accept the technology and will repeat the use. On the other hand, if the farmers are not satisfied with the technology, they will reject the technology.

An alternative approach of technology development, transfer and utilization has been devised by Swanson, Roling and Jiggins which is depicted in the following figure:

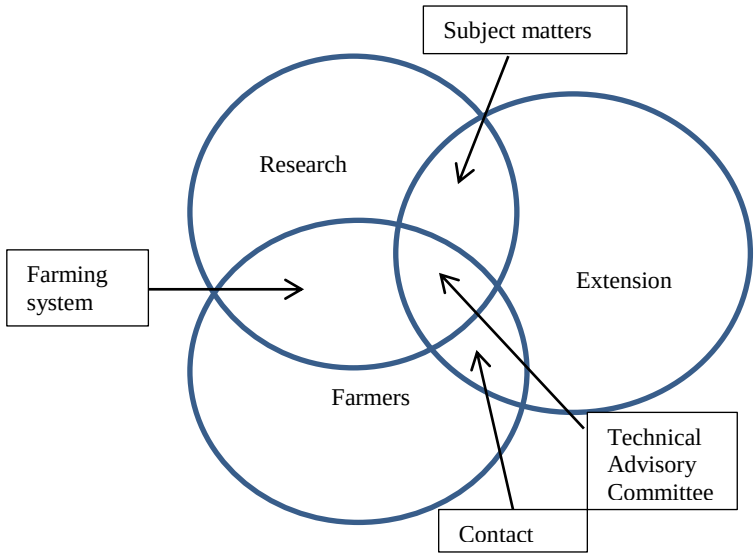

Figure 1.3: Conception of technology development, transfer and utilization system

This model suggests that agricultural researches may need to be directly involved in identifying farmers' problems and then working to solve those problems through farming system research approach. The potential solutions to farmers' problems could then be considered by a technical committee involving farmers, researchers, and

extension specialists to formulate technical recommendations that would be subsequently disseminated by extension and utilized by farmers.[23]

There is another popular adoption model described by E.M. Rogers in his book, *Diffusion of Innovations.* Rogers described the innovation-decision process as "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation."[24] According to Rogers the innovation-decision process involves five steps: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation.

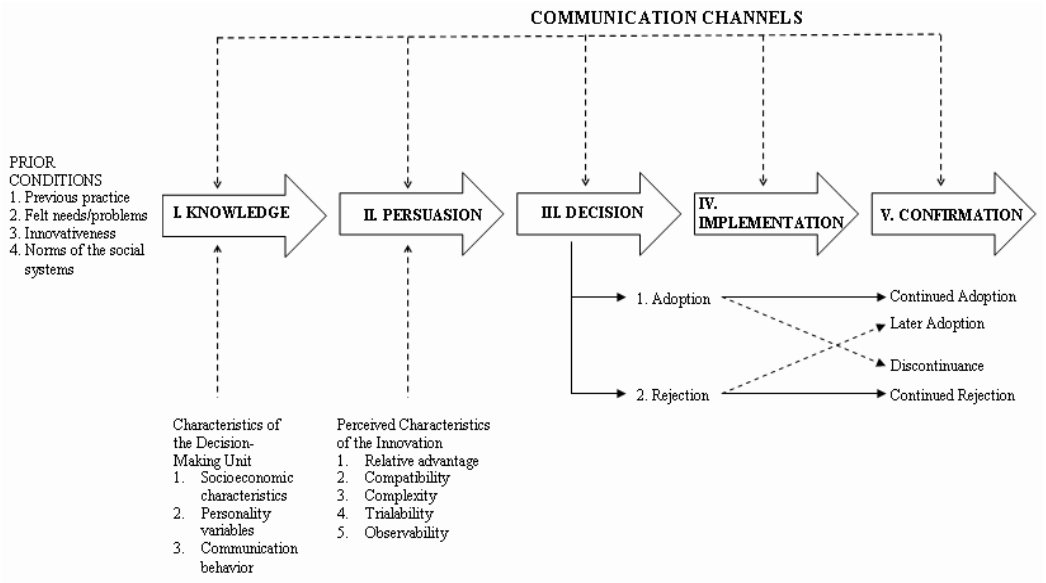

Figure 1.4: A model of five stages in the innovation-decision process

The Knowledge Stage

Technology transfer begins with the knowledge function when an individual is exposed to an awareness of the existence of the technology and gains some understanding of how

[23] B.E. Swanson, N. Roling and J. Jiggins, "Extension Strategies for Technology Utilization", pp. 89-107 in: B. E. Swanson ed. *Agriculture Extension: A Reference Manual*. 2nd ed. Rome: Food and Agricultural Organization of the United Nations.

[24] Everett. M. Rogers, *Diffusion of Innovations*, 5th ed. (New York: The Free Press, 2003), p. 172.

it functions. Extension practitioners need to provide three types of knowledge in this stage-

a. Awareness knowledge: Awareness knowledge consists of information and consciousness of the existence of a technology and its main features.

b. How-to-knowledge: It consists of information and understanding necessary to use and apply a technology properly.

c. Principles knowledge: It consists of understanding the principles underlying the technology and its use. It is usually possible for clients to adopt and regularly use a technology without understanding the principles knowledge involved.

In knowledge stage different mass media as radio, television, newspaper, poster, exhibition play an important role in creating awareness about the existence of the technology.

Persuasion Stage

Knowledge about a technology does not necessarily mean that it would be adopted. The technology might not be regarded as relevant or useful by the potential adopter. Thus, attitude towards a technology can intervene between knowledge and decision stage.

Decision on Technology Stage

During the decision stage the individual engages in activities that lead to a choice to adopt or reject the technology. Adoption is a decision to use and continue the full use of a technology. Adoption may also lead to discontinuance which is a decision to reject a

technology after having previously adopted it. Rejection is a decision not to adopt a technology. Rejection may be active rejection and passive rejection.

Implementation of the Technology

Until the implementation stage, the technology transfer process has been a strictly mental exercise. At the implementation stage, an innovation is put into practice. One of the aspects that occurs at the implementation stage is the re-invention which is the degree to which a technology is changed or modified by a user in the process of its adoption and implementation. The usual communication media at the implementation stage are different personal and interpersonal contacts.

Confirmation of the Use of Technology

Decision to adopt or reject is often not the terminal stage in the technology transfer process. Often an individual seeks reinforcement of the decision he/she has already made. He/she may reverse to his/her previous decision if exposed to conflicting messages about the technology. At this stage interpersonal contact media are mainly preferred.

There is another well-known model of the role of communication media in the transfer of technology to farmers that was discussed in details by M.A. Kashem. Here the role of media in transferring technologies to the farmers has been elaborated. The process of transfer of technology is depicted in the following figure:

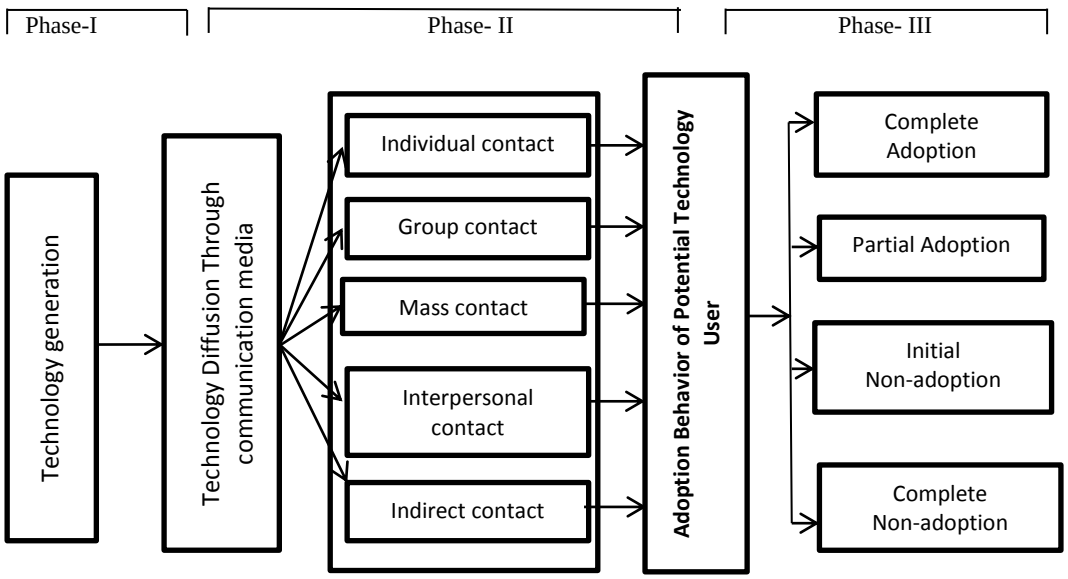

Figure 1.5: Model of role of communication media in the transfer of technology to farmers

The study of M.A. Kashem emphasized on phase-II where the role of communication media has been discussed.[25]

1.4.1 Conceptual Framework for This Study

Communication media play very important role in transferring technologies to the farmers. Bangladesh Betar as one of the biggest electronic mass media can play an important role in disseminating information to the farmers. Radio (Bangladesh Betar) performs its role in transferring the technology through different types of farm programs. Through the farm programs it (Bangladesh Betar) entertains, educates and motivates the farmers in adopting the new technologies which ultimately keeps a positive impacts on the socio-economic condition of the farmers and the agriculture of Bangladesh. This concept can be depicted in the following figure:

[25] M. A. Kashem, A. Halim and Z. Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies- Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development*, Vol. II, No. 1, July, 1992, p. 99.

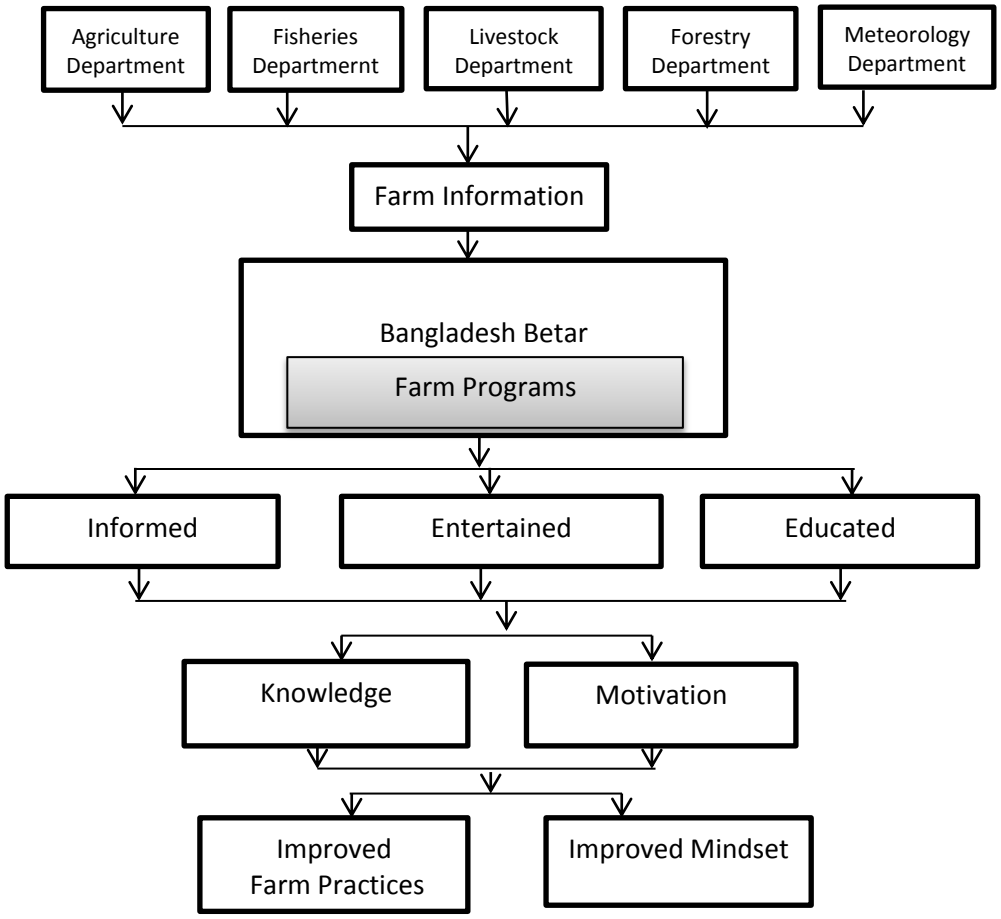

Figure 1.6: Conceptual model of the effectiveness of farm programs of Bangladesh Betar (Developed by the researcher)

The farm program is the program the contents of which are directly and indirectly related to agriculture. The programs are designed and broadcast for the development of the agriculture and the farming community. The farm programs are designed in such a way that if the farmers listen to the programs only for their entertainment, they will have some information related to agriculture and through this information they will be educated. Under the broad heading of using radio to teach, it includes acquisition of those more generalized cognitive skills that cut across many activities, most commonly literacy, and numeracy. Also important is teaching of work skills. For example, radio programs that teach mothers how to prepare more nutritious meals for their families, farmers how to plant a better crop of corn are important work

skills.[26] When the farmers are informed and educated, their confidence increases and they are motivated which lead them to the change of their mindset. When they get rid of prejudice, they are ready to accept the new agricultural technologies and improved farming methods and practices which results in the increase of production. The increase of farm knowledge, adoption of farm technologies and improved mindset are the ultimate effects of the farm programs that start from listening to the farm programs.

1.5 Literature Review

1.5.1 Studies in Bangladesh

Amin in his PhD dissertation in 2010 showed that among the all selected 56 individual issues included under 13 crops both radio and television perceived as most effective based on effectiveness index in case of land preparation, fertilizer application and irrigation of tea. In case of modern *boro* rice the information related to selection of its modern varieties, seed bed preparation and seed sowing and so on television program was more effective than that of radio. In case of wheat the information related to land preparation, fertilizer application and seed sowing television was more effective than radio. Thirteen crops were selected to study the effectiveness of information broadcast through radio and television. Radio was most effective in case of information related to winter vegetable cultivation while television was most effective in case of information related to jute. In case of fish, the information related to rice-fish culture was most effective in case of radio and television followed by preparation of pond, culture of high yielding variety of fish and so on. It was less effective in case of control of fish diseases/mouse. Television is better than radio in case of the effectiveness of the

[26] Dean T. Jamison and Emile G. McAnany, *Radio for Education and Development* (London: Sage Publication, 1978), pp. 18-19.

information disseminated to the farmers. In case of the information related to the control of *ranikhet* was most effective in case of radio and television followed by farm planning, integrated farming (duck cum fish, poultry cum fish), control of Foot and Mouth Disease (FMD) and so on. But television and radio information was less effective in case of control of bird flu. Here also television was more effective than radio.[27]

M. R. Islam in 2009 in his PhD dissertation reported that out of 15 selected communication media used by extension workers in transfer of technologies for rice production, discussion with farmers, discussion with colleagues and television ranked the first three positions respectively according to their communication media use index.[28]

Mst. Aklima Akhtar in her PhD dissertation in 2001 showed that the more people were exposed to media, the more they were intended to accept the modern agricultural technologies.[29]

M. Abul Kashem and M.S. Islam in a research in 2001 showed that more than half (59.3%) of the farmers had medium use of information sources compared to 34.8% low and only 5.9% high use of information sources. The research finding is also that 'family member' was the most frequently used information source. They also showed that among the mass media radio was ranked first in case of farmers' use for information source where television was ranked second. In overall rank order among all

[27] Md. Ruhul Amin, "Effectiveness of Radio and Television Programme in the Disseminating Agricultural Information as Perceived by the Farmers of Sadar Upazila under Sylhet District," (PhD dissertation, Agricultural Extension Laboratory Department of Agronomy and Agricultural Extension, University of Rajshahi, Bangladesh, 2010).

[28] M. R. Islam, "Use of Communication Media by the Extension Workers and Farmers in Transfer and Adoption of Rice Production Technologies," (PhD dissertation, Agriculture Extension Laboratory, Department of Agronomy and Agricultural Extension, University of Rajshahi, 2009).

[29] Mst. Aklima Akhtar, "Impact of Mass Media on the Rural Community Adopting Socio-Economic Development Strategies" (PhD dissertation, IBS, RU, Bangladesh, 2001).

the sources of information radio was ranked 7th, television was 10th and agricultural department was 14th.[30]

Andrew Alak Kumar Dewari wrote in his PhD dissertation in 1999 that radio and television programs had impact on the production of principal crops-rice, wheat and jute. He conducted survey on six villages of three divisions. He showed that 22.39%, 14.50%, 09.41%, 15.52%, 06.10% and 04.58% of the farmers knew about scientific cultivation, the use of chemical fertilizer, the use of pesticides, high yielding variety, modern irrigation and the increase of production respectively from the farm programs of radio and television.[31]

M. M. Rahman in 1996 conducted a study at Sherpur thana of Bangladesh and found that the vegetable growers received maximum information from neighbors, friends and relatives followed by radio farm programs and discussion with block supervisors (extension agents). He also found that income had moderate association with the use of different information media and participation.[32]

A.K.M. Ullah in 1996 in his thesis reported that the highest extension exposure of vegetables growers in Gazipur District was with block supervisors (67.70%) followed by radio (61.45%), neighbors (43.23%), friends and relatives (42.23%). The study also

[30] M. Abul Kashem and M.S. Islam, "Information Sources Used by Farmers Regarding the Use of Agro-Chemical," *Bangladesh Journal of Extension Education*, Vol. 13, No. 1&2, 2001, pp. 71-75.

[31] Andrew Alak Kumar Dewari, "Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh" (PhD dissertation, IBS, RU, Bangladesh).

[32] M. M. Rahman, "Factors Associated with Communication Behavior of Winter Vegetable Growers of Sherpur Thana Under Bogra District," (MSc Thesis, Department of Agricultural Extension Education, Institute of Postgraduate Studies in Agriculture, Gazipur, Bangladesh, 1996).

revealed that face to face contact was frequently used by the respondents followed by mass media and group sources.[33]

Center for Communication Programme, Social Marketing Company, Population Services International, John Hopkins University and United Nations International Children's Emergency Fund (UNICEF) jointly conducted a survey entitled "The Opportunity of Mass Media in Bangladesh: National Mass Media Survey 1995" where it was showed that in Bangladesh 45% of the people listened to radio programs and 39% of the people had radio-sets in town and 18 % had radio-sets in villages.[34]

M.A. Kashem, A. Halim and M. Zulfikar Rahman in a study in 1992 showed the positions of different communication media based on the farmers' media choice for farm information. In that article the researcher showed that radio stood fourth and television stood fifteenth in the adoption of rice technology. In case of livestock radio stood third and television stood eighth. In case of fish culture radio stood second and television stood eleventh.[35]

M. Khairul Kabir and Milan Kanti Bhattacharjee of Bangladesh Academy for Rural Development (BARD) in 1992-93 in their research "Impact of Radio and

[33] A.K.M. Ullah, "Information Media Used by Vegetables Growers in Kashimpur Union under Gazipur District," (MSc Thesis, Department of Agricultural Extension Education, Institute of Postgraduate Studies in Agriculture, Gazipur, Bangladesh, 1996).

[34] Daily Bhorerkagoj, Dhaka, 12th June, 1995, pp. 1, 8 (Cited in "Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh" (PhD dissertation, IBS, RU, Bangladesh).

[35] M. A. Kashem, A. Halim and Z. Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies- Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development,* Vol. II, No. 1, July, 1992, pp. 95-112.

Television Programs on Rural People: A Case Study of Three Villages" showed that listeners and audience of radio and television comprised less than 30%.[36]

Zahangir Kabir in 1990 showed in his PhD dissertation–"Effectiveness of Radio Farm Programmes in the Ruralities of Bangladesh" that 20% results of agricultural research were broadcast through the radio.[37]

1.5.2 Studies Abroad

Yusof et al. in 2012 in their study, "Agricultural Radio Talks and Drama: Malaysia Early Development Experience," reported that radio talks and drama had boost up the development of Malaysia in the early years after the defeat of Japanese invasion. Government development plan and strategy were inserted within the radio drama, talk or entertainments to gain peoples interest and collaboration. The government used the power of mass media to insert message of development through drama radio series, *Bangsawan* and talk show that significantly changed people perception, attitude and value by using a role model in the drama. Radio was used as an effective medium to instill a motivation, collaboration and development skills needed, as well government plan and agenda to the masses. All these aspects were carefully inserted through radio drama, talks and entertainments programs on radio. The history has proven that the steps taken had succeeded in making the country and the people a developed nation today.[38]

[36] M. Khairul Kabir and Milan Kanti Bhattacharjee, "Impact of Radio and Television Programmes on Rural People: A Case Study of Three Villages," BARD, Comilla, 1992-93.

[37] Zahangir Kabir, "Effectiveness of Radio Farm Programmes in the Ruralities of Bangladesh" (PhD Dissertation, University of Mysore, India).Cited in "Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh" (PhD dissertation, IBS, RU).

[38] Fadzilah Yusof, Faridah Ibrahim and Wan Amizah WM, "Agricultural Radio Talks and Drama: Malaysia Early Development Experience," *Journal Komunikasi: Malaysian Journal of Communication*, Vol. 28, No. 1, 2012, pp. 77-88.

A study on "Farmers' Media Use Pattern in Adamawa State, Nigeria" revealed that information on most of the agricultural practices were sought and found on radio. Marketing and fertilizer information was sought and found in interpersonal media (fellow farmers and extension agents) respectively. This study also revealed that farmers actually found agricultural information on agricultural practices in the media sources from which they sought them. More agricultural radio programs with local relevance should be broadcast on a regular basis as it would increase not only the knowledge base of farmers, but may as well lead to increased adoption and utilization.[39]

Hassan et al. in 2010 in their study revealed that mass media power in disseminating agriculture information to the farmers was essential. The farmers should be provided with the schedule of the date of the publications of the Department of Agriculture, Malaysia which are to be disseminated to the farmers, the air time of television and radio programs and the list of agriculture agencies website.[40]

Khan et al. in 2010 in their study reported that in the age of information technology revolution, extension can empower the farming community with latest knowledge through electronic media for the development of agricultural sector. Obviously, the physical distance and logistic problems are the major impediments in personal contacts between farmers and extension field staff (EFS). In this context, strengthening extension services with effective use of electronic media seems indispensable. Thus, the research was conducted to get the real picture of farmers' perceptions regarding present and prospective role of electronic media in the

[39] Umar Adamu Madu, Mahmood .H. Umar and Muhammad Khalique, "Farmers' Media Use Pattern in Adamawa State, Nigeria," *International Journal of Academic Research in Business and Social Sciences*, Vol. 2, No. 1, January, 2012, pp. 167 &173.

[40] Md. Salleh Hassan et al. "Agriculture agency, mass media and farmers: A combination for creating knowledgeable agriculture community," *African Journal of Agricultural Research*, Vol. 5, No. 24, 18 December 2010, pp. 3500-3513.

dissemination of agricultural information among farmers. The research was conducted in Faisalabad district of the Punjab province, Pakistan. Electronic media included radio, TV, audio/video cassettes/compact disks (CDs), internet, telephone, agricultural help line, and mobile phone. The awareness regarding agricultural broadcasts and contacts was poor. Similarly, the use of electronic media as agricultural information sources was not substantial. The data regarding the awareness about various aspects of electronic media in the context of agricultural information dissemination among farmers were obtained, which revealed that awareness about agricultural radio broadcasts, advertisements pertinent to agriculture were at the top which were known to about 1/5th of the respondents followed by short messages which were known to about 13% and Sandhal dharti (farm program), which was reported by only 10% respondents. Other agricultural radio broadcasts presented the awareness in fraction. Concerning agricultural TV telecasts, there was a similar scenario in the context of advertisement and short messages but with greater percentages i.e. 54.24% and 27.88% respectively. The awareness regarding agricultural TV programmes 'Kisan time' and 'Haryali' was almost similar. 'Khait Punjab day' and 'Apna kisan apni zarait' appeared to be the subsequent programmes as far as awareness was concerned. Only 7% of the respondents were aware of the availability of agricultural information through audio/video cassettes/CDs. However, the awareness about the exact location of getting audio and video cassettes/CDs copied for agricultural information i.e., Directorate of Agricultural information, Lahore, Punjab was almost nil. None of the respondents was found aware of agricultural web sites and agricultural e-mail. Only a fraction (3.64% and 2.73%) of the respondents was found aware of agriculture related private and Govt. telephone numbers. However, the future preferences for getting agricultural information from the

electronic media showed some improving trend in each case as compared to the present use of electronic media.[41]

Hassan et al. in 2010 in their study showed that Majority of Malaysian could afford to own their own mass media such as TV, radio and internet. The number of available TV channels, radio channels and newspapers either free of paid were encouraging. There were three TV agriculture programs and five agriculture radio programs aired on local radio stations, one program was aired on Klasik National FM and the other four programs were aired on four different states FM. There were two daily newspapers that provided agricultural information to their readers. Besides, mobile web system was a wise step for information dissemination and information sharing. The study also suggested that the number of programs and spaces produced and provided could be doubled hence it was recommended that local giant agriculture based companies could play their role in providing more fund and sponsorship in producing more agricultural programs for the farmers.[42]

Ahmed et al. in 2007 in their study showed that agricultural extension services and electronic media played an important role in the adoption of new agricultural technologies. Extension worker was an important link between research organizations and farmers. Field surveys revealed that unfortunately the services of extension workers were not very impressive. Majority (85%) of the farmers were unaware of the services of the extension workers. Almost 88% of the farmers did not get any benefit from extension workers as against only 12% farmers who got some benefits like technical advice (8.75%), demonstration (3.75%), and equipment (10%). Majority (82.5%) of the

[41] Ghazanfar Ali Khan et al. "Present Status and Future Preferences of Electronic Media as Agricultural Information Sources by the Farmers," *Pak. J. Agricultural Sci.* Vol. 47, No. 2, 2010, pp. 166-172.

[42] Md. Salleh Hassan et al. "Agriculture Communication in Malaysia: The Current Situation," *American Journal of Agricultural and Biological Sciences,* Vol. 5, No. 3, 2010, pp. 389-396.

farmers did not visit the local Agriculture Extension office and only 12.5% of the farmers reported visits of extension workers to their fields, majority of which were big and influential farmers. Only 5% farmers were visited once a year, 8.75% at monthly and 3.75% at weakly basis. Radio and TV were expected to play an important role in the process of technology transfer. Radio sets were owned by 83.75% of the sampled farmers who listened to the agricultural programs and TV sets were owned by 82.75% of the sampled farmers and were benefited from its programs. Out of the total respondents who listened to radio or watched TV, 73.75% got new information about different agricultural problems and know the daily prices of agriculture commodities. For illiterate farmers radio was the only source of information about market prices as it was easy for them to know actual prices in the local or national market.[43]

Irfan et al. in 2006 in their study in Pakistan showed that all the respondents regarded fellow farmers and pesticide agencies as their major sources of agricultural information followed by TV (64.2%) and extension field staff (51.7%). Among the mass media, the respondents ranked TV, radio and print media 1st, 2nd and 3rd, respectively with regard to effectiveness. A vast majority of the respondents did not listen/watch agricultural radio/TV broadcasts regularly or occasionally.[44]

Fadiji in 2005 in his study revealed that the respondents were used to source, on moderate level, information on technologies and recommendation on improved maize from radio. It also revealed that the majority of the farmers (50%) had access to radio

[43] Mansoor Ahmad et al. "Interaction of Extension Worker with Farmers and Role of Radio and Television as Sources of Information in Technology Transfer: A Case Study of Four Villages of District Peshawar and Charsadda," *Sarad J. Agric.* Vol. 23, No. 2, 2007, pp. 515-518.

[44] Muhammad Irfan et al. "Role of Mass Media in the Dissemination of Agricultural Technologies among Farmers," *International Journal of Agriculture & Biology,* Vol. 8, No. 3, 2006, p. 419.

daily, 48.33% weekly and the majority of the respondents ranked first in frequently listening to radio programs with extension messages in their vernacular.[45]

Abbas et al. in 2005 in their study reported that agricultural extension, which is essentially a message delivery system, had a major role to play in agricultural development. The electronic media had a central role in facilitating the exposure of farmers to the latest information. Extension services and use of electronic media were found to be the most reliable sources for getting information regarding technologies.[46]

Chapman et al. in 2003 in their study reported that rural radio could be used to improve the sharing of agricultural information by remote rural farming communities. Participatory communication techniques could support agricultural extension efforts especially using local languages and rural radio to communicate directly with farmers and listeners' groups. A format that combined a drama performed by local actors with corresponding thematic discussions was popular amongst farmers listening to agricultural extension radio programs. Targeted audience research could help determine program contents, broadcast schedules and the preferences of listeners regarding the mix of information and education in the format.[47]

Muhammad, Ashraf and Siddiqui conducted a study in 2002 to find out the effectiveness of communication methods/media used by Novartis Company in Arifwala

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[45] T.O. Fadiji, "Effectiveness of Radio in Dissemination of Agricultural Information to Farmers in Rural Settings of Nigeria," *Global Journal of Social Sciences,* Vol. 4, No. 1 and 2, August, 2005, pp. 33-36.

[46] Mazher Abbas et al. "Role of Electronic Media in the Adoption of Agricultural Technologies by Farmers in the Central Punjab-Pakistan," *International Journal of Agriculture & Biology,* Vol. 5, No. 1, 2005, pp. 22-25.

[47] Robert Chapman et al. "Rural Radio in Agricultural Extension: The Example of Vernacular Radio Programs on Soil and Water Conservation in N. Ghana," *Agricultural Research and Extension Network,* 2003. http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja &ved=0CCwQFjAA&url=http%3A%2F%2Fwww.odi.org.uk%2Fagren%2Fpapers%2Fagrenpaper_127.pdf &ei=4qBHUtrEBMHXrQf1uYCwBw&usg=AFQjCNEY5IrFHHxcNNfCTk98OI9kO14G9w&bvm=bv.53217764,d.bmk. Accessed on 10 September 2013.

Tehsil of Pakpattan. The research indicated that all the respondents were aware of the Novartis Company. It might imply that the Novartis pesticide company was popular among farmers of the area. All the respondents were found to be using pesticides of Novartis in addition to the products of other companies. Neighbors/friends/relatives appeared to be the major sources through which the respondents became aware of Novartis Company as reported by a vast majority (89.16%) of the respondents. This might imply that fellow farmers were playing very important role in informing each other about Novartis Company. Agricultural campaigns appeared to be the most effective communication method followed by literature, lecture meetings, exhibitions, method demonstrations, result demonstrations and movies. Farm and home visits, discussion meetings, signboards, radio and TV were relatively less effective methods/media.[48]

Mohammed Kuta Yahaya and Olabode Idris Badiru, in 2002 in their study revealed that farmers did receive the programs on their radio and TV, and they perceived that both of the programs had substantial value in terms of relevant agricultural information.[49]

Sher Muhammad and Chris Garforth in 1999 in a study showed that greater exposure of farmers to information sources was a sign of interest taken by them in farming. Very low contact with information sources resulted in poor technology transfer among the potential users. Farmers who were exposed to many and varied sources of information were more likely to be better adopters. It could also reflect the interest taken

[48] S. Muhammad, I. Ashraf and B. N. Siddiqui, "Effectiveness of Different Communication Methods/Media Used By Novartis Pesticide Company in Tehsil Arifwala," *International Journal of Agriculture & Biology*, Vol. 4, No. 3, 2002, pp. 335-337.

[49] Mohammed Kuta Yahaya and Olabode Idris Badiru, "Measuring the Impact on Farmers of Agricultural Radio and Television Programs in Southwest Nigeria," *Journal of Applied Communication*, Vol. 86, No. 3, 2002, p. 34.

by the extension field staff in motivating farmers to use as many information sources as they can. Large neighbors, friends and relatives appeared to be the major sources of information followed by radio as the second major source. The major mode of information flow from farmer to farmer appeared to be through observation rather than through dialogue. The contribution of contact farmers as information source for their fellow contact farmers and non-contact farmers had been found highly disappointing. Field Assistants' role as information source also appeared to be far behind their expected role. The same was true in case of Agriculture Officers, which implied that the interaction between farmers and extension field staff were negligible.[50]

M.M. Escalada et al. in 1999 showed in their research that the rich farmers use unnecessary insecticide due to misconception. They organized a mass media campaign in order to inspire the farmers to test a conflict information expressed as a heuristic. After the campaign, insecticide use dropped from 3.35 sprays per farmer to 1.56. Proportions of farmers spraying at the early and late tillering and booting stages decreased from 59%, 84% and 85% to 0.2%, 19% and 30%, respectively. Leaf folder control perceptions, expressed as the belief index, changed from 11.25 to 7.62. Proportions of farmers believing that leaf folders could cause damages, yield loss and needed sprays, dropped from 66%, 70% and 77% to 24%, 25% and 23%, respectively. The study showed that mass media could effectively transfer some elements of knowledge-intensive pest management, especially simple non-site specific information designed to motivate.[51]

[50] Sher Muhammad and Chris Garforth, "Farmers' Information Sources and Their Relative Effectiveness," *International Journal of Agriculture and Biology*, Vol. 1, No. 4, 1999, pp. 222-226.

[51] M. M. Escalada et al. "Communication and Behavior Change in Rice Farmers' Pest Management: The Case of Using Mass Media in Vietnam," *Journal of Applied Communication*, Vol. 83, No. 1, 1999, pp. 7-26.

In a study in 1984 Behrens and Evans showed that mass media methods such as radio, newspapers, magazines, TV, motion pictures, slide show, exhibits and printed materials were particularly useful in making large number of rural people aware of new ideas and practices. While the amount of detailed information that could be transmitted by mass media was limited, they could serve an important and valuable function in stimulating farmers' interest in new ideas. They said that once stimulated or made aware through mass media, farmers would seek additional information from neighbors, extension workers or progressive farmers of the area.[52]

1.6 Research Gap

From the literature review it is recognized that most of the research works are very old. The perspective of that time is not same to that of today. Most of the research works in Bangladesh were conducted at the time when there was hardly any electronic mass media alternative to Bangladesh Betar and BTV. Besides, in almost all the cases either fisheries, poultry, forestry, dairy farms were out of research or mentioned with very less attention. So far as my knowledge goes the effectiveness of only the farm programs of Bangladesh Betar and at the same time the impact of a government regulated mass media like Bangladesh Betar on mass people of a developing democratic country like Bangladesh where many private mass media enjoy freedom in operation to some extent were not explored in any research work. There were some research works conducted abroad which to some extent resemble this research-"Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study". But the contexts of those countries where the researches were done differ from that of Bangladesh.

[52] J. H. Behrens and J. F. Evans, "Using Mass-media for Extension Teaching," *Agricultural Extension Manual*, FAO: Rome, 1984, pp. 144-155.

In most of the cases, effectiveness of mass media is confined to whether the information reaches the farmers or not; the motivation of the farmers, impact on farm practices, farm education or knowledge, mindset of the farmers and so on were beyond the research works. Even, nowhere there was any assessment of need of radio farm programs. In this research all these are incorporated.

1.7 Scope and Limitation

The research findings of this study will enable the policy makers of Bangladesh Betar to draw inference about the consequences of the farm programs of Bangladesh Betar. Besides, this study will help other departments related to the agriculture of Bangladesh to take decision on how to use Bangladesh Betar for the diffusion of agricultural technologies and for motivating the farmers to adopt scientific practices in farming. But the limitation of this research is that the forest sector, one of the most vital sectors of agriculture, has been excluded from this study considering the time constraint, money and other necessary resources available to the researcher.

1.8 Research Methodologies

The proposed study encompasses four core issues i.e., information, farm knowledge, farm practices and access to the farm programs of Bangladesh Betar. It is predominately qualitative in nature. Required data have been collected from both primary and secondary sources. For primary data collection the following three methods have been used:

a. **Document Analysis**: Here content analysis technique has been used and documents of Bangladesh Betar and other relevant organizations have been analyzed.
b. **Survey method**: In this method questionnaire survey technique has been used.
c. **Key Informant Interview (KII)**: In this method face to face interviews and telephonic interviews have been conducted based on fixed checklist.

1.8.1 Sampling

There are twelve regional radio stations of Bangladesh Betar. All the agricultural programs centrally broadcast and relayed by the regional stations are the same. There are a few programs developed and broadcast by the regional stations based on the needs of the particular regions; but formats and contents of the programs which are prescribed and approved by the head quarter are almost same for all the stations. This is why, a single regional station can represent the whole of Bangladesh Betar. So, here the researcher has purposively selected Bangladesh Betar, Khulna and Bangladesh Betar, Rajshahi because Khulna Betar is one of the biggest radio stations of Bangladesh Betar covering the total of the south-west of Bangladesh and almost the half of Bangladesh and Rajshahi Betar is also one of the biggest radio stations that covers almost all of the northern part of Bangladesh.

In Khulna and Rajshahi districts there are eighteen upazilas (nine for each). In case of sampling, the researcher has used **multistage stratification sampling** technique.

1st stage: The researcher has selected eight upazilas out of eighteen (four from each district) of Khulna and Rajshahi districts.

2nd stage: Eight unions have been selected from eight upazilas (one from each upazila).

3rd stage: sixteen villages (two from each union) have been selected.

4th stage: At the fourth stage the farmers (respondents) have been selected by means of **random sampling technique** from each village and the total sample size is determined using the following formula**:**

$$n = \frac{Z^2 p(1-p)}{\in^2} = \frac{Z^2\, pq}{\in^2},$$

assuming that $p = 0.5$ and $q = 0.5$.

Here:

n = Sample size,

Z = Tabulated value

= 1.96 (For large sample at 5% level of significance),

p = Proportion of success,

$q = 1 - p$ = Proportion of failure,

$\in$ = Margin of error

= 0.05.

Based on this formula the researcher is supposed to select 384 respondents from the two districts with 95% confidence level and 05% margin of error. But for the betterment of the research the researcher has taken 465 respondents from the two regions.

1.8.1.1 Sampling for Questionnaire Survey

In Khulna district there are around 2,64,525 crop farmers (District Agriculture Office, Khulna, 2014), 24,571 fish farmers (District Fisheries Office, Khulna, 2014) and 6,363 livestock farmers (District Livestock Office, Khulna, 2014) on the other hand, in Rajshahi district there are around 4,33,302 crop farmers (District Agriculture Office, Rajshahi, 2014), 10,000 fish farmers (District Fisheries Office, Rajshahi, 2014) and 7,000 livestock farmers (District Livestock Office, Rajshahi, 2014).

In the crop sector Rajshahi has farmers twice the number in Khulna; on the other hand in the fisheries sector Khulna has farmers almost twice the number in Rajshahi. In the livestock sector the number of farmers is almost same in both of the districts. The respondents have been selected proportionately in the following ways:

Table 1.1 Sampling ratios

Sectors	Ratio	Sample (*n*)
	Khulna : Rajshahi	193 : 272
Crop	1 : 2	81 : 191
Livestock	1 : 1	33 : 42
Fisheries	2 : 1	79 : 39
Total		465

1.8.1.1.1 Region-wise Distribution of Respondents

1.8.1.1.1.1 Khulna Region

Table1.2 Distribution of respondents from all sectors in Khulna District

Upazilas	Unions	Villages	Crop sector	Livestock sector	Fisheries sector	Total Sample (*n*)
Dumuria	Gutudia	Gutudia	10	4	10	24
		Kamalpur	11	5	10	26
Botiaghata	Jalma	Chakrakhali	10	4	10	24
		Tentultala	10	3	10	23
Rupsa	Aijganti	Shirgati	10	5	9	24
		Durjani Mahal	10	4	11	26
Dighalia	Dighalia	Panigati	10	4	9	23
		Brahmaganti	10	4	10	24
Total sample (*n*)			81	33	79	193

1.8.1.1.1.2 Rajshahi Region

Table1.3 Distribution of respondents from all sectors in Rajshahi District

Upazilas	Unions	Villages	Crop sector	Livestock sector	Fisheries sector	Total Sample (*n*)
Baghmara	Ganipur	Mohongang	24	7	6	37
		Chanderara	25	4	5	34
Puthia	Belpukuria	Dhadash	21	6	6	33
		Zamira	26	6	5	37
Godagari	Deopara	Rajabari	24	4	6	34
		Eidolpur	20	4	5	29
Bagha	Monigram	Mohdipur	26	5	2	33
		Vanukar	25	6	4	35
Total sample (*n*)			191	42	39	272

1.8.1.2 Sampling for Key Informant Interview (KII)

For key information 28 key informants have been selected from four departments under the Ministry of Agriculture, Ministry of Fisheries and Livestock and Ministry of Information. In case of selecting the experts the following two criteria have been considered:

i. Field-level working experience and

ii. Involvement in broadcasting the farm programs.

Sector-wise allocation of experts:

Table1.4 Distribution of experts from four departments

Regions	Agriculture	Livestock	Fisheries	Bangladesh Betar	Total sample (*n*)
Dhaka	2	3	3	1	9
Khulna	2	3	3	1	9
Rajshahi	4	3	2	1	10
Total sample (*n*)	8	9	8	3	28

1.8.2 Primary Data Collection

By means of survey method, 465 farmers have been surveyed to know about whether they listen to the farm programs of Bangladesh Betar and other information relevant to the research objectives. Fields have been surveyed from June, 2014 to September, 2014.

1.8.3 Secondary Data Collection

Secondary data have been collected by means of content analysis of the documents collected from Bangladesh Betar and other relevant organizations (Ministry of Agriculture, Ministry of Fisheries and Livestock, Websites and so on.).

1.8.4 Data Analysis

The collected data have been arranged and scrutinized cautiously in accordance with demonstrable indicators of the objectives. The processing steps are: editing, coding and classification. Descriptive analysis (Frequency distributions, proportional analysis for significance test) has been done for estimating the required parameters.

In addition**,** logistic regression has been done to measure the intensity of the explanatory variables on explained variables. 'Listening to farm program' is the independent variable and variables like 'knowledge', 'practice' are the dependent variables. Out of 465 respondents those who do not listen to the farm programs are of control group and the rest are of experimental group.

1.8.5 Methods Used in the Chapters

1.8.5.1 Chapter Two

In the second chapter, the following three methods have been used:

a. **Document analysis:** Programs related documents from Bangladesh Betar, department of Agriculture, Fisheries and Livestock have been analyzed.
b. **KII:** For program related opinions 28 experts from Bangladesh Betar, Department of Agriculture, Fisheries and Livestock have been interviewed.

c. **Survey method:** To know the need of farm programs 465 farmers have been surveyed. For existing program related opinions 31 farmers out of 465 farmers who listen to the farm programs have been interviewed. For data analysis frequency distribution has been done. Statistical Package for Social Science (SPSS) software version 17 has been used for data analysis.

1.8.5.2 Chapter Three

In the third chapter, the survey method has been used and here the data collected from the questionnaire survey of 465 farmers from the three sectors have been used. Here listening to the farm programs of Bangladesh Betar is the dependent variable and other factors like area, knowledge, education, farm training, transmission system, ownership of radio, mindset of the farmers have been considered as independent variables. For data analysis frequency distribution and *z*-test for significance test of proportions have been done. SPSS software version 17 and STATISTICA 8 have been used for data analysis.

1.8.5.3 Chapter Four

In the fourth chapter, knowledge of the farmers has been considered as dependent variable; on the other hand, listening to the farm programs of Bangladesh Betar has been considered as independent variable. Here data have been analyzed in the following three phases:

a. Listeners versus non-listeners: Here 434 non-listeners and 31 listeners have been considered as two groups and compared through hypothesis test.
b. Farmers who takes information from all the sources of farm information except the farm programs of Bangladesh Betar belong to one group named non-listener group and 31 listeners of farm programs belong to another group

named listener group. Here 84 non-listeners and 31 listeners have been considered as two groups and compared through hypothesis test.

c. At the third phase farmers who have farm training but do not listen to the farm programs belong to one group and another group consists of farmers who have farm training and listen to the farm programs.

For data analysis frequency distribution, significance test of proportions by means of *z*-test and binary logistic regression analysis have been done.

1.8.5.4 Chapter Five

In the fifth chapter, data collected from questionnaire survey of 465 respondents have been used. Here listening to the farm programs is the independent variable and different scientific practices in agricultural sectors are the dependent variables.

For data analysis frequency distribution, significance test of proportions by means of *z*-test and binary logistic regression analysis have been done.

1.9 Organization of the Study

The dissertation has been arranged in the light of the research objectives in six chapters with a view to make it easy to grasp. From introduction to the conclusion a chronological advancement has been made to ensure a meaningful and comprehensible presentation.

In **Chapter One** introduction, problem statements, research questions, research objectives, conceptual framework, literature review, research gap, scope and limitation, research methodology and sampling techniques have been discussed.

In **Chapter Two** historical background of Bangladesh Betar, an assessment of the need of the farm programs of Bangladesh Betar, the present state of the farm

programs of Bangladesh Betar and an analysis of the programs based on the experts' and farmers' opinions on different issues of the farm programs have been discussed.

In **Chapter Three** farm programs listening habit of the farmers, different variables that influence the listening habit of the farmers and comparison among the sectors of agriculture and between the study areas (Rajshahi and Khulna) have been expounded.

In **Chapter Four** a comparative study has been done in light of the farm knowledge of the farmers who listen to the farm programs and the farmers who do not listen to the farm programs from different dimensions.

In **Chapter Five** a comparative study has been done in light of adoption of farm technologies by the farmers who listen to the farm programs and the farmers who do not listen to the farm programs.

In **Chapter Six** summary of the findings, recommendations for further research, conclusion of the study and last of all recommendations for concerned authorities have been discussed.

CHAPTER TWO

BANGLADESH BETAR AND ITS FARM PROGRAMS: ANALYTICAL PERSPECTIVE

2 Introduction

Bangladesh Betar is an important and very powerful electronic mass-media of Bangladesh. It played a very praiseworthy role during the great liberation war in 1971. In 1971 during the liberation war Bangladesh Betar was a historic driving force for the freedom fighters. From the perspective of Bangladesh, Bangladesh Betar is the only media that can reach everywhere from solitary villages to the impassable hill tracts and from deep forest to deep sea. This traditional institution has been serving the country and the whole nation through developing and broadcasting decent and standard programs for information, education, entertainment and development. It is indisputable that the development of Bangladesh depends on the development of its agriculture to the greatest extent. There is no alternative to being self-dependent on food production to ensure food security for the whole nation. Bangladesh Betar from its very beginning has been developing and broadcasting programs for the development of the agriculture of the country. This chapter is designed and written to make a need assessment of farm programs of Bangladesh Betar; to see the types of farm programs, how the programs are developed, how they are cast for the betterment of the agriculture and the farming communities and whether the programs meet the needs of the farmers. Bangladesh Betar deserves some competitive advantages. How these advantages are utilized for the development of the agriculture is also a matter of importance for this chapter.

Here firstly the historical background of Bangladesh Betar and its farm program has been discussed to know its experience in developing and broadcasting programs. Then the programs and the content of the programs are discussed to see how they match the necessities of agriculture and the farming communities for their development.

2.1 Historical Background of Bangladesh Betar

The history of Bangladesh Betar is directly linked with the history of radio broadcast that started in India with the launch of a private radio service in Chennai, India by Madras Presidency Club Radio in 1924 and continued till 1927.[53] In the same year the Indian Broadcasting Company was licensed to set up radio stations in Mumbai and Kolkata, India. The company was charged of bankruptcy in 1930. Then the government took possession of the transmitters and started its operations as the Indian State Broadcasting Corporation in 1932.[54] The Indian State Broadcasting Corporation was renamed as *All India Radio* on June 8, 1936.[55]

After broadcasting for few years *All India Radio* extended its regional station at Dhaka in former East Bengal on December 16, 1939. It started broadcasting on December 16, 1939 as *All India Radio* at Nazimuddin Road, old part of present Dhaka City. The *All India Radio* changed into *Radio Pakistan* with the independence of Pakistan on August 14, 1947. Later on, in 1960 the radio station was shifted to Shahbag, Dhaka at its own house.[56]

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[53]Esay on the Brief History of Radio Broadcasting in India, http://www.preservearticles.com/2011112417838/esay-on-the-brief-history-of-radio-broadcasting-in-india.html, Accessed on 5th December 2013.

[54] Ibid.

[55]Indian Radio, http://www.indianetzone.com/39/indian_radio.htm, Accessed on 4th December 2013.

[56] Ashfakur Rahman Khan, "Remembrance of a Radio Broadcaster of Ayub Regime," *Anuranan*, Vol. 2, March 2012, p. 36.

Being inspired by the instruction of Bangabandhu Shekh Muzibur Rahman in his 7th March Speech- "The employees of the Radio and TV, please bear in mind that if our words are not broadcast by the radio then Bangalee shall not go to the Radio Station"[57] the Chittagong Radio Station was closed immediately after the opening announcement of the order of Tikka Khan in the provincial hook up program and ten employees of Chittagong Radio Station headed by staff artist Belal Mohammad went to Kalurghat Transmitter Centre, Chittagong on March 26, 1971 and started broadcasting with the declaration of independence of Bangladesh from 10 Kilowatt transmitter and it was named as *Shwadhin Bangla Biplobi Betar Kendro* (Independent Bengal Revolutionary Radio Station) which continued up to March 27, 1971. Having been ordered by Major Ziaur Rahman (revolted Bengali officer of Pakistan Army) the word *'Biplobi'* was erased from the name and the radio station was renamed as *Shwadhin Bangla Betar Kendro* (Independent Bengal Radio Station).[58]

On March 30, 1971 the Pakistani Army bombed on the *Shwadhin Bangla Betar Kendro* at Kalurghat in Chittagong. It was the first Pakistani air attack on Bangladesh. Then Belal Mohammad with his team went to the free bordering zone at Ramgor in Hilly Chittagong dismantling a 01 kilowatt transmitter. They restarted broadcasting on April 3, 1971 that continued up to May 25, 1971.

Shwadhin Bangla Betar Kendro was shifted to Kolkata on March 25, 1971 at House No. 57/8, Circular Road, Baliganj, Kolkata. Here *Shwadhin Bangla Betar Kendro* started broadcasting through a 50 Kilowatt transmitter received from Indian government managed by Muzibnagar Government. It continued transmission up to January 2, 1972.

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[57] Banga Bandhu Shekh Muzibur Rahman, "The historic speech of the 7th March," Lecture, Ramna Race Course Maidan, renamed as Sohrawardi Uddan, March 7, 1971.

[58] Belal Mohammad, *Shwadhin Bangla Betar Kendro* (Dhaka: Anupam Prakashani, 2003), pp. 26-241.

The Indian Government officially recognized Bangladesh during the liberation war on December 6, 1971. And from that very day (December 6, 1971) *Shwadhin Bangla Betar Kendro* was renamed as *Bangladesh Betar*.[59] Radio Pakistan, Dhaka was named as *Bangladesh Betar, Dhaka* and started anew on December 22, 1971 broadcasting the commentary program of the returning of the members of the Muzibnagar Government from Kolkata. But the 50 Kilowatt Transmitter continued its broadcasting up to January 2, 1972 as *Bangladesh Betar, Muzibnagar*.[60] After the assassination of Bangabandhu Shekh Muzibur Rahman on August 15, 1975 a small rebel force occupied the radio station at Dhaka and announced the killing of Sheikh Muzib.[61] In that announcement in place of Bangladesh Betar it was told Radio Bangladesh. From that point of time *Bangladsh Betar* was renamed as *Radio Bangladesh*.[62] There was an office order on July 4, 1996 to change the name of *Radio Bangladesh* as *Bangladesh Betar*.[63] And till now it is *Bangladesh Betar*.

2.1.1 Bangladesh Betar, Rajshahi

With a view to entertaining the people of the southern and northern parts of Bangladesh and for the development of arts and literature of these parts the former Pakistany Government established a 01 kilowatt transmitter at the Anchar Kamp of Kajla in the south-east part of Rajshahi City in 1954. It was dismantled to Kajla Kuthi in 1956. Then a 10 Kilowatt transmitter was established at Motihar in Rajshahi on July 20, 1962. And this transmitter started broadcasting national and international programs on March 1,

[59] Ibid., p. 173.
[60] Ibid., p. 174.
[61] Moniruzzaman Talukder, "Bangladesh in 1975: The Fall of Mujib Regime and Its Aftermath," *Asian Survey*, Vol. 16, No. 2, February, 1976, P. 122.
[62] Interview with Md. Salah Uddin, (Editor and member of 09th Batch of Information Cadre of Bangladesh Civil Service, *Betar Bangla*, Bangladesh Betar, interviewed by the researcher, Dhaka, 12th December 2013.
[63] File No. Re Ba (DG/13/96-268), Head office, Bangladesh Betar, Dhaka, Bangladesh.

1963 through a very colorful inaugural ceremony. From May 1963, this station started relaying the programs of Dhaka Station. Then on November 16, 1964 a modern radio centre with seven studios and three booths was established at Kazihata in the southern part of Rajshahi City. After the independence of Bangladesh the importance of Rajshahi Betar increased to a great extent which resulted in the establishment of a 100 Kilowatt transmitter at Bogra and on July 30, 1990 the transmission started.[64] Now the programs of Bangladesh Betar, Rajshahi are broadcast by means of a 10 Kilowatt and a 100 Kilowatt transmitter.

2.1.2 Bangladesh Betar, Khulna

Bangladesh Betar, Khulna was established on December 4, 1970. At first a 10 Kilowatt transmitter was established at Gollamari in Khulna. The Pakistani Army destroyed the station on December 16, 1971. After liberation war, a 01 Kilowatt transmitter was taken from Bangladesh Betar, Rongpur and Bangladesh Betar, Khulna started anew. Then a new building for Khulna Radio was inaugurated at Boira, Khulna on July 1, 1979. A 100 Kilowatt transmitter was installed on April 28, 1981.

2.2 An Assessment of Need of Farm Programs of Bangladesh Betar

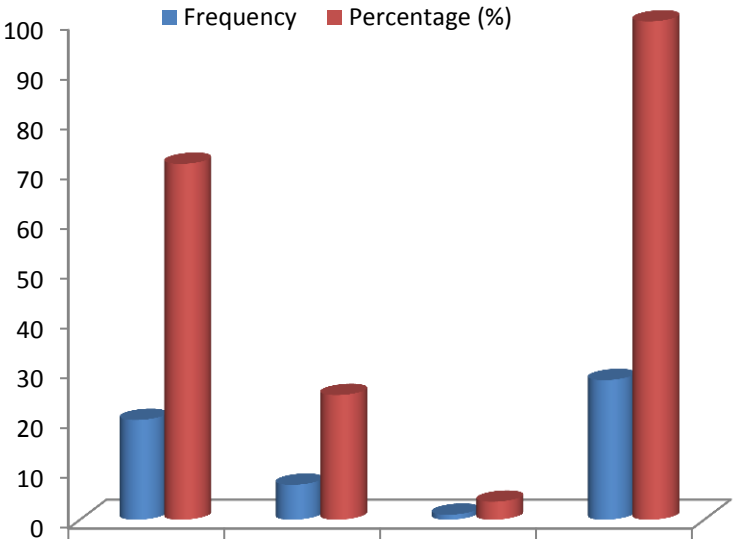
Agricultural production can be increased if appropriate technologies are used by the farmers who are the primary unit of adoption of improved practices. Diffusion of proper knowledge on modern farming among the rural people needs effective communication system. Bangladesh Betar can serve this purpose as research finding indicates that radio was ranked first among the mass media used for obtaining information about agro-

[64] *The Daily Shonar Desh* (Rajshahi, Bangladesh), 20 July 2012, p. 4.

chemical use.[65] With a view to knowing whether there is any need of farm programs of Bangladesh Betar in the present socio-economic condition of Bangladesh, KII and a questionnaire survey have been conducted by the researcher.

2.2.1 Experts' Opinion on the Need of Farm Programs

During KII 28 experts of different relevant departments (Agriculture, Livestock, Fisheries, and Bangladesh Betar) were asked to express their opinions on the need of farm programs of Bangladesh Betar. The results are as follows:



	It is a must	It is necessary	No need of Farm Programs	Total
Frequency	20	7	1	28
Percentage (%)	71.4	25	3.6	100

Figure 2.1: Distribution of the experts' opinions on the need of farm programs of BB

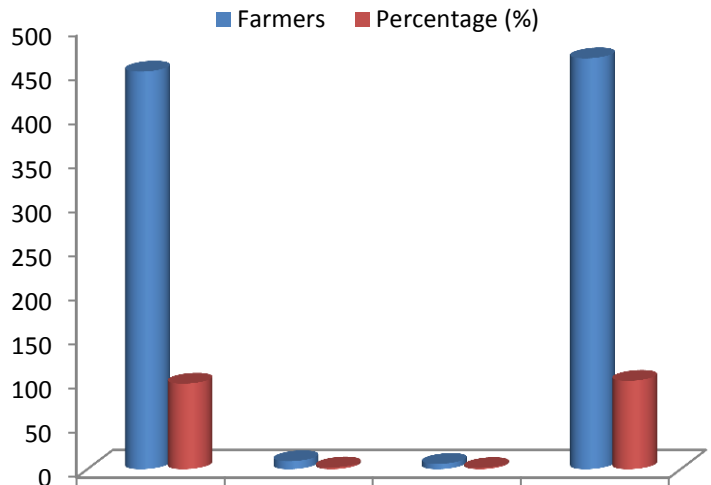
In the figure it is seen that 71.40% of the experts think that there must be farm programs broadcast from Bangladesh Betar. "The farm program of Bangladesh Betar is very important though people say that none listens to the farm programs. I believe that

[65] M. Abul Kashem and M. S. Islam, "Iformation Sources Used by Farmers Regarding the Use of Agro-Chemical," *Bangladesh Journal of Extension Education*, Vol. 13, No. 1& 2, 2011, p. 74.

many farmers listen to the farm programs. Especially, there is much more acceptability of the national radio."[66]

2.2.2 Farmers' Opinion on the Need of Farm Programs

With the intention of assessing the need of the farm programs, 465 farmers from Rajshahi and Khulna regions have been surveyed. They have been interviewed to know whether- (i) they need any farm program where the experts will discuss on different issues on farming, and (ii) which media they chose for the farm programs to be broadcast. The results of the survey are as follows:



	Need farm programs	Do not need farm programs	No comment	Total
Farmers	450	9	6	465
Percentage (%)	96.8	1.9	1.3	100

Figure 2.2: Distribution of the farmers' need of farm programs

In the survey it is seen that almost all the farmers (96.8%) want farm programs by means of which they will be able to know about different farm technologies and so on. They want programs where experts will answer to their different questions and

[66] Interview with Krisnonondo, (Assistant Director, Department of Fisheries, Dhaka), interviewed by the researcher, Dhaka, 8th March 2014.

provide solutions for the problems faced by the farmers in their farms. But which media do they chose for the programs? The answers are as follows:

Table 2.1 Distribution of the farmers' media choice

Variables	Number of Farmers (*n*)	Percentage (%)
Radio	93	20.00
Television	109	23.44
Fields/Villages	136	29.24
Radio and Television	101	21.72
Television and Fields/Villages	2	0.40
Radio, Television and Fields/Villages	13	2.80
No comment	11	2.40
Total	465	100

In the survey it is seen that 29.24% of the farmers want the programs in their villages. But it is very expensive and time consuming. On the other hand 20% of the farmers prefer radio and another 21.72% of the farmers prefer radio along with TV. That means 41.72% farmers prefer radio (Bangladesh Betar).

As, according to the experts, there is a dire need of farm programs of Bangladesh Betar and as most of the farmers need farm programs on radio, the farm programs of Bangladesh Betar are to be analyzed to examine the perfection of the program in order to analyze the effectiveness of the programs.

2.3 Farm Programs of Bangladesh Betar

The Dhaka Station of *All India Radio* was the only electronic media in former West Bengal during 1939. At that time all the public and private publicities were done through this radio. Initially entertainment was the most emphasized sector of broadcasting. Then the radio programs started expanding and programs like 'talk*'* and 'discussion' were introduced. At the end of December 1939, a program plan was taken and accordingly a program was developed for all sorts of listeners of radio. The program was named *Gramer Katha* (Village Talk). This program continued up to 1957. After

1957 as the political situation of Pakistan changed, the program (*Gramer Katha*) also changed. After being the President of Pakistan in 1958, General Ayub Khan introduced new political system- *Buniyadi Ganatantra* (Basic Democracy). To make this political system familiar and attractive to the village people radio started broadcasting program on Basic Democracy. In that circumstance *Gramer Katha* was changed to *Buniyadi Ganatantrer Asor* (Stage for Basic Democracy). This program was fully designed for the farmers of East Pakistan in 1966. Then it was renamed *Khete Khamare*.

After independence Bangladesh Betar nominated it (*Khete Khamare*) as national program in 1973 and named it *Desh Amar Mati Amar*. And for this reason almost all the regional stations relay this program at the same time when it is broadcast by the Farm Broadcast Cell, Dhaka of *Bangladesh Betar* every day at 7:05 p.m. Another program named *Sonali Phasol* is broadcast every day at 6:05 p.m. from Farm Broadcast Cell but it is a regional program designed for the listeners of Dhaka region.

2.3.1 Farm Programs of Bangladesh Betar, Dhaka

All the regional stations of Bangladesh Betar have their own farm programs. In case of designing the programs the needs of the local listeners are considered. Along with the *Sonali Phasol* from the Farm Broadcast Cell, Bangladesh Betar, Dhaka 'K' broadcasts a farm program named *Amar Desh* every day except on Friday at 4:05 p.m. Every day at 6:25 a.m. a farm program named *Krishi Samachar* is broadcast from both Dhaka 'K' and Dhaka 'Kh'. It is designed based on the needs of the local farmers. Besides, Dhaka Betar broadcasts weather report six times a day.

2.3.2 Farm Programs of Bangladesh Betar, Khulna

The regional farm program of Khulna Betar named *Chashabad* was first introduced on November 1, 1979.[67] It was renamed *Ei Desh Ei Mati* (This Country, This Soil) in 1981 being ordered by the Regional Director (RD) Mofizul Islam. Then the next RD Ahamuduzzaman renamed it *Chashabad*.[68] It is broadcast every day at 6:10 p.m. This program is of two types- the first one which is designed for all types of farmers is aired every day except on Friday and the second one designed for the female farmers and the wives of the farmers is aired on Friday and its name is *Chashabad: Mohila Asor.*

Besides, every day a farm related discussion program named *Krishi Samachar* is broadcast at 6:25 a.m. It is a script-based program. The script is written based on the problems recently faced by the farmers or which are likely to occur in the farms and it is provided by the Agriculture Information Service Department (AIS) and other concerned departments. Along with these farm programs Bangladesh Betar, Khulna broadcast weather reports five times daily.

2.3.3 Farm Programs of Bangladesh Betar, Rajshahi

Farm program was used to be aired in 1964 from Rajshahi Betar. At that time its name was *Amar Desh*. Now this program is named *Sobuj Bangla*. It is designed for all sorts of farmers and is aired six days in a week at 6:05 p.m. Another farm program designed for the female is called *Krishani Sava*. It is aired on every Tuesday at 6:05 p.m.

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[67] Interview with Soyed Abdul Motin, (Consolidated artist and the 1st presenter of the farm program- *Chashadad* of Bangladesh Betar, Khulna), interviewed by the researcher, Khulna, 22nd December 2013.

[68] Interview with Soyed Abdul Motin, (Consolidated artist and the first presenter of the farm program- Chashadad of Bangladesh Betar, Khulna), interviewed by the researcher, Khulna, 22nd December 2013.

Every day except on Friday and Saturday a farm-discussion is broadcast at 6:30 a.m. Its name is *Khet Khamar Samachar*. The script of this program is provided by the AlS. Crops related problems are addressed and suggestions are provided through this program. On Friday and Saturday at 6:30 a.m. the *Motsya-O-Prani Sampad Barta* (News on Fisheries and Livestock) is designed based on the problems and suggestions about fisheries and livestock. The scripts are either provided by the Fisheries and Livestock Department or written based on the information provided by these departments.

Besides, weather report is aired thrice a day. Though the weather reports are for all the listeners but the farmers are especially targeted.

2.3.4 Farm Programs of Bangladesh Betar, Chittagong

Every day except on Monday from Bangladesh Betar Chittagong a farm program is broadcast for the development of the agriculture and the farming community of Chittagong. The name of the program is *Krishi Khamar* which is designed for all the farming communities.

On Monday a farm program is broadcast only for the female farmers and the housewives. Its name is *Gayer Bodhu. Krishi Samachar*, a farm-discussion based on the current agriculture related problems faced by the farmers and their solutions is broadcast every day at 6:30 a.m. Besides, weather report is broadcast thrice a day.[69]

[69] Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419, pp.87-92.

2.3.5 Farm Programs of Bangladesh Betar, Rangpur

The main regional farm program of Bangladesh Betar, Rangpur is *Khete Khamare* which is broadcast every day except Monday at 6:05 p.m. A farm program named *Krishani Katha* is designed and broadcast for the female on every Monday of the week.

In order to inform the farmers of the current farming problems and solutions of the problems a daily program named *Krishi Samachar* is broadcast at 6:30 a.m. Besides, weather reports are aired every day five times (three national and two local weather reports).[70]

2.3.6 Farm Program of Bangladesh Betar, Sylhet

Ajker Chashabad a five minute program based on the current agriculture related problems faced by the farmers and their solutions is broadcast every day at 6:25 a.m. All the information and scripts are provided by the AIS, Sylhet.

The biggest and main farm program of Bangladesh Betar, Sylhet is *Shyamal Shelet.* It is developed according to the local demands of the farmers of Sylhet. Every day except Friday it is aired at 6:05 p.m. Irrespective of sex and size all the farmers are the target listeners of this program. Only for the female farmers and the housewives of the region a specified farm program is developed and aired on every Friday at 6:05 p.m. This program is customized for the female and it is named as *Kishani* which means the housewife of a farmer. Beside these, every day there are four weather reports which are broadcast from Bangladesh Betar, Dhaka and relayed by the Sylhet Station.[71]

[70] Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419, pp.103-107.
[71] Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419, pp.108-111.

2.3.7 Farm Programs of Bangladesh Betar, Barishal

Bangladesh Betar Barishal is comparatively a small radio centre with programs on air from 10:48 a.m. to 5:15 p.m. Like Dhaka, Rajshahi, Khulna and other big radio stations Bangladesh Betar, Barishal does not broadcast *Krishi Samachar* in the morning. The main farm program of this station is *Krishi Katha* which is aired every day except Sunday and Tuesday at 3:15 p.m. On fourth Monday phone-in program is arranged for the farmers. Besides, weather report is aired thrice a day. The national program *Desh Amer Mati Amar* is not relayed from this radio station.[72]

2.3.8 Farm Programs of Bangladesh Betar, Rangamati

Bangladesh Betar, Rangamati is also a small radio station with programs on air from 11:28 a.m. to 4:30 p.m. Like Barishal Radio Station it does not broadcast *Krishi Samachar* in the morning. The main farm program of this station is *Khamar Bari*. It is broadcast every day at 3:20 p.m. Weather report is relayed from this station once a day. The national program *Desh Amar Mati Amar* is not relayed from this station.[73]

2.3.9 Farm Programs of Bangladesh Betar, Bandarban

Bangladesh Betar, Bandarban is a small radio station. It starts its transmission every day at 11:26 a.m. and ends at 4:30 p.m. This is why, it cannot broadcast the morning program *Krishi Samachar*, the discussion program on local agricultural issues and needs. Even it cannot relay the national farm program *Desh Amar Mati Amar* broadcast from the Farm Broadcast Cell, Dhaka. The only farm program that is designed and aired

[72] Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419, pp.112-115.
[73] Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419, pp.116-118.

from Bangladesh Betar, Banderban is *Krishi Katha*. It is broadcast every day except on Thursday, Friday and Saturday at 4:05 p.m.[74]

2.3.10 Farm Programs of Bangladesh Betar, Thakurgaon

Bangladesh Betar, Thakurgaon has its own regional farm program. Its name is *Kishan Mati Desh*. It is broadcast on Friday, Saturday, Monday and Wednesday at 6:05 p.m. The national farm program *Desh Amar Mati Amar* is also relayed by this radio station.[75]

2.3.11 Farm Programs of Bangladesh Betar, Cox's Bazar

Sonali Prantar, the only regional farm program of Bangladesh Betar, Cox's Bazar is broadcast every Sunday and Tuesday. On the fourth Tuesday of a month phone-in program is arranged where the questions got over telephone from the farmers are instantly answered through radio transmitter.[76]

2.3.12 Farm Programs of Bangladesh Betar, Comilla

Every day the national farm program *Desh Amar Mati Amar* aired from the Farm Broadcast Cell, Dhaka is relayed by this radio station at 7:05 p.m.

2.4 Content of the farm programs of Bangladesh Betar

The farm programs of Bangladesh Betar are designed in such a way that all sectors of agriculture are covered by the programs. In case of analyzing the content of the farm programs six programs of three radio centres (Bangladesh Betar, Dhaka; Bangladesh

[74] Summer fixed-points, Betar Bangla, Bangladesh Betar, Vol., Baishakh-Jaistha 1419, pp.119-122.
[75] Summer fixed-points, Betar Bangla, Bangladesh Betar, Vol., Baishakh-Jaistha 1419, pp.123-125.
[76] Summer fixed-points, Betar Bangla, Bangladesh Betar, Vol., Baishakh-Jaistha 1419, pp.126-128.

Betar, Khulna and Bangladesh Betar, Rajshahi) have been selected. The programs are as follows:

i. *Desh Amar Mati Amar* from Dhaka Centre,
ii. *Krishi Samachar* and *Chashabad* of Khulna Station, and
iii. *Khetkhamar Samachar, Motsya-O-Prani Sampad Barta* and *Sobuj Bangla* of Rajshahi Betar.

2.4.1 *Desh Amar Mati Amar* of Bangladesh Betar, Dhaka

Every day at 7:05 p.m. a farm program is broadcast from Bangladesh Betar, Dhaka station. The duration of the program is 25 minutes. It is relayed by other regional stations. In order to incorporate all the sectors of agriculture a weekly and monthly schedule is maintained and accordingly the whole program is arranged. The program schedule is as follows:

a. Farm related letters from farmers are answered on Saturday, Tuesday and Thursday.
b. Short dramas on crops, fisheries and livestock are broadcast on every Sunday, Thursday, Wednesday and Friday.
c. Programs on livestock are on the second, third and fifth Wednesday of the month.
d. Program for housewives is on first Wednesday of the month.
e. Inter-radio farm program is broadcast on fourth Wednesday of the month. The Farm Broadcast Cell invites regional farm programs from other regional stations of their own and among the programs the best one is broadcast and relayed by the other regional stations.
f. Program on fisheries is broadcast on every Thursday, and
g. Farm news is on Sunday.

The talkers' (experts) names and the topics related to new innovations in the field of agriculture, farming techniques and so on are proposed by the concerned departments (Agriculture, livestock and fisheries departments) and then the producer of Farm Broadcast Cell designs and produces the program. The planning is done for three months. It is called three-month schedule. Then the monthly schedule is prepared from this three-month schedule. Some topics are as follows:

Table 2.2 Topics of *Desh Amar Mati Amar* broadcast from Bangladesh Betar

Sectors	Topics	Date of broadcast
	Crops	
Crops	Managing the weeds in the *boro* (one type of rice) field	15-01-2012
Crops	Nursing wheat in the field	18-01-2012
Crops	Use of fertilizer in sugar cane field: Amount and methods	25-01-2012
Crops	Producing cotton as alternative to tobacco	26-01-2012
Crops	Pest (gray hoppers) management in transplant field	27-01-2012
Crops	Prescribing fertilizers in a digital way	27-4-2012
Crops	Remedy for the diseases of betel leaves and nursing it	15-5-2012
Crops	Controlling and management acts for fertilizers	18-5-2012
Crops	Importance and techniques of growing plants for green fertilizer	18-5-2012
Crops	The pest (fruit fly) of mango and its management	22-5-2012
Crops	Controlling the pests of vegetables using sex-feromen	23-5-2012
Crops	Effective measures taken to control adulterated fertilizers	25-5-2012
Crops	Preserving the seeds of *boro* (a sort of paddy) at the farmers' level	26-5-2012
Crops	Pest management in jute cultivation by organic and herbal means	27-5-2012
Crops	Cheap way to preserve potato	28-5-2012
Crops	Importance of marketing the agricultural product in group	01-6-2012
Crops	The role of village gardening in the economy of Bangladesh	02-6-2012
Crops	Employment through establishing nursery and gardening	04-6-2012
Crops	Modern scientific cultivation of chilli and its pest management	05-6-2012
Crops	Easy way to test seeds	08-6-2012
Crops	Importance and techniques of growing organic fertilizers for protecting the fertility of soil	09-6-2012
Crops	The cultivation of onion in the summer	10-6-2012
Crops	Collection and preservation of soybean seeds	13-6-2012
Crops	Managing the cultivation of cotton in adverse atmosphere	15-6-2012

Table 2.2 continuing.....

Crops	Managing the salinity of soil in the changing climate	17-6-2012
Crops	The pest of pomegranate and its management	18-6-2012
Crops	The technique of making *jor-kolom* of lichi	19-6-2012
Crops	Role of gardening in the lives of rural people of Bangladesh	23-6-2012
Crops	Irrigation schedule for vegetable cultivation	24-6-2012
Crops	Protecting and managing the pest and diseases of jute	27-6-2012
Crops	Cultivation of draught tolerating paddy during *aman* season	29-6-2012
Crops	Post-harvest marketing of agricultural product in summer season	02-7-2012
Crops	Controlling the pests of crops like pumpkin	02-7-2012
Crops	Pest management of jackfruit	03-7-2012
Crops	Modern marketing strategy of mango	04-7-2012
Crops	Uses of the technologies invented by BRRI in rice cultivation	06-7-2012
Crops	Using AWD technology for saving water	07-7-2012
Crops	Collecting and preserving seeds of maize	13-7-2012
Crops	Commercial cultivation of flower and the duties of the farmers	14-7-2012
Crops	The causes of the sourness of soil and its remedy	15-7-2012
Crops	Process of producing the seeds of radish	19-01-2013
Crops	Growing quality seeds for winter vegetables	20-01-2013
Crops	Using compost fertilizer to increase the fertility of the land	31-01-2013
Crops	Pest management in the store room of *aman* (a sort of paddy) at the farmer's level	01-02-2013
Crops	The use of Guti urea for tomato cultivation	03-02-2013
Crops	How to use modern farm technology to create employment, enhance economic development and eradicate poverty	04-02-2013
Crops	Intercropping in the sugar cane field in modern ways	05-02-2013
Crops	Helping the farmers in marketing their products	09-02-2013
Crops	The cultivation process of tube rose	15-02-2013
Crops	Causes for deteriorating the quality of seeds	18-02-2013
Crops	Managing the salty land in the changing environment	22-02-2013
Crops	Effectiveness of rice and wheat harvesting machine of BRRI	23-02-2013
Crops	Use of farm machineries of Bangladesh Agriculture Research Institute (BARI) for the production and processing of maze	24-02-2013
Crops	Managing the pest (singenta) in the sugarcane field	26-02-2013
Crops	Cultivation of fruit for maintaining the nutrition and health of a farmer's family members	01-3-2013
Crops	Protecting rats in the wheat fields	02-3-2013
Crops	Nutrients and medicinal value of *amloki*	09-3-2013
Crops	Ways of enhancing the irrigated water	10-3-2013
Crops	Cautions for using pesticides in farm products	11-3-2013

Table 2.2 continuing.....

Crops	The effectiveness of crops drying machine of Bangladesh Rice Research Institute (BRRI)	12-3-2013
Crops	Production, processing and preserving the seed of coriander	13-3-2013
Crops	Production, processing and preserving the seed of coriander	13-3-2013
Crops	Scientific methods of cultivation and preservation of zinger	18-3-2013
Crops	The duties of the farmers for collecting and preserving seeds for wheat	25-3-2013
Crops	Scientific methods of cultivation and preservation of garlic	29-3-2013
Crops	Benefits of intercropping	31-3-2013
Crops	Economic development of farmers through cottage industries	12-4-2013
Crops	Cultivation process of elephant foot yam	07-4-2013
Crops	Timely harvest of jute for quality fiber	02-7-2013
Crops	Weed management in *aman* (a sort of paddy) field	19-7-2013
Crops	Post-harvest nursing of banana	29-7-2013
Crops	Technology for growing seedlings of jackfruit	21-7-2013
Crops	Nutrients and multiple uses of pineapple	22-7-2013
Crops	Pest management for stored rice	23-7-2013
Crops	Production techniques of quality seeds of *aman* (a sort of rice)	23-7-2013
Crops	Nursing cotton plants at different stages of growth	27-7-2013
Crops	Leaves eating insects in the transplant *aman* (sorts of paddy) fields	02-8-2013
Crops	Leaves eating insects in the transplant *aman* (sorts of paddy) fields	02-8-2013
Crops	Minimizing the wastage through accurate grading and packaging of agricultural products	03-8-2013
Crops	Using rubber dam for irrigation	04-8-2013
Crops	Confronting draught in transplant *aman* (sorts of rice) season	13-8-2013
Crops	Water management in the sugarcane field	14-8-2013
Crops	Abiding by the seed law in producing the seeds at the farmer's personal level	14-8-2013
Crops	Role of organic fertilizers for vegetable cultivation	18-8-2013
Crops	Nutrients and multiple uses of water spinach (a sort of aquatic vegetable)	19-8-2013
Crops	Irrigation and preservation of the moisture of soil for cotton cultivation	19-8-2013
Crops	Fertilizer management for fruit trees	20-8-2013
Crops	Duties to have rational prices for the agricultural products	24-8-2013
Crops	Techniques for the preservation of nuts	25-8-2013
Crops	Special care in producing sugarcane seeds	26-8-2013
Crops	Nutrients and production process of Palmyra tree	26-8-2013
Crops	Management of cotton plants in the plain land during its primary growth	03-9-2013
Crops	Organizational role in marketing the agricultural products	06-9-2013
Crops	Irrigation using solar energy	07-9-2013
Crops	Nutrients of banana and its flower	8-9-2013

Table 2.2 continuing.....

Crops	Growing seedling of sugarcane	13-9-2013
Crops	Taking care of the stored wheat seeds	16-9-2013
Crops	Fertilizer management at different stages of growth of hilly cotton	16-9-2013
Crops	Easy marketing of agricultural products	20-9-2013
Crops	Categories of chewing sugarcane	22-9-2013
Crops	Appropriate use of agricultural elements to increase the production	25-9-2013
Crops	Using prepaid meter in irrigation	27-9-2013
Crops	Confronting the gray hopper in paddy field	29-9-2013
Crops	Collecting and maintaining the quality of the seeds of jute	30-9-2013
Crops	Producing green pea using vermicompost, rhyzobiam with chemical fertilizer in a balanced way	04-10-2013
Crops	Cautions for packing the seasonal fruits	04-10-2013
Crops	Importance of producing non-major crops and the steps taken by Bangladesh Rural Development Board (BRDB)	06-10-2013
Crops	Early cultivation of sugarcane	07-10-2013
Crops	Integrated Pest Management (IPM) for stored corns	11-10-2013
Crops	Processing and marketing the home produced fruits	12-10-2013
	Livestock	
Livestock	Managing the layer chicken in the winter	05-12-2012
Livestock	Vaccination for protecting anthrax	31-10-2012
Livestock	Preparing and marketing cheese	28-11-2012
Livestock	Artificial insemination (AI) in Buffalo	20-02-2013
Livestock	Rearing quail for poverty reduction	27-02-2013
Livestock	Intensive goat rearing	27-3-2013
Livestock	Advance technology for rearing indigenous chick beneath the feather	03-4-2013
Livestock	Self-employment through dairy farm	24-7-2013
Livestock	Treatment of Foot and Mouth (FMD) disease in the rainy season	31-7-2013
Livestock	Vaccination of goat and sheep in the rainy season	28-8-2013
Livestock	Malnutrition of cows during pregnancy	25-9-2013
Livestock	Role of bio-security to protect bird-flu	22-01-2014
Livestock	Growing high yielding variety of grass for increasing milk production	11-02-2014
Livestock	Sheep rearing for poverty alleviation	05-3-2014
	Fisheries	
Fisheries	Common diseases of fishes and their treatment	16-01-2014
Fisheries	Soreness of fishes and its treatment	23-1-2014
Fisheries	Food management for fishes in the winter	29-01-2014
Fisheries	Duties to protect the extinct varieties of fish	06-02-2014
Fisheries	Preparing nursery for the fishes of carp variety	13-02-2014
Fisheries	Commercial production of yellow tail cat fish	27-02-2014

Table 2.2 continuing.....

Fisheries	Rearing fish in a cage	06-3-2014
Fisheries	Farming mono-sex tilapia	13-3-2014

Source: The three-month schedule, from 1st Magh -30th Chaitra, 1419 (14th January – 13th April, 2013), from 1st Baishakh, 1419 to 31st Ashar, 1419 (14th April -15th July, 2013), from 1st Sraban, 1419 to 30th Ashwin, 1419 (16th July to 15th October, 2013), and from schedule of 2014, Farm Broadcast Cell, Bangladesh Betar, Dhaka.

2.4.2 *Chashabad* of Bangladesh Betar, Khulna

Chashabad is a magazine program which is broadcast every day at 6:10 p.m. except on Friday. On Friday this program is designed especially for the female and it is called *Chashabad: Mohila Asor* (Cultivation: Stage for women). This program covers all sectors of agriculture (crops, fisheries and livestock). There is also phone-in program. The contents of the programs are as follows-

Table 2.3 Topics of *Chashabad* broadcast from Bangladesh Betar

Sector	Topics	Date of broadcast
	Crop	
Crop	Seed bed preparation, sowing the seeds of *tosha* (a sort of jute) and using fertilizer	01-4-2012
Crop	Irrigation in the *boro* field	03-4-2012
Crop	Cultivation of Jackfruit	05-4-2012
Crop	Modern method of stem amaranth cultivation	07-4-2012
Crop	Nursing the bamboo garden	12-4-2012
Crop	Importance of soil taste to protect the soil fertility	14-4-2012
Crop	Pest management in the *boro* field	17-4-2012
Crop	Preparing fertilizers in the farm and its uses	18-4-2012
Crop	Modern system of marketing the farm products	19-4-2012
Crop	Modern variety of banana and its cultivation	22-4-2012
Crop	Okra cultivation in the modern ways	24-4-2012
Crop	Betel leaves cultivation and its importance	28-4-2012
Crop	Modern ways of cultivating eddo	29-4-2012
Crop	Selecting the variety and preparing the seed beds for *aman*	01-5-2012
Crop	Nursing the vegetables and pest management	03-5-2012
Crop	Preparation and uses of compost fertilizers	04-5-2012
Crop	Nursing *aus* (a sort of rice)	05-5-2012
Crop	Coconut cultivation	06-5-2012

Table 2.3 continuing.....

Crop	Harvest, processing and storage of seeds of *boro*	12-5-2012
Crop	Pest management of crops like pumpkin	10-5-2012
Crop	Pest management for sugarcane	22-5-2012
Crop	Pest management for brinjal	24-5-2012
Crop	Nursing turmeric and ginger	27-5-2012
Crop	Cultivation of betel nut for economic development	03-7-2012
Crop	Nursing tomato in the summer	08-7-2012
Crop	Medicinal value of *nim*	15-7-2012
Crop	Using Guti Eurea in transplant *aman*	17-7-2012
Crop	Mixed fruits garden	22-7-2012
Crop	Cultivation of moth bean in the rainy season	28-7-2012
Crop	Commercial cultivation of mango	29-7-2012
Crop	Pest management for the vegetables in the rainy season	31-7-2-12
Crop	The economic value of planting palm trees	02-8-2012
Crop	Pest management for hog-plum	07-8-2012
Crop	Cultivation of indigenous bean	09-8-2012
Crop	Modern cultivation methods for bottle gourd	14-8-2012
Crop	Some diseases of jackfruit and their treatment	21-8-2012
Crop	*Amloki* and *koromcha* to meet the need of vitamin C	31-8-2012
Crop	The activities of Agricultural Extension Department in handing over the agricultural technologies	01-9-2012
Crop	The nutritional value of bottle gourd leaf	02-9-2012
Crop	The nutritional value of yam leaf and its cultivation	06-9-2012
Crop	Growing the plants of winter vegetables	08-9-2012
Crop	Selecting the crop according to the quality of soil and land	15-9-2012
Crop	Duties of the farmers in the month of *Ashwin* (name of a month of Bengali calendar)	
Crop	Commercial production of flower in the tub	21-9-2012
Crop	Nursing the planted trees	22-9-2012
Crop	Cultivation of maize	30-9-2012
Crop	Cultivation of Indian pea and *kheshari* as pulses	01-10-2012
Crop	Cultivation of winter vegetable like cabbage	11-10-2012
Crop	Importance of testing the soil for the cultivation of winter vegetables	15-10-2012
Crop	High yielding variety of chickpea and its cultivation	23-10-2012
Crop	High yielding variety of wheat and its cultivation	25-10-2012
Crop	Cultivation of potato	27-10-2012
Crop	Intercropping with potato	03-11-2012
Crop	Modern variety of onion and its cultivation	11-11-2012
Crop	The usefulness of mustard and its cultivation	13-11-2012

Table 2.3 continuing.....

Crop	Cultivation of small cucumber in modern ways	24-11-2012
Crop	Problems of the cultivation of crops like pulses and the solutions	25-11-2012
Crop	High yielding variety of water-melon and its cultivation	04-12-2012
Crop	Nursing the seed beds of *boro* in the winter	09-12-2012
Crop	Using herbicides in the fields of winter vegetables	14-12-2012
Crop	Ways of decreasing the salinity of soil	15-12-2012
Crop	Cultivation of small bitter gourd	21-12-2012
Crop	Collecting the seeds of cotton and its storage	30-12-2012
Crop	Farming paddy and shrimps by rotation	09-01-2013
Crop	Producing date-juice and molasses in Jessore (a district of Bangladesh) reason and the farmers' duties in marketing the product	17-01-2013
Crop	Cultivation of oil seeds	26-01-2013
Crop	Leaf colour chart and its uses	12-02-2013
Crop	Cultivation of hybrid variety of *til*	26-02-2012
Crop	Harvest and storage of potato	28-02-2012
Crop	Modern cultivation of green chilli	15-02-2013
Crop	Uses of chemical fertilizers	16-02-2012
Crop	Diseases of mango and their treatment	04-3-2013
Crop	Using fertilizers in a balanced way	06-3-2013
	Fisheries	
Fisheries	Preparing the pond for farming fishes like rohu (*rui*)	04-4-2012
Fisheries	Fish preservation act and its implementation	11-4-2012
Fisheries	Using lime and fertilizers in the ponds	25-4-2012
Fisheries	Farming the shrimps and lobster (*bagda* and *golda*)	02-5-2012
Fisheries	Taking care of the farm of *bagda* (shrimps)	09-5-2012
Fisheries	Protecting *jhatka* (immature hilsa)	16-5-2012
Fisheries	Seasonal fish farming in the pond	23-5-2012
Fisheries	Mixed farming of lobster and carp	30-5-2012
Fisheries	Mixed farming of small and medium varieties of indigenous fishes with carp	18-7-2012
Fisheries	Farming fish in the paddy fields	25-7-2012
Fisheries	Nursing the fish in the rainy season	01-8-2012
Fisheries	Foods for *golda*	08-8-2012
Fisheries	Brood fish management	15-08-2012
Fisheries	Techniques for lessening the salinity in the shrimps farming area	18-8-2012
Fisheries	Mixed farming of fish with *golda* and providing supplementary food for them	22-8-2012
Fisheries	Mixed farming of carp and yellowtail catfish.	29-8-2012

Table 2.3 continuing.....

Fisheries	Some common problems in fish (lobster and others) farming and their solution	05-9-2012
Fisheries	Technological problems in fish farming and its solution	19-9-2012
Fisheries	Managing the diseases of lobster	26-9-2012
Fisheries	Managing the hatchery of *golda*	12-10-2012
Fisheries	Duties of farmers in farming white fishes and shrimps in November	07-11-2012
Fisheries	Duties to preserve the larvae of fish	14-12-2012
Fisheries	Problems in exporting *golda* and *bagda* and the solution	19-12-2012
Fisheries	Developing the infrastructure and managing the farm for shrimps (*bagda*)	01-01-2013
Fisheries	Transportation of larvae of fish and shrimps.	30-01-2013
Fisheries	Bank loan for shrimps farming	13-02-2013
Fisheries	Methods of providing foods for fishes like carp and tilapia	03-3-2013
Fisheries	Cautions for preserving the larvae of shrimps	10-3-2013
Fisheries	Water management in the shrimp farms	24-3-2013
Fisheries	Importance of preserving the indigenous variety of small fishes	31-3-2013
	Livestock	
Livestock	Black quarter (BQ) diseases of cattle and its treatment	02-4-2012
Livestock	Cattle worm and prevention	09-4-2012
Livestock	Molting the chicken	16-4-2012
Livestock	Cutting the beaks of the chickens in the commercial farm	23-4-2012
Livestock	Vaccination of cattle, chickens and ducks	304-2012
Livestock	Litter management in the chicken farm	14-5-2012
Livestock	Farm management for cattle	28-5-2012
Livestock	Food management for ducks of different ages	02-7-2012
Livestock	Cross-breed calf rearing	09-7-2012
Livestock	Inbreeding, its drawbacks and other responsibilities	16-7-2012
Livestock	Farming cattle in the rainy season	23-7-2012
Livestock	The process of rearing quail and its economic importance	30-7-2012
Livestock	Bio-security in the chicken farm	06-8-2012
Livestock	Steps taken by the Government Livestock Department for the alleviation of poverty	13-8-2012
Livestock	Some diseases of goats	20-8-2012
Livestock	Duties and responsibilities of the farmers to protect and control bird-flu	03-9-2012
Livestock	Preparing milk starter as an alternative to milk for the new born calf	10-9-2012
Livestock	Producing bio-gas using the waste in the chicken firm	17-9-2012
Livestock	The economic value of farming pigeon and its management	24-9-2012
Livestock	Farming chicken at household level in rural area	03-10-2012

Table 2.3 continuing.....

Livestock	The farmers' role in controlling Foot and Mouth (FMD) disease of cattle	10-10-2012
Livestock	Chicken pox and its treatment	12-11-2012
Livestock	The causes of avian influenza of birds and its remedy	17-12-2012
Livestock	HS of cattle and its treatment	24-12-2012
Livestock	Nursing the cows and calves	07-01-2013
Livestock	Cattle worm and prevention	14-01-2013
Livestock	Diseases like PP of goat and its vaccination	04-02-2012
Livestock	Rearing sheep in saline affected area	25-02-2013

Source: Monthly Date Charts of *Chashabad* of 2012-13, Bangladesh Betar, Rajshahi.

Table2.4 Topics *of Mohila Asor* broadcast from Bangladesh Betar

Sector	Topics	Date of broadcast
Crop	Cultivation of Mushroom to increase the family income	06-4-2012
Crop	The nutrients of potato and its multiple usages	13-4-2012
Crop	Cooking the vegetables for feeding the children	20-4-2012
Crop	Creating employment opportunities for the rural women through vegetable cultivation	27-4-2012
Crop	Role of women in collecting and storing seeds	06-7-2012
Crop	Role of fruit and vegetables for the nutrition of the babies	13-7-2012
Crop	Role of women in implementing IPM	20-7-2012
Crop	Role of medicinal plants for the treatment of diseases	27-7-2-12
Crop	The medicinal value of *thankuni*	03-8-2012
Crop	Role of women to ensure proper uses of vegetables	10-8-2012
Livestock	Role of women in establishing chicken and duck farms for economic development	17-8-2012
Crop	Importance of producing flower for the economic development of women and the cultivation of rose	07-9-2012
Crop	Nursing the fruit trees on the yard	14-10-2012
All sectors	Role of women in agricultural development through co-operative society	28-10-2012
All sectors	Role of women in implementing 'one house, one farm' policy of the government	09-11-2012

Source: Monthly Date charts of *Mohila Asor* of 2012, Bangladesh Betar, Rajshahi

2.4.3 *Khetkhamar Samachar* of Bangladesh Betar, Rajshahi

The first farm program of the daily transmission of Bangladesh Betar, Rajshahi is *Khetkhamar Samachar*. It is a discussion program like *Samachar* of Dhaka station. It is broadcast every day at 6.30 p.m. except Friday and Saturday. The content of this program are as follows-

Table2.5 Topics of *Khetkhamar Samachar* broadcast from Bangladesh Betar

Sector	Topics	Date of broadcast
Crop	Vegetables, potato and its advance fall, Irrigation in the potato fields, using herbicides and so on	01-01-2012
Crop	Cultivation of mustard with sugarcane and their nursing, using herbicides and supplying sugarcane to the sugar mills	03-1-2012
Crop	Nursing the seed beds of *boro, boro* planting, vegetables and wheat cultivation	05-1-2012
Crop	Using *Guti* Eurea in rice cultivation and taking care of winter vegetable fields	08-01-2012
Crop	*Boro* planting, nursing of wheat fields and diseases and pest management of onion	10-01-2012
Crop	Pest management in mustard field, taking care of mango garden and the diseases of onion	19-01-2012
Crop	Nursing the wheat in the field, confronting the rat and nursing the maize and intercropping in the maize field	09-02-2012
Crop	Intercropping and nursing the sugarcane and confronting rats in the sugarcane fields	15-02-2012
Crop	Cultivation of sweet pumpkin (*kumra*), wax gourd (*chal kumra*), cucumber, ridge gourd (*jhinga*), sponge gourd (*dhundul*)	16-02-2012
Crop	Cultivation of mango and wheat	21-02-2012
Crop	Cultivation of summer vegetables and their marketing	23-02-2012
Crop	Nursing the *boro* field and some to talk about wheat	24-02-2012
Crop	Cultivation of *boro* and indigenous jute	29-02-2012
Crop	Jute and summer vegetables (red amaranth, stem amaranth, ribbed gourd, bitter gourd, brinjal, okra, pumpkin (green), pointed gourd, *ponka shakh* and so on) cultivation	06-3-2012
Crop	Ash gourd, snake Gourd, sponse gourd, bottle gourd, pumpkin, bitter gourd cultivation and harvesting onion, garlic, oil seeds and red lentil	07-3-2012
Crop	Pest management in mango garden	11-3-2012

Table 2.5 continuing.....

Crop	Papaya cultivation and its fertilizer management	22-3-2012
Crop	Wheat seeds collection and summer vegetables	28-3-2012
Crop	Integrated pest management in *boro* field and its irrigation	29-3-2012
Crop	Summer vegetables cultivation, wheat harvesting and preservation methods	03-4-2012
Crop	Growing green fertilizers, nursing *boro* and cultivation of *aman*	04-4-2012
Crop	Jute and organic fertilizer cultivation	08-4-2012
Crop	Bamboo and sugarcane cultivation	09-4-2012
Crop	Irrigation in *boro* field	16-4-2012
Crop	Using herbicides, and nursing the *aus*	24-4-2012
Crop	Banana and papaya cultivation	25-4-2012
Crop	Pest management, harvesting and preservation of rice	06-5-2012
Crop	Using organic fertilizer to preserve soil fertility	07-5-2012
Crop	Collection (harvesting) and preservation of summer vegetables	10-5-2012
Crop	*Boro* harvesting and preservation, Summer vegetable harvesting and preservation	10-5-2012
Crop	Harvesting, grading and marketing the summer fruits and uses of maize	14-5-2012
Crop	Cultivation of ginger and preserving the soil fertility	20-5-2012
Crop	*Boro* seeds preservation	28-5-2012
Crop	Seed bed preparation for *aman*	29-5-2012
Crop	Harvesting jute and making jag of it	10-7-2012
Crop	Planting fruit tree	12-7-2012
Crop	Cultivation of *aman*, nursing the papaya garden	17-7-2012
Crop	Nursing the trees and summer vegetables and planting the cotton seeds	29-7-2012
Crop	Planting the seeds of bottle gourd and beans	08-8-2012
Crop	Advance cultivation of winter vegetables and using fertilizers for *aman*	09-8-2012
Crop	Seed bed preparation for cabbage, cauliflower, brinjal, teasle, gourd, turnip, tomato and so on	14-8-2012
Crop	Integrated pest management in paddy fields	23-8-2012
Crop	Diseases of sugarcane and its treatment	02-9-2012
Crop	Nursing of paddy, beans and fruit trees	03-9-2012
Crop	Winter vegetables, *mash kalai* and maize cultivation	04-9-2012
Crop	Red amaranth, radish cultivation and confronting rats in the fields	20-9-2012
Crop	Mulberry cultivation and nursing the silkworm	01-10-2012
Crop	Crops like pulse cultivation	21-10-2012
Crop	Oil seeds cultivation	11-11-2012
Crop	Winter crops cultivation	05-12-2012
Crop	Use of drum seeder	30-12-2012

Source: Monthly Date charts of *Khetkhamar Samachar* of 2012, Bangladesh Betar, Rajshahi

2.4.4 *Sobuj Bangla* of Bangladesh Betar, Rajshahi

Sobuj Bangla is a daily program and it is broadcast every day but on Tuesday this program is especially designed for the female and it is named as ***Krishani Sava*** (Meeting of the wives of the farmers). This program covers all sectors of agriculture (crops, fisheries and livestock). Besides, some issues indirectly related to agriculture are also broadcast. Every week a discussion on the health issues of the farmers is broadcast. On every Wednesday the letters from the farmers on different questions related to agriculture are answered by the experts. So the ***Sobuj Bangla*** is a diversified farm program. The contents of this program are as follows-

Table2.6 Topics of *Sobuj Bangla* broadcast from Bangladesh Betar

Sector	Topics	Date of broadcast
Crops	Health of the farmers and his/her family members	01-01-2012
Crops	Duties at the *boro* seed field in winter	02-01-2012
Crops	Nursing winter vegetables in fields	03-01-2012
Crops	Phone-in-program: Questions asked by the farmers by telephone are answered directly by the experts	04-01-2012
Crops	Nursing chickpea and red lentil (a kind of pulse) in fields	05-01-2012
Crops	Nursing onion in fields	06-01-2012
Crops	Harvesting ginger and turmeric and their storage and preservation.	07-01-2012
Crops	Field preparation, planting and fertilizer management for *boro*	08-01-2012
Crops	Wheat cultivation	09-01-2012
Crops	Answer to the questions of the letters from the farmers	11-01-2012
Crops	Cultivation of potato and its pest management	13-01-2012
Crops	Nursing garlic in the field	19-01-2012
Crops	Pest (hopper) management for mango	20-01-2012
Crops	Nursing brinjal in the fields	22-01-2012
Crops	Cultivation of maize	23-01-2012
Crops	Nursing the banana garden in the winter	27-01-2012
Crops	Cultivation of bitter gourd	30-01-2012
Crops	Selecting and preparing seed bed for wheat cultivation	01-02-2012
Crops	Nursing *boro* in the field	04-02-2012
Crops	Nursing bottle gourd in the field	07-02-2012

Table 2.6 continuing.....

Crops	Pest management in *boro* field	08-02-2012
Crops	Nursing the sugarcane in the field	14-02-2012
Crops	Nursing the litchi in trees	18-02-2012
Crops	Taking care of bamboo garden	25-02-2012
Crops	Cultivation of pointed gourd	28-02-2012
Crops	Cultivation of moth bean (*mug dal*) in the summer	03-3-2012
Crops	Techniques of the cultivation of ribbed gourd and bitter gourd	08-3-2012
Crops	Techniques of the cultivation of okra	11-3-2012
Crops	Harvest and storage of potato	16-3-2012
Crops	Advanced cultivation of summer vegetables	19-3-2012
Crops	Selecting the seeds of transplant *aman*, preparing the seed beds, sowing the seeds and managing the fertilizers in a balanced way for transplant *aman*	23-3-2012
Crops	Taking care of bottle gourd and pumpkin in the field	28-3-2012
Crops	Harvest and storage of garlic and onion in the field	29-3-2012
Crops	Cultivation and nursing of jackfruit	30-3-2012
Crops	Irrigation, pest management and treatment of the diseases of *boro*	02-4-2012
Crops	Planting high quality mulberry for increasing the production of silk	05-4-2012
Crops	Diseases of mango and its treatment	09-4-2012
Crops	Cultivation of transplant *aus*	16-4-2012
Crops	Cultivation of red amaranth and stem amaranth	22-4-2012
Crops	Cultivation of jute and its nursing	18-5-2012
Crops	Importance of testing soil to protect the soil fertility.	19-5-2012
Crops	Harvesting and storing moth bean (*mug dal*) in the summer.	02-6-2012
Crops	Harvesting, storage and marketing of mango	09-6-2012
Crops	Harvesting and marketing summer vegetables	10-6-2012
Crops	Nursing and pest management in the plantation of betel	14-6-2012
Crops	Cultivation of guava	18-6-2012
Crops	Cultivation of papaya	22-6-2012
Crops	Duties of farmers in the vegetable fields in the rainy season	03-7-2012
Crops	Green chilli cultivation in the summer	07-7-2012
Crops	Cultivation of mushroom and its nutrients	21-7-2012
Crops	Using modern agricultural technologies	22-7-2012
Crops	Cultivation of redish in advance	11-8-2012
Crops	Cultivation of beans in advance	12-8-2012
Crops	Cultivation of spinach	23-8-2012
Crops	Cultivation of cauliflower in advance	13-9-2012
Crops	Cultivation of cabbage in advance	16-9-2012
Crops	Cultivation of mustard	12-10-2012

Table 2.6 continuing.....

Crops	Cultivation of tomato	22-11-2012
	Fisheries	
Fisheries	Management of the ponds for fish in winter	16-01-2012
Fisheries	Providing supplementary food for fish in the pond	28-01-2012
Fisheries	Vigilance and other duties for the fish farmers in the winter	10-02-2012
Fisheries	Preparing food for the fish and its storage and preservation techniques	21-02-2012
Fisheries	Using lime in the pond of fish	10-3-2012
Fisheries	Preparing the pond for fish farming, providing supplementary food and other duties	26-3-2012
Fisheries	Mixed fish farming in a profitable way	07-01-2012
Fisheries	Producing larvae and the profitability of fish farming	28-4-2012
Fisheries	Role of women in farming fish in the small pond of the house	15-5-2012
Fisheries	Transportation, storage, purification and sorting of larvae	24-5-2012
Fisheries	Ways of increasing the production of fish in the pond	27-5-2012
Fisheries	Duties after the storage of larvae in the pond	18-6-2012
Fisheries	Protecting the indigenous fishes from extinction	04-8-2012
Fisheries	Managing the ponds of fish after flood and providing supplementary foods	14-9-2012
Fisheries	Treatment of putrefaction of tails and other parts of the body of fish	30-12-2012
	Livestock	
Livestock	Ways to keep the cattle healthy in winter	12-01-2012
Livestock	Diseases of chicken and ducks and their treatment	26-01-2012
Livestock	Rearing chickens and ducks by the female for extra income for the family	31-01-2012
Livestock	*Ranikhet* of chickens and its treatment	15-02-2012
Livestock	Importance of rearing cattle and the role of women for economic development	19-02-2012
Livestock	Modern methods for rearing silkworm	23-02-2012
Livestock	Nursing the cows and their food management	24-02-2012
Livestock	Problems resulted from the lack of minerals in case of Layer and its solution	24-3-2012
Livestock	Rearing the chicks and ducklings and their management	31-3-2012
Livestock	Fattening of cattle	10-4-2012
Livestock	Diseases of cattle and their treatment	14-5-2012
Livestock	Goat farming	22-5-2012
Livestock	Ways of keeping the cattle healthy	25-5-2012
Livestock	Role of women in farming the layer at home	05-6-2012
Livestock	The causes and treatment of foot and mouth diseases (FMD) of the cattle	11-6-2012
Livestock	Feeding the cattle carefully and providing supplementary food	09-8-2012
Livestock	Ways of keeping the ducks and chickens healthy	19-8-2012

Table 2.6 continuing.....

Livestock	Nursing the ducks and chickens after flood	11-9-2012
Livestock	The food management for cattle after flood	20-9-2012
Livestock	To spill out the skin of sacrificed animals and waste management	27-10-2012
Livestock	Preparing balanced diet for the cattle	02-11-2012
Livestock	Treatment of chicken pox and P.P.R. of goat and sheep	26-11-2012
Livestock	Artificial insemination (AI) in cattle	06-12-2012
Livestock	Treatment of pneumonia of cattle	28-12-2012
	Krishani Sava	
Crop	Nursing the beans in trees on the yard	10-01-2012
Crop	Duties of the female members of a farmer's family for harvest, storage and preservation of winter vegetables	17-01-2012
Crop	Preparing and preserving different types of food with tomato	24-01-2012
Livestock	Rearing hens and ducks for extra income for the family	31-01-2012
Crop	Role of the wives in collecting, storing and preserving the seeds of winter vegetables	05-02-2012
Crop	Nursing and managing the pest of the vegetables in the yard-garden	12-02-2012
Livestock	Importance of rearing cattle and the role of women for economic development	19-02-2012
Crop	Role of the women for the cultivation of summer vegetables in advance on the yard	06-3-2012
Livestock	Creating women employment through fattening the cattle	10-4-2012
Crop	Planting fruit trees on the yard	17-4-2012
Crop	Techniques of cooking vegetables preserving the nutrients	24-4-2012
Livestock	Goat farming for economic development of the female	22-5-2012
Crop	Role of women to preserve vegetables and fruits at family level	29-5-2012
Crop	Duties of women to increase the production of creeping vegetables on the yard	19-6-2012

Source: Monthly Date charts of *Sobuj Bangla* of 2012, Bangladesh Betar, Rajshahi

2.5 Analysis of the Programs

The programs are developed through inter-departmental collaboration meeting and in designing and developing the programs four important factors are emphasized- what to broadcast, when to broadcast, how much to broadcast and how to broadcast. Based on the four indicators the planners from Bangladesh Betar, Department of Livestock, Department of Fisheries and Forestry Department set the *agenda* and *prime* the subjects and topics.

2.5.1 Agenda Setting

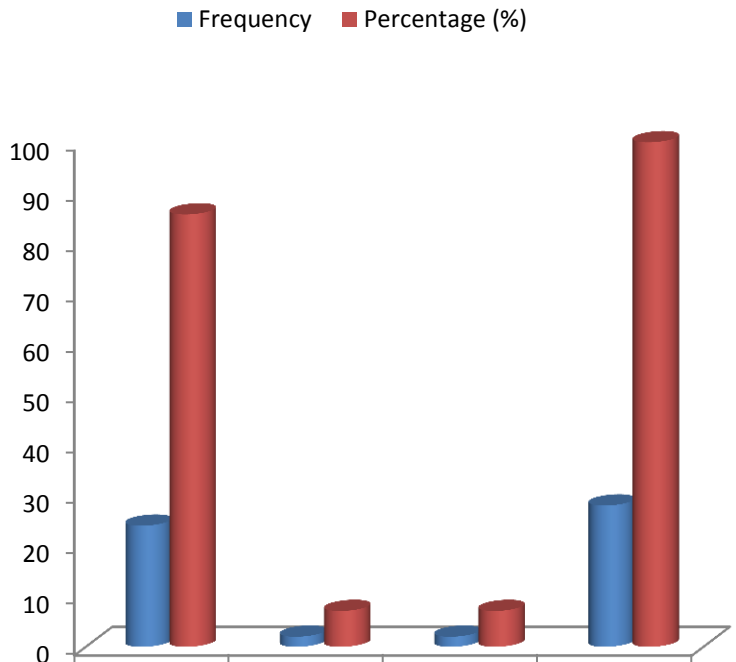
There held a collaboration meeting among the officers of concerned departments (Bangladesh Betar, Department of Agriculture Extension, Department of Livestock, Department of Fisheries and Forestry Department) on every three months. In this meeting the topics which will be broadcast in the next three months are selected. Based on the season and the farmers' needs the topics are selected. Then a three-month schedule is prepared.

According to this three-month schedule the producer of the farm program of Bangladesh Betar prepares a monthly schedule where daily topic is selected. Every day morning before starting the deskwork the Regional Director (RD) arrange a meeting which is called *program meeting* presided over by the RD himself/herself and all the officers of the program section of the regional station are bound to attend the meeting. The producer of the farm program presents the details of the next day program to the meeting. There is a discussion on the topics and other concerned issues of the program. During the discussion any officer can express his or her opinion. If the opinion seems to be logical to most of the officers then the producer can accept the opinion and thereby arrange the program but it must be approved by the RD.

If it is needed, the producer is ordered to consult with the officers of other concerned departments. After consultation the producer can make any change in the program with the permission of the RD. Always the prevailing situations in the fields and the needs of the farmers are emphasized and the program is designed accordingly. For this reason the farm program is always up-to-date in respect of the subjects and topics. This is why, the programs have been analyzed based on these traits-(i) Contents, (ii) Broadcast Schedule, (iii) Duration and (iv) Formats of the programs.

2.5.2 Content of the Programs

How many sectors the programs have covered is very important. In this study in case of the farm programs of Bangladesh Betar (Bangladesh Betar, Dhaka; Bangladesh Betar, Rajshahi and Bangladesh Betar, Khulna.), it has been seen that all the sectors of agriculture (crop, livestock, fisheries and forest) are covered by the farm programs. But for this study three sectors (crop, livestock and fisheries) have been considered and it has been tried to see whether all the subjects and topics are covered by the programs.



	Must be increased	Should be increased	No need to be increased	Total (n)
Frequency	24	2	2	28
Percentage (%)	85.7	7.1	7.1	100

Figure 2.3: Distribution of the experts' opinions on the broadcasting hours

Though all the sectors are covered by the farm programs yet after analyzing the experts' opinions on the allocation of the broadcasting hours it has been seen that most of the experts objected to the sector-wise allocation of broadcasting hours (Figure 2.3). At present per week only two days are fixed for programs on fisheries and livestock (one day is for fisheries and another day is for livestock).

Pointing to the weekly allocation of broadcasting hours most of the experts emphasized on the increase of the days for farm programs on fisheries and livestock. Almost all the experts' (85.70%) consensus was in favor of increasing the broadcasting hours for fisheries and livestock sectors (Figure 2.3).

2.5.2.1 Subjects and Topics of the Programs

Topics of the program will vary according to the sectors of agriculture. Three sectors of agriculture- crop, livestock and fisheries have been considered and the topics of the farm programs have been analyzed based on these three sectors. Firstly the crop sector then the livestock and at last the fisheries sector has been discussed.

2.5.2.1.1 The Crop Sector: In case of crop sector the following indicators have been set to analyze the program:

2.5.2.1.1.1 Types of Crops: There are mainly seven types of crops produced in Bangladesh which are covered by the farm programs broadcast from all the radio stations (Bangladesh Betar, Dhaka; Bangladesh Betar, Rajshahi and Bangladesh Betar, Khulna):

2.5.2.1.1.1.1 Food Grains: The farmers of Bangladesh generally produce rice, wheat and maize as staple food grains. It has been seen that all these crops have been discussed in all the farm programs broadcast from all the radio stations (Table 2.7).

2.5.2.1.1.1.2 Cash Crops: The main cash crops of Bangladesh are jute, cotton, tea, sugarcane, tobacco, betel leaves and so on. The farm programs of Bangladesh Betar cover jute, cotton, tea, sugarcane, bamboo, betel nut and betel leaves (Table 2.7).

The study has revealed that among the cash crops jute, cotton, sugarcane, bamboo, betel nut and betel leaves were the topics of discussion of the farm programs of all the radio centers (Dhaka, Rajshahi and Khulna). Tobacco is discouraged to be cultivated as a matter of principle of broadcasting. But, it has been seen that there was no program on tea. Betel nut was covered only by the Khulna station.

2.5.2.1.1.1.3 Vegetables: Cabbage, ash gourd, cauliflower, brinjal, potato, pointed gourd, pumpkin, tomato, radish, beans, bottle gourd, elephant foot yam, red amaranth, ridge gourd, snake gourd, spinach, string beans, taro, teasle gourd, turnip, yam, cucumber, drumstick, Ceylon spinach, okra, carrot and so on are the main vegetables of Bangladesh. Here it has been tried to see whether all the vegetables are discussed in the farm program. All the vegetables belong to either **summer-vegetables** or **winter-vegetables** which are covered by the farm programs. Some of the vegetables are discussed by name (Table 2.7).

Table 2.7 Subject and topics of crop sector broadcast from Bangladesh Betar

Topics	Time	Date	P	Station
Rice				
The effectiveness of crops drying machine of BRRI	7:05 p.m.	12-3-2013	DM	Dhaka
Nursing the seed beds of *boro*, *boro* planting, vegetables and wheat cultivation	6:25 a.m.	05-1-2012	KS	Rajshahi
Nursing *aus*	6:10 p.m.	05-5-2012	C	Khulna
Wheat				
Nursing wheat in the field	7:05 p.m.	18-1-2012	DM	Dhaka
Wheat cultivation	6:05 p.m.	09-1-2012	SB	Rajshahi
Wheat seeds collection and summer vegetables	6:25 a.m.	28-3-2012	KS	Rajshahi
High yielding variety of wheat and its cultivation	6:10 p.m.	25-10-2012	C	Khulna
Maize				
Collecting and preserving seeds of maize	7:05 p.m.	13-7-2012	DM	Dhaka
Cultivation of maize	6:10 p.m.	30-9-2012	C	Khulna
Nursing the wheat in the field, confronting the rat and nursing the maize and intercropping in the maize field	6:25 a.m.	09-2-2012	KS	Rajshahi
Cultivation of maize	6:05 p.m.	23-1-2012	SB	Rajshahi
Jute				
Pest management in jute cultivation through organic and herbal process	7:05 p.m.	27-5-2012	DM	Dhaka
Seed bed preparation and sowing the seeds of *tosha* Jute and using fertilizer	6:10 p.m.	01-4-2012	C	Khulna
Cultivation of jute and its nursing	6:05 p.m.	18-5-2012	SB	Rajshahi
Cotton				
Producing cotton as alternative to tobacco	7:05 p.m.	26-01-2012	DM	Dhaka
Collecting the seeds of cotton and its storage	6:10 p.m.	30-12-2012	C	Khulna
Nursing the trees and summer vegetables and planting the cotton seeds	6:25 a.m.	29-7-2012	KS	Rajshahi
Sugarcane				
Early cultivation of sugarcane	7:05 p.m.	07-10-2013	DM	Dhaka
Pest management for sugarcane	6:10 p.m.	22-5-2012	C	Khulna
Nursing the sugarcane in the field	6:05 p.m.	14-02-2012	SB	Rajshahi
Betel leaves				
Remedy for the diseases of betel leaves and nursing it	7:05 p.m.	15-5-2012	DM	Dhaka
Betel cultivation and its importance	6:10 p.m.	28-4-2012	C	Khulna
Nursing and pest management in the plantation of betel leaves	6:25 a.m.	14-6-2012	KS	Rajshahi

Table 2.7 continuing....

Betel nut				
Cultivation of betel nut for economic development	6:10 p.m.	03-7-2012	C	Khulna
Bamboo				
Bamboo and sugarcane cultivation	6:25 a.m.	09-4-2012	KS	Rajshahi
Nursing the bamboo garden	6:10 p.m.	12-4-2012	C	Khulna
Vegetables				
Growing quality seeds for winter- vegetables	7:05 p.m.	20-1-2-13	DM	Dhaka
Nutrients and multiple uses of water spinach (a sort of aquatic vegetable)	7:05 p.m.	19-8-2013	KS	Dhaka
Techniques of producing vegetables	6:25 a.m.	26-11-2012	KS	Dhaka
Advanced cultivation of summer vegetables	6:05 p.m.	19-3-2012	SB	Rajshahi
Growing the plants of winter vegetables	6:10 p.m.	08-9-2012	C	Khulna
Nursing tomato in the summer	6:10 p.m.	08-7-2012	C	Khulna
Ash gourd, snake Gourd, sponse gourd, bottle gourd, pumpkin, bitter gourd cultivation and harvesting onion, garlic, oil seeds and red lentil	6:25 a.m.	07-3-2012	KS	Rajshahi
Pulses				
Cultivation of crops like pulse	6:25 a.m.	21-10-2012	KS	Rajshahi
Cultivation of moth bean (mug dal) in the summer	6:05 p.m.	03-3-2012	SB	Rajshahi
Nursing the chickpea and red lentil (a kind of pulse) in the fields	6:05 p.m.	05-01-2012	SB	Rajshahi
Cultivation of Indian pea and *kheshari* as pulses	6:10 p.m.	01-10-2012	C	Khulna
Seeds				
Special care in producing sugarcane seeds	7:05 p.m.	26-8-2013	DM	Dhaka
Selecting the variety and preparing the seed beds for transplant *aman*	6:10 p.m.	01-5-2012	C	Khulna
Nursing the seed beds of *boro, boro* planting, vegetables and wheat cultivation	6:25 a.m.	05-1-2012	KS	Rajshahi
Pest Management				
Cautions for using pesticides in farm products.	7:05 p.m.	11-3-2013	DM	Dhaka
Pest management in the *boro* field	6:10 p.m.	17-4-2012	C	Khulna
Pest management in mustard field, taking care of mango garden and the diseases of onion	6:25 a.m.	19-01-2012	KS	Rajshahi
Fertilizers				
Importance and techniques of growing organic fertilizers for protecting the fertility of soil	7:05 p.m.	09-6-2012	DM	Dhaka
Using organic fertilizer to preserve soil fertility	6:25 a.m.	07-5-2012	KS	Rajshahi
Preparing fertilizers in the farm and its uses	6:10 p.m.	18-4-2012	C	Khulna
Using fertilizers in a balanced way	6:10 p.m.	06-3-2013	C	Khulna

Table 2.7 continuing...

Irrigation				
Irrigation schedule for vegetable cultivation	7:05 p.m.	24-6-2012	DM	Dhaka
Irrigation in the *boro* field	6:10 p.m.	03-4-2012	C	Khulna
Vegetables, potato and its advance fall, irrigation in the potato fields, using herbicides and so on	6:25 a.m.	01-01-2012	KS	Rajshahi
Herbicides				
Weed management in *aman* (a sort of paddy) field	7:05 p.m.	19-7-2013	DM	Dhaka
Vegetables, potato and its advance fall, irrigation in the potato fields, using herbicides and so on	6:25 a.m.	01-1-2012	KS	Rajshahi
Using herbicides in the fields of winter vegetables	6:10 p.m.	14-12-2012	C	Khulna
Harvesting				
Effectiveness of rice and wheat harvesting machine of BRRI	7:05 p.m.	23-02-2013	DM	Dhaka
Harvesting and storage of potato	6:10 p.m.	28-02-2012	C	Khulna
Harvesting the ginger and turmeric and their storage and preservation	6:05 p.m.	07-01-2012	SB	Rajshahi
Processing, storage and preservation				
Use of farm machineries of Bangladesh Agriculture Research Institute (BARI) for the production and processing of maze	7:05 p.m.	24-2-2013	DM	Dhaka
Boro harvesting and Summer vegetable harvesting and preservation	6:25 a.m.	10-5-2012	KS	Rajshahi
Harvesting and storage of potato.	6:10 p.m.	28-2-2012	C	Khulna
Intercropping and crop diversification				
Benefits of intercropping	7:05 p.m.	31-3-2013	DM	Dhaka
Cultivation of rice after flower cultivation	7:05 p.m.	16-02-2014	DM	Dhaka
Intercropping and nursing the sugarcane and confronting rats in the sugarcane fields	6:25 a.m.	15-02-2012	KS	Rajshahi
Intercropping with potato	6:10 p.m.	03-11-2012	C	Khulna
Marketing				
Helping the farmers in marketing their products	7:05 p.m.	09-02-2013	DM	Dhaka
Harvesting and marketing summer vegetables	6:05 p.m.	10-6-2012	SB	Rajshahi
Modern system of marketing the farm products	6:10 p.m.	19-4-2012	C	Khulna
Multiple and proper uses of agricultural products				
Techniques of cooking vegetables preserving the nutrients	6:05 p.m.	24-4-2012	SB	Rajshahi
The nutrients of potato and its multiple usages	6:10 p.m.	13-4-2012	C	Khulna

Table 2.7 continuing....

Health				
Skin diseases of the farmers and their remedies	7:05 p.m.	16-2-2014	DM	Dhaka
Cultivation of fruit for maintaining the nutrients and health of a farmer's family	7:05 p.m.	01-3-2013	DM	Dhaka
Health of the farmers and his/her family members	6:05 p.m.	01-01-2012	SB	Rajshahi
Cooking the vegetables for feeding the children	6:10 p.m.	20-4-2012	C	Khulna

Note: P = Program, DM = *Desh Amar Mati Amar*, C = *Chashabad*, SB = *Sobuj Bangla*, KS = *Khetkhamar Samachar*

2.5.2.1.1.1.4 Pulses: *Mug* (moth bean), *musur* (red lentil), *kheshari, chola,* chickpea, *maskalai* are the main pulses cultivated and consumed by the farmers of Bangladesh. It has been tried to see whether all the pulses are included in the farm programs of Bangladesh Betar. It is seen that almost all the items of pulses are covered by the farm programs of Bangladesh Betar. There was program on 'Cultivation of crops like pulses' (Table 2.7). This program covers all sorts of pulses. Besides, some programs were broadcast on pulses by name (Table 2.7). Any program has not been seen to be broadcast on red lentil from Bangladesh Betar, Dhaka and Khulna.

2.5.2.1.1.1.5 Fruits: Mango, banana, jackfruit, pineapple, papaya, lichi, guava, melon, lemon are the main fruits of Bangladesh. Most of them are covered by the farm programs of Bangladesh Betar.

2.5.2.1.1.1.6 Oil Seeds: Mustard, *til* (a type of oil-seed), linseed, ground nut, coconut, sunflower, castor, and soybean are the main oilseeds of Bangladesh. Among them mustard, *til*, coconut, soybean and ground nut were broadcast by name.

2.5.2.1.1.1.7 Spices: Chilli, onion, garlic, ginger, turmeric, *elach, daruchini, labanga,* cumin, fenugreek, mace, nutmeg, fennel, bay leaf, black pepper are the spices which are very common in Bangladesh. But chilli, onion, ginger and turmeric are mostly covered by the farm programs of Bangladesh Betar.

2.5.2.1.1.2 Seeds: Good seeds are the prerequisite of good production. Farmers' low quality seeds meet about 95% seed requirement that is considered to be one of the major constraints to crop productivity.[77] So the farmers are to be motivated and educated with relevant technological support for the production and preservation of seeds at the farmers' level so that the farmers can easily use good quality seeds. Bangladesh Betar can help motivating and educating the farmers for this purpose. Here it has been tried to see whether the farm programs encompass seeds as the program topic. It has been seen that Bangladesh Betar makes efforts to motivate and educate the farmers about good seeds and their collection and preservation (Table 2.7).

2.5.2.1.1.3 Pest Management: Balanced use of fartilizer, proper irrigation and use of quality seeds can not ensure sustainable production of crops if the pests are not managed properly. It is estimated that 4.14% of rice yield in Bangladesh is lost every year by different pests.[78] Bangladesh Betar can play a very vital role in motivating and educating the farmers to manage the pests effectively. Here an effort has been made to see whether the farm programs of Bangladesh Betar broadcast any topic related to pest management. It has been seen that pest managenent for crops is one of the most important issues of the farm programs of Bangladesh Betar (Table 2.7).

2.5.2.1.1.4 Fertilizers: More than 50% of the arable lands of Bangladesh are deficient in Nitrogen, Phosphate and Potassium. Organic matter content of soil is much below the critical level of 1.50%.[79] Farmers normally use Urea in recommended doses. But chemical fertilizers are not normally integrated with organic manures. It is thus evident that farmers virtually do not use balanced fertilizers which are necessary for high

[77] Mohammad H. Mondal, "Crop Agriculture of Bangladesh: Challenges and Opportunities," *Bangladesh Journal of Agricultural Research*, Vol. 35, No. 2, June 2010, p. 238.

[78] Mondal, "Crop Agriculture of Bangladesh," P. 238.

[79] Z. Karim, "Accelerating the Growth of Agriculture in Bangladesh," http://books.irri.org/9712201287_content.pdf#page=62, Accessed on 15th February 2014.

productivity.[80] This is why, the farmers should be educated and motivated properly so that they can use balanced fertilizer. Bangladesh Betar can play a vital role in this regard. Here it has been tried to see whether Bangladesh Betar broadcast farm program with a view to educate and motivate to use balanced fertilizers for high production. It has been seen that there were farm programs on fertilizers from all the three stations (Table 2.7).

2.5.2.1.1.5 Irrigation: The efficiency of irrigation in Bangladesh is extremely low. On an average crops use only about 25-30% of irrigation water and the remainder is lost on the way due to faulty irrigation systems and poor on-farm irrigation water management practices.[81] Irrigation with surface water instead of underground water might reduce the vulnerability to hazards of climate change.[82] The farmers of Bangladesh should be educated properly about proper irrigation for cultivation. Efforts are made to educate and motivate the farmers to irrigate their crops properly through the farm programs of Bangladesh Betar (Table 2.7).

2.5.2.1.1.6 Herbicides: Modern weeds control in corn utilizes an integrated program of that includes field selection, crop rotation, crop competition, cultivation and herbicides. Weeds reduce yields by competing with the crop for essential growth factors and they can interfere with harvest and produce seed that is reinvested in the soil seed bank. Yields are usually reduced when weeds are not controlled before the corn is 6 to 8 inches high.[83] The farmers of Bangladesh are to be taught how to use herbicides

[80] Mondal, "Crop Agriculture of Bangladesh," P. 238.

[81] Z. Karim, "Accelerating the Growth of Agriculture in Bangladesh," http://books.irri.org/9712201287_content.pdf#page=62, Accessed on 15th February 2014.

[82] Mondal, "Crop Agriculture of Bangladesh," P. 238.

[83] Thomas J. Monaco, Stephen C. Weller and Floyd M. Ashton, *Weed Science: Principles and Practices*, 4th ed. (New York: John Wiley & Sons, Inc., 2002), p. 417.

properly. And it is seen in this study that Bangladesh Betar broadcasts farm programs regarding the use of herbicides (Table 2.7).

2.5.2.1.1.7 Harvesting: In Bangladesh as most of the farmers are not educated properly, during harvesting their crops they lose a remarkable portion of their crops. The total average cumulative loss in post-harvest rice operation from harvesting to milling was 13.52%.[84] So, the farmers should be trained properly on when and how to harvest and their post-harvest duties. In this regard Bangladesh Betar plays a vital role here through its farm programs (Table 2.7).

2.5.2.1.1.8 Processing, Storage and Preservation: The economy of Bangladesh faces a great loss in the field of agriculture due to poor post-harvest processing of agricultural products. In 1989-90 post-harvest losses of rice, wheat, sugarcane, pulses, oil-seeds, vegetables, fruits and root-crops due to inadequate processing and preservation reached 4.96 million metric ton. These losses were valued in TK. 2895.90 million (US$ 503 million).[85] The farmers need to be educated about the processing, storage and preservation of agricultural products. Bangladesh Betar has been playing an important role here through its farm programs (Table 2.7).

2.5.2.1.1.9 Intercropping and Crop Diversification: Intercropping means cultivation of different crops at the same time on a single piece of land. Crop diversification means cultivation of different crops on the same land by rotation. Intercropping and crop

[84] Mohammad A. Baqui, "Post-harvest processing, handling and preservation of agricultural products: Its present status and future challenges in Bangladesh," http://www.egfar.org/egfar/lfm /gphi_ documents /02_Region_specific_ documents/D_Asia_and_the _Pacific_Islands_ %28APAARI% 29/02_ Background_Documents/01_General_issues /D-2-001-001-D6_Ph_in_Bangladesh.pdf, Accessed on14th February 2014.

[85] Mohammad A. Baqui, "Post-harvest processing, handling and preservation of agricultural products: Its present status and future challenges in Bangladesh," http://www.egfar.org/egfar/lfm/gphi_ documents/02 _Region_specific_ documents/ D_Asia_and_the_Pacific_Islands_% 28APAARI%29/02_ Background_Documents/01_General_issues/D-2-001-001-D6_Ph_in_Bangladesh.pdf, Accessed on14th February 2014.

diversification are very important for Bangladesh for food security and soil fertility. Bangladesh Betar is trying to educate and motivate the farmers for adopting intercropping and crop diversification through its farm programs (Table 2.7).

2.5.2.1.1.10 Marketing: Most of the farmers of Bangladesh are of marginal, small and medium categories. Consequently, they do not deserve the bargaining power to have a rational price of their agricultural products as they cannot form their own association or co-operative societies. They are forced to sell their products at low prices to the intermediaries.[86] The farmers need to be taught how to market their products in a proper way. Bangladesh Betar plays an important role to teach the farmers how to market their products properly (Table 2.7).

Product price also belongs to marketing activities. On every Thursday from *Krishi Samachar* (a farm program) weekly market prices of different important farm products of different important cities and towns of Bangladesh are provided so that the farmers can have rational prices for their produces (Table 2.8).

Table 2.8 Product price broadcast from Bangladesh Betar

District	Markets	Forty Kilos in Taka					
		Boro	Onion	Garlic	Green chilli	Brinjal	Bean
Rajshahi	Keshorhat	720-740	2200-2300	1900-2000	800-900	1000-1200	1000-1050
Tangail	Modhupur	790-795	2480-2560	2560-2640	2160-2240	1600-1680	
Foridpur	Kaderdi	700-720	2000-2200	2200-2300	1600-1800	560-580	800-850
Jessore	Barinagar	670-680	2160-2200	1960-2000	1080-1120	960-1000	600-640
Khulna	Kopilmoni	750-780	2200-2280	2200-2280	1200-1240	960-1000	700-760
Moymansim	Nandail	720-730	2260-2300	2340-2400	1200-1250	1000-1200	

Source: Three-month program schedule of Farm Broadcast Cell, Bangladesh Betar, Dhaka

2.5.2.1.1.11 Multiple and Proper Usages of Agricultural Products: Maximum uses of a product ensure its minimum waste. To be effective the farm program must deal with

[86] Mondal, "Crop Agriculture of Bangladesh," p. 239.

the proper uses of the farm products. It has been seen there were some programs based on multiple and proper usage of the farm products (Table 2.7).

2.5.2.1.1.12 Health: The health of the farmers and their family members is prerequisite for sustainable growth of agriculture. Bangladesh Betar broadcasts programs on nutrients of different agricultural products and different ways of preparing the food preserving the nutrients and food value of the products (Table 2.7).

2.5.2.1.1.13 Weather: Every day the farmers along with the other listeners are informed of the weather conditions several times by all the radio stations.

In pursuance of the above discussion it can be said that the farm programs cover almost all subjects and topics of crop sectors with a very negligible deviation.

2.5.2.1.2 Livestock Sector: In case of livestock the following types of indicators have been set to analyze the programs:

a) Types of farm,
b) Farm management,
c) Prevention,
d) Medication, and
e) Breeding.

2.5.2.1.2.1 Types of Farms: Dairy, cattle, goat, sheep, chickens (broiler/layer/ indigenous fowls), ducks and quail farm mainly belong to the livestock of Bangladesh. Here it has been seen that all types of farms are covered by the farm programs of Bangladesh Betar (Table 2.9).

Table2.9 Subject and topics of livestock sector broadcast from Bangladesh Betar

Subjects		Topics	Date	Time	P
Types of farm	Dairy	Being self-employed through dairy farm	24-7-2013	7:05 p.m.	DM
	Cattle	Nursing the cattle in the rainy season	02-10-2013	7:05 p.m.	DM
	Buffalo	Artificial insemination (AI) in buffalo	20-02-2013	7:05 p.m.	DM
	Goat	Treatment of chicken pox and P.P.R. of goat and sheep	26-11-2012	6:05 p.m.	SB
	Sheep	Rearing sheep in saline affected area.	25-02-2013	6:10 p.m.	C
	Chickens	Role of women in farming the layer at home	05-6-2012	6:05 p.m.	SB
	Ducks	Rearing ducks in the rural environment.	04-9-2013	7:05 p.m.	DM
	Quail	The process of rearing quail and its economic importance	30-7-2012	6:10 p.m.	C
	pigeon	The economic value of farming pigeon and its management	24-9-2012	6:10 p.m.	C
Farm Management	Housing	Advance technology for rearing indigenous chick beneath the feather	03-4-2013	7:05 p.m.	DM
	Feeding	Nursing the cows and their food management	24-02-2012	6:05 p.m.	SB
	Bio-security	Bio-security in the chicken farm	06-8-2012	6:10 p.m.	C
Prevention	Prevention	Vaccination program in the rainy season for goat and sheep	28-8-2013	7:05 p.m.	DM
	Do	Ways of keeping the ducks and chickens healthy	19-8-2012	6:05 p.m.	SB
	Do	Duties and responsibilities of the farmers to protect and control bird-flu	03-9-2012	6:10 p.m.	C
Medication	Medication	Foot and mouth diseases of cattle in the rainy season and its treatment	31-7-2013	7:05 p.m.	DM
	Do	*Ranikhet* (New castle disease) of chickens and its treatment	15-02-2012	6:05 p.m.	SB
	Do	HS of cattle and its treatment	24-12-2012	6:10 p.m.	C
Breeding	Breeding	Artificial insemination (AI) in Buffalo	20-02-2013	7:05 p.m.	DM
	Do	Artificial insemination (AI) in cattle	06-12-2012	6:05 p.m.	SB
	Do	Inbreeding, its drawbacks and other responsibilities	16-7-2012	6:10 p.m.	C

Note: P = Program, DM = *Desh Amar Mati Amar*, C = *Chashabad*, SB = *Sobuj Bangla*, KS = *Khetkhamar Samachar*

2.5.2.1.2.2 Farm Management: Farm management encompasses housing, feeding and bio-security of the animals and birds. And all the issues are covered by the farm programs (Table 2.9).

2.5.2.1.2.3 Prevention: Prevention means taking steps before the animals or birds become sick. Nursing the animals and birds in proper ways and vaccination are the best measure for preventing the diseases of livestock. And all these issues are covered by the farm programs (Table 2.9).

2.5.2.1.2.4 Medication: Medication refers to the treatment of the diseases of livestock after being sick. The farm programs of Bangladesh Betar cover diseases of livestock and their treatment (Table 2.9).

2.5.2.1.2.5 Breeding: Breeding is very important in case of livestock. It is covered by the farm programs of Bangladesh Betar (Table 2.9).

It can be said that the farm programs of Bangladesh Betar cover all aspects of livestock. So in respect of contents the farm programs are satisfactory.

2.5.2.1.3 Fisheries Sector

To analyze the farm programs encompassing fisheries the following indicators have been set:

a) Types of farms
b) Farm management, and
c) Medication

2.5.2.1.3.1 Types: Carp, *golda, bagda,* talapia and indigenous category are the main types of fish in Bangladesh. Here it has been tried to see whether all types of fishes are covered by the farm programs of Bangladesh Betar. It has been seen that all types of fish farming are covered by the farm programs of Bangladesh Betar (Table 2.10). It is also seen that programs on *golda* and *bagda* are covered by Bangladesh Betar, Khulna but, not by Bangladesh Betar, Rajshahi and Dhaka.

Table 2.10 Subjects and topics of fisheries sector broadcast from Bangladesh Betar

Subjects		Topics	Date	Time	P
Types of Fish	Hilsha	Dos and don'ts for saving *jatka* (Juvenile of hilsha)	15-1-2012	6:25 a.m.	KS
	Carp	Farming the fish of carp category.	19-5-2012	6:25 a.m.	KS
	Golda and *bagda*	Farming the shrimps and lobster (*bagda* and *golda*)	02-5-2012	6:10 p.m.	C
	Tilapia	Methods of providing foods for fishes like carp and tilapia	03-3-2013	6:10 p.m.	C
	Indigenous	Protecting the indigenous fishes from extinction	04-8-2012	6:05 p.m.	SB
Farm management	Preparation	Management of the ponds of fish in the winter	16-01-2012	6:05 p.m.	SB
	Food	Providing supplementary food for fish in the pond	28-01-2012	6:05 p.m.	SB
	Breeding	Producing larvae and the profitability of fish farming	28-4-2012	6:05 p.m.	SB
	Nursing	Nursing the fish in the rainy season	01-8-2012	6:10 p.m.	C
	Production	Ways of increasing the production of fish in the pond	27-5-2012	6:05 p.m.	SB
Medication	Medication	Diseases of fish and their remedies and antidotes	03-11-2012	6:25 a.m.	KS
	Do	Treatment of putrefaction of tails and other body parts of fish	30-12-2012	6:05 p.m.	SB
	Do	Managing the diseases of lobster	26-9-2012	6:10 p.m.	C

Note: P = Program, DM = *Desh Amar Mati Amar*, C = *Chashabad*, SB = *Sobuj Bangla*, KS = *Khetkhamar Samachar*

2.5.2.1.3.2 Farm Management: In case of preparing farm programs on fish farming Bangladesh Betar emphasizes on farm management. For managing the farm five core issues are to be considered- (i) Farm preparing, (ii) Food, (iii) Breeding, (iv) Production and (v) Nursing. It has been seen that the farm programs cover all these five issues (Table 2.10).

2.5.2.1.3.3 Medication: A fish farmer must have proper knowledge of medication of the diseases of fish. Bangladesh Betar tries to teach the farmers how to treat the diseases of the fish (Table 2.10).

Besides these, the farm programs of Bangladesh Betar broadcast programs on some other issues related to fish farming, such as marketing and exporting, mixed farming, farm diversification and so on.

2.5.2.2 Experts' and Farmers' Opinion on Programs' Resemblance to the Need

Based on the analysis of the contents of the farm programs of Bangladesh Betar, it can be concluded that the farm programs cover almost all the sectors of agriculture of Bangladesh and the topics were according to the seasonal demands of the farmers. On this issue the experts of related fields and the listeners of the farm programs expressed their opinions which are as follows:

Table 2.11 Distribution of opinions on seasonal demands

Respondents	Variables	Frequency (*n*)	Percentage (%)
Experts	Almost always seasonal	17	60.70
	Always seasonal	11	39.30
	Total sample (*n*)	28	100.00
Farmers (who listen to the farm programs)	At times seasonal	1	3.20
	Almost always seasonal	8	25.80
	Always seasonal	20	64.50
	No comment	2	6.50
	Total sample (*n*)	31	100.00

The researcher selected 28 experts of different sectors of agriculture (crop, livestock, and fisheries) and executives of Bangladesh Betar and they (experts) were asked to express their opinions on the similarity among the topics and the seasonal demands of the farmers. Among them 60.70% agreed that the topics were always according to the seasonal demands of the farmers with very few exceptions (Table 2.11). An expert's opinion was that most of the times the topics resemble the seasonal demands of the farmers with the exception during any outbreak.[87] Nearly 39% of the

[87] Interview with Shukesh Badhy, (Veterinary Surgeon, Economic Wing, Department of Livestock Services, Dhaka), interviewed by the researcher, Dhaka, 9th December 2014.

experts went along with the topics to be hundred percent same to the seasonal needs of the farmers (Table 2.11).

On the other hand; among the farmers 64.50% told that the topics are always according to their seasonal demands and another 25.80% of the farmers told that the topics almost always resemble their seasonal demands.

2.5.3 Broadcasting Schedule

Broadcast schedule means program schedule that is, when the program will be aired. To be effective the farm programs should be broadcast at the time when most of its target listeners can listen to the programs and in such a way that after listening to the programs the listeners should feel it to be very significant to their farming. So, to be effective a program schedule should be able to answer to four 'W's- **W**hen it should be broadcast, **W**hat should be broadcast, **W**hich sector should be emphasized and **W**hat frequency should be maintained. In case of preparing an effective program schedule to answer to these four questions the following factors are to be considered:

a) Convenience: The time is fixed in such a way that the program can be broadcast at the farmers' (target listeners) convenience. The policy makers of Bangladesh Betar have selected 'early morning', 'late afternoon' and 'night' as the period when most of the farmers are expected to spend their leisure.

b) Needs and Demands of the Farmers: During the farming the farmers face some problems which need to be solved. The programs are scheduled according to the needs and demands of the farmers.

c) Seasons: The topics of the programs are selected based on the cropping seasons. Bangladesh is a country of six seasons. Along with the seasonal changes there

occurred some changes in crop, livestock and fish farming. In order to maintain the farmers' fitness to cope with the seasonal changes the program topics are scheduled accordingly.

d) Sectors ratio: The weekly broadcasting hour is allocated among the agricultural sectors based on the size of the sectors. So that a rational distribution of broadcasting hour can be ensured. As crop is the largest sector, it is emphasized more than other two sectors and program schedule is developed accordingly.

2.5.3.1 Existing Program Schedules

In pursuance of the above principles the schedules developed for all the farm programs are as follows:

Table 2.12 Time schedule of the farm programs of Bangladesh Betar

Programs	Periods	Time	Station
Krishi Samachar	Early Morning	6:25 a.m.	Dhaka
Desh Amar Mati Amar	Night	7:05 p.m.	Dhaka
Krishi Samachar	Early Morning	6:25 a.m.	Khulna
Chashabad	Late Afternoon	6:10 p.m.	Khulna
Khetkhamar Samachar	Early Morning	6:25 a.m.	Rajshahi
Sobuj Bangla	Late Afternoon	6:05 p.m.	Rajshahi

Source: Summer fixed-points, *Betar Bangla*, Bangladesh Betar, Vol. Baishakh-Jaistha 1419.

2.5.3.1.1 Program Schedule of Bangladesh Betar, Dhaka

Desh Amar Mati Amar: In order to incorporate all the sectors of agriculture a weekly and monthly schedule is maintained and accordingly the whole program is arranged. The program schedule is as follows:

a) Farm related letters from farmers are answered on Saturday, Tuesday and Thursday.

b) Short dramas on crops, fisheries and livestock are broadcast on every Sunday, Thursday, Wednesday and Friday.

c) Programs on livestock are on the second, third and fifth Wednesday of the month.

d) Program for housewives is on the first Wednesday of the month.

e) Inter-radio farm program is broadcast on the fourth Wednesday of the month. The Farm Broadcast Cell invites regional farm programs from other regional stations of their own and among the programs the best one is broadcast and relayed by the other regional stations.

f) Program on fisheries is broadcast on every Thursday.

g) Farm news is on Sunday, and

h) Farmer's health is on Sunday.

It is seen that every month four to five days are for the programs on fisheries and two to three days for livestock. That means on an average six to eight days are fixed for fisheries and livestock. Besides, during inter-radio program on the fourth Wednesday and *Mohila Asor* on the first Wednesday there is a chance for livestock and fisheries to be discussed about.

2.5.3.1.2 Program Schedule of Bangladesh Betar, Khulna

I) ***Krishi Samachar*****:** It is a daily discussion program. It is broadcast at 6:25 a.m. It is a script based program. The script is written based on the problems recently faced by the farmers or which are likely to occur in the farms and it is provided by the AIS.

II) ***Chashabad*****:** In order to incorporate all the sectors of agriculture the daily program *Chashabad* is scheduled in the following ways:

a) Letters from the farmers are answered on Saturday.

b) Phone-in program is arranged six days in a week.

c) *Chashabad: Mohila Asor* is on Friday. On this day the whole program is designed for the female though the information is beneficial for the male also.

d) Programs on crops are on Saturday, Sunday, Tuesday and Thursday.

e) Program on livestock is on every Monday.

f) Program on fisheries is on every Wednesday.

2.5.3.1.3 Program Schedule of Bangladesh Betar, Rajshahi

I) *Khet Khamar Samachar*: It is a daily discussion program. It is broadcast at 6:25 a.m. It is a script based program. The script is written based on the problems recently faced by the farmers or which are likely to occur in the farms and it is provided by the AIS and other concerned departments. The program is broadcast as per the following schedule:

a) Program on crops is on Sunday, Monday, Tuesday, Wednesday and Thursday.

b) Information on fisheries and livestock is on Friday and Saturday.

II) *Sobuj Bangla*: In order to incorporate all the sectors of agriculture the daily program *Sobuj Bangla* is scheduled in the following ways:

a) Letters from the farmers are answered on every Wednesday.

b) Information on crops is broadcast thrice a week.

c) Information on livestock is broadcast once a week.

d) Information on fisheries is broadcast once a week.

e) Two phone-in programs (one is for crops and another one is for fisheries and livestock) take place at fort-nightly interval.

f) On Tuesday the program is designed for the female.

The schedules of all the programs are developed in such a way that all the sectors and subjects are covered by the farm programs and so that the farmers can avail up the programs.

2.5.3.2 Experts' and Farmers' Opinions on Existing Program Schedule

Most of the experts' opinions were very much in favor of the existing farm program schedule (Table 2.13). Some experts added that evening (late-afternoon) and night are the perfect time for broadcasting farm program as, according to them, most of the farmers have leisure to enjoy the farm programs during these periods.

Table 2.13 Distribution of opinions on program schedule

Respondents	Variables	Frequency (*n*)	Percentage (%)
Experts	One is perfect (night)	5	17.86
	Two are perfect (Afternoon/evening and night)	8	28.57
	All are perfect (Morning, afternoon/evening, night)	15	53.57
	Total sample (*n*)	28	100.00
Farmers (Listeners of FP)	Afternoon/Evening is perfect	2	6.45
	Night is perfect	29	93.55
	Total sample (*n*)	31	100.00

Note: FP refers to the farm programs of Bangladesh Betar.

About 54% of the experts consider the existing broadcasting schedule to be perfect (Table 2.13). According to an expert the broadcasting schedule of the farm programs of Bangladesh Betar is much more perfect than those of other media.[88] Many experts objected to the broadcasting of farm program in the morning as, according to them, the farmers remain very busy at this time.

[88] Interview with Dr. Md. Zahangir Alam, (Deputy Director, Mass Communication, Agriculture Information Service, Khamarbari, Dhaka.), interviewed by the researcher, Dhaka, 7th March 2014.

But radio, according to the experts of Bangladesh Betar, has a competitive advantage and that is its portability. Radio is a portable media and can be listened during the busiest period in the field and that is why, the morning schedule is not a problem at all.[89] On the other hand, almost all the farmers (93.55%) for whom the programs are developed have told that at night they are free and so, 'night' is the perfect schedule for them. Hence, there is a great mismatch between the farmers' choice and the existing time schedule of Bangladesh Betar.

2.5.4 Program Duration

The duration of the farm programs are as follows:

Table 2.14 The duration of the farm programs of Bangladesh Betar

Programs	Stations	Time span	Duration (minutes)
Desh Amar Mati Amar	Dhaka	7:05 p.m. - 7:30 p.m.	25
Krishi Samachar	Khulna	6:25 a.m. - 6:30 a.m.	05
Chashabad	Khulna	6:10 p.m. - 6:50 p.m.	40
Khet Khamar Samachar	Rajshahi	6:30 a.m. - 6:35 a.m.	05
Sobuj Bangla	Rajshahi	6:05 p.m. - 6:50 p.m.	45
Total			120

Source: Summer fixed-points, Betar Bangla, Bangladesh Betar, Vol. Baishakh-Jaistha 1419.

The listeners of Rajshahi and Khulna Betar can listen to the farm program of Dhaka Betar, *'Desh Amar Mati Amar'*. So a farmer of Khulna can listen to the farm program for 70 minutes (*Desh Amar Mati Amar*-25 minutes + *Krishi Samachar*-05 minutes + *Chashabad*-40 minutes) daily. On the other hand, a farmer of Rajshahi can listen to the farm program for 75 minutes (*Desh Amar Mati Amar*-25 minutes + *Khet Khamar Samachar* -05 minutes + *Sobuj Bangla*-45 minutes) daily. During the KII 50% of the experts considered the existing program duration to be perfect (Table 2.15). The opinion of only 17.86% of the experts was that the duration of the farm programs must

[89] Interview with Md. Mominur Rahman, (Deputy Regional Director, Bangladesh Betar, Khulna), interviewed by the researcher, Khulna, 2nd March 2014.

be increased. On the other hand, 51.61% of the farmers who listen to the farm programs suggest that the duration of the programs must be increased (Table 2.15).

Table 2.15 Distribution of experts' and farmers' opinions on duration

Respondents	Variables	Frequency (*n*)	Percentage (%)
Experts	Must be increased	5	17.86
	Good to be increased	9	32.14
	No need to be increased	14	50.00
	Total sample (*n*)	28	100.00
Farmers (who listen to FP)	Must be increased	16	51.61
	Should be increased	2	6.45
	No need to be increased	11	35.49
	No comment	2	6.45
	Total sample (*n*)	31	100.00

Note: FP refers to the farm programs of Bangladesh Betar.

According to an expert the duration may remain as it is but there should be repetition of programs.[90]

2.5.5 Formats of the Farm Programs

There are some formats of radio program- magazines, drama, song, short drama (*jibontika*), phone-in, answer to the letters, discussion, talk, stage (*asor*), interview and so on. In case of selecting a format of a program the basic things which are to be considered are as follows:

a) Literacy of the listeners,

b) Age of the listeners,

c) Program materials, and

d) Needs of the listeners.

As the listeners of the farm programs are the farmers of Bangladesh who are not highly educated and as the materials of the program are not of serious type, magazine in the

[90] Interview with Shobnom Mostary, (Research Officer, Department of Fisheries, Dhaka), interviewed by the researcher, Dhaka, 15th December 2013.

form of stage (*asor*) is selected for the long programs (*Desh Amar Mati Amar*, *Chashabad* and *Sobuj Bangla*) of all the stations. This magazine consists of talk, song, interview, phone-in, answer to the letters from the farmers, *asor* and so on.

Krishi Samachar and *Khet Khamar Samachar* are very short programs of only 05 minutes. Here the farmers are given an instruction on current agricultural issues early in the morning just before starting their regular works. So, the program is broadcast in the form of 'discussion'.

The addition of 'phone-in program' is a great achievement because any farmer facing any problem can make a phone-call to the moderator of the farm program during the broadcasting hour and can have an expert solution of his or her problem. This is why; the farm program can overcome most of its laps and gaps through the 'phone-in program'.

2.5.5.1 Experts' Opinion on Formats

About the formats of the farm programs the experts expressed their opinions. Around half of the experts (46.43%) consented that all the existing formats of the farm programs are perfect (Table 2.16).

Table 2.16 Distribution of experts' opinions on formats of farm programs

Variables	Number of farmers (*n*)	Percentage (%)
Only one is perfect	6	21.43
More than one are perfect	9	32.14
All are perfect	13	46.43
Total	28	100.00

Through KII it is known that 78.57% of the experts supported 'Phone-in program' as the most time befitting. Some experts said that the listeners' (farmers) involvement is to be increased. The successful farmers should be invited in the program

and he or she should be made talk to the farmers about the solutions of the problems faced by the farmers for their inspiration. Some experts said that throughout the day there might be frequent announcement on different burning issues of agriculture for example, "Do not eat half-bitten fruits to avoid *Nipah* virus."[91]

2.5.5.2 Farmers' Opinion on the Formats of the Farm Programs

The farmers who listen to the farm programs of Bangladesh Betar among the sampled 465 farmers from Rajshahi and Khulna regions were asked to express their opinion on the formats of the farm programs. There were 31 farmers who listen to the programs among the respondents. Among them, a large number of farmers (41.93%) who listen to the farm programs prefer 'phone-in program' (Table 2.17).

Table 2.17 Distribution of the farmers' opinion on program formats

Formats	Number of farmers (*n*)	Percentage (%)
Answering letters	1	3.23
Asor	8	25.81
Discussion	3	9.68
Drama	2	6.45
Magazine	2	6.45
Phone-in	13	41.93
No comment	2	6.45
Total	31	100.00

The farm programs like *Chashabad, Sobuj Bangla* and *Desh Amar Mati Amar* consist of all the formats chosen by the farmers. As the programs are very limited, an effort has been made to combine almost all the choices of the farmers in a single program which is called magazine.

[91] Interview with Jubaidul Kabir, (Veterinary Surgeon, Leave, Department of Livestock Services, Dhaka), interviewed by researcher, Rajshahi, 11th March 2014.

2.6 Conclusion

After a thorough discussion it can be concluded that the farm programs designed and broadcast from Bangladesh Betar deserve the qualities of a good program enough to have beneficial effects on the agriculture and the farming communities of Bangladesh. Yet, the concerned authority of Bangladesh Betar needs to work on the perfection of the farm programs incorporating the suggestions given by the experts of different departments of agriculture and coping with the choice of the farmers. The very loop-holes in the farm programs pointed out by the experts and the farmers should be alleviated to ensure the effectiveness of the farm programs.

CHAPTER THREE

FARMERS' ACCESS TO THE FARM PROGRAM AND ITS EFFECTIVENESS

3 Introduction

The effectiveness of farm programs of Bangladesh Betar depends on the extent to which Bangladesh Betar has been able to convey the information of the modern technologies to the farmers. This is because; one of the main objectives of the farm programs of Bangladesh Betar is to build awareness of the modern agricultural technologies among the farmers; and being aware of the technologies is the prerequisite for the adoption of these technologies which is directly related to the development of agriculture and the farming communities.

Farmers can have their required information from two types of sources: (i) profit oriented source, and (ii) non-profit oriented sources. According to the cultural studies theory the social elites (profit oriented sources) who operate media to earn profits and exercise influence in society may benefit from the information need of the farmers.[92] The farmers may be exploited thereby.

On the other hand, Bangladesh Betar (one of the non-profit organizations) has been trying to provide the farmers with the information of modern technologies. The farmers also use the sources which are cost effective, easy to access and convenient to them. The farmers have many alternatives to them. Among the alternatives they will choose the media based on their ability to give the right kind of information to the right

[92] Stanley J. Baran and Dennis K. Davis, *Mass Communication Theory: Foundation, Ferment and Future*, 6th ed. (Boston: Wadsworth, Cengage Learning, 2010), p. 212.

people in the right way at the right time.[93] Right information may not be received by the farmers if it is not disseminated at the right way and at the right time. According to the market oriented management philosophy a defective product or service or information can be made accepted to the target group if substantial selling and promotion efforts are undertaken.[94] On the other hand, the most competent product or service may lose its market share if there is deficiency in proper market assessment and promotional activities. It is very difficult to retain the existing market share and more difficult is to regain which is lost ever.

A study in 1992 revealed that radio (Bangladesh Betar) was used as information source along with other media where it was ranked 4th and TV at that time was ranked 15th.[95] In another study in 1999 radio was ranked 1st of all the electronic mass media and among all the media it was ranked 4th where TV was 8th.[96] In 2001 another study showed that as mass media radio, TV and poster were mostly used by the farmers in obtaining information about chemicals use and were ranked 1st, 2nd and 3rd respectively.[97]

In another literacy survey report made in 2010 it was seen that 2.82% of the inhabitants of Bangladesh aged five years and over listened to the radio programs daily for education purposes where daily viewers of TV were 13.87% of the inhabitants.[98]

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[93] M. A. Kashem and A. Halim, "Use of Communication Media in the Transfer of Technologies to Farmers: A Farm Level Study." *Research Monograph* No.2. Department of Agricultural Extension Education, BAU, Mymenshing, p. 1.

[94] Philip Kotler and Gary Armstrong, *Principles of Marketing,* 12th ed. (New Jersey: Prentice-Hall, 2008), p. 10.

[95] M. A. Kashem, A. Halim and M. Zulfikar Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies- A Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development,* Vol. II, No. 1, July, 1992, p. 105.

[96] M. A. Kashem and S. K. Poddar, "Communication Behaviour of Mehersagar Banana Growers," (Mymensingh: Bangladesh Agricultural University, 1999), p. 94.

[97] M. A. Kashem and M. S. Islam, "Information Sources Used by Farmers Regarding the Use of Agro-Chemicals," *Bangladesh Journal of Extension Education,* Vol. 13, No. 1 & 2, 2001, p. 74.

[98] Report on Bangladesh Literacy Survey, 2010, BBS, June, 2011, p. ix, http://www.bbs.gov.bd/webtestapplication/userfiles/image/Survey%20reports/Bangladesh%20Literacy%20Surver%202010f.pdf, Accessed on 10th July 2013.

That means, radio has already lost its position; but to what extent? Does the information broadcast through Bangladesh Betar reach the farmers? It is subject to the effectiveness of the farm programs of Bangladesh Betar and Bangladesh Betar itself. In this chapter an effort has been made to examine the effectiveness of the farm programs of Bangladesh Betar in respect of their ability to reach the target listeners, the farmers of Bangladesh.

3.1 Results and Discussions

3.1.1 Access to the Farm Programs of Bangladesh Betar

This study has revealed that 2.37% of the respondents every day listen to the farm programs of Bangladesh Betar. Regular and irregular listeners total only 6.67% (Table 3.1).

Table 3.1 Distribution of the farmers by their FP listening habit (all areas and sectors)

Variables	Number of farmer (*n*)	Percentage (%)	Cumulative percentage (%)
Every day listens to the farm programs	11	2.37	2.36
Listens to the farm programs once or twice a week	9	1.93	4.30
Listens to the farm programs once or twice a month	11	2.37	6.67
Never listens to the farm programs	434	93.33	100.00
Total	465	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

A previous study in 1995 showed that 45% of the Bangladeshis were used to listening to the programs of Bangladesh Betar.[99] In another study in 1999 it was seen that 22.39% of the farmers of Bangladesh learned about scientific ways of cultivation by means of electronic mass media.[100]

[99] *The Daily Bhorer Kagoj*, Dhaka, 12 June 1995, pp.1 & 8, Cited in *"Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh"* (PhD dissertation, IBS, RU, Bangladesh).

[100] Andrew Alak Kumar Dewari, *"Mass Media and the Growth of Agriculture with Reference to Principal Crops in Bangladesh"* (PhD dissertation, IBS, RU, Bangladesh), p. 102.

In another literacy survey report made in 2010 it was seen that 34.58% of the inhabitants of Bangladesh aged five years and over listened to the radio programs for education purposes.[101] The farm programs of Bangladesh Betar are also educative programs. But the finding (only 6.67% listens to the farm programs) of this research is not even close to the result of the literacy survey report of 2010 of Bangladesh Government and other previous surveys. The fact is that the number of listeners of farm programs of Bangladesh Betar has decreased by a great number.

3.1.1.1 Region-wise Access

This study has also revealed that the decreasing trend of the listeners of farm programs varies from region to region. There are more listeners of farm programs in Khulna region than in Rajshahi region. In Khulna region there are 2.71% more listeners of farm programs than in Rajshahi region. In Khulna region 8.25% of the farmers listen to the farm programs. On the other hand, in Rajshahi region 5.54% of the farmers listen to the farm programs of Bangladesh Betar (Table 3.2).

Table 3.2 Region-wise distribution of the farmers by their listening habit

Area	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Khulna	Every day listens to the FPs	7	3.61	3.61
	Listens to the FPs once or twice a week	2	1.03	4.64
	Listens to the FPs once or twice a month	7	3.61	8.25
	Never listens to the FPs	178	91.75	100.00
	Total	194	100.00	
Rajshahi	Every day listens to the FPs	4	1.48	1.48
	Listens to the FPs once or twice a week	7	2.58	4.06
	Listens to the FPs once or twice a month	4	1.48	5.54
	Never listens to the FPs	256	94.46	100.00
	Total	271	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

[101] Report on Bangladesh Literacy Survey, 2010, BBS, June, 2011, p. ix, http://www.bbs.gov.bd/webtestapplication/userfiles/image/Survey%20reports/Bangladesh%20Literacy%20Surver%202010f.pdf, Accessed on 10th July 2013.

3.1.1.2 Sector-wise Access

The research findings exposed that the number of listener of farm program varies from sector to sector of agriculture. In the crop sector 17 farmers out of 272 respondents that is, 6.25% of the crop farmers listen to the farm programs of Bangladesh Betar. In the fisheries sector 6.78% of the farmers listen to the farm programs of Bangladesh Betar and in the livestock sector 8% of the farmers listen to the farm programs of Bangladesh Betar. Among the crop farmers more farmers (9.87%) of Khulna listens to the farm programs of Bangladesh Betar than those (4.71%) of Rajshahi (Table 3.3). In Khulna 50% of the farmers (9.87%) who listen to the farm programs spend on an average less than 3 minutes daily for listening to the farm programs. On the other hand in Rajshahi region 55.55% of the farmers (4.71%) who listen to the farm programs spends on an average less than 3 minutes daily for listening to the farm programs of Bangladesh Betar.

Table 3.3 Distribution of the farmers by their listening habit (crop sector)

Area	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Khulna	Every day listen to the FPs	5	6.17	6.17
	Listen to the FPs once or twice a weak	1	1.23	7.40
	Listens to the FPs once or twice monthly	2	2.47	9.87
	Does not listen to the FPs	73	90.13	100.00
	Total	81	100.00	
Rajshahi	Every day listen to the FPs	2	1.05	1.05
	Listen to the FPs once or twice a weak	5	2.61	3.66
	Listens to the FPs once or twice monthly	2	1.05	4.71
	Does not listen to the FPs	182	95.29	100.00
	Total	191	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

The same situation prevails in fisheries sector. In the fisheries sector 5.26% of the farmers of Rajshahi region listens to the farm programs whereas in Khulna region 7.50% of the respondents listens to the farm programs of Bangladesh Betar (Table 3.4).

Table 3.4 Distribution of the farmers by their listening habit (fisheries sector)

Area	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Khulna	Listen to the FPs once or twice a weak	1	1.25	1.25
	Listens to the FPs once or twice monthly	5	6.25	7.50
	Does not listen to the FPs	74	92.50	100.00
	Total	80	100.00	
Rajshahi	Every day listen to the FPs	1	2.63	2.63
	Listens to the FPs once or twice monthly	1	2.63	5.26
	Does not listen to the FPs	36	94.74	100.00
	Total	38	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

Though in Khulna region there are more farmers who listen to the farm programs yet there is no regular listener of farm programs in the fisheries sector. But in Rajshahi region 2.63% of the listeners listen to the farm program regularly. Among the livestock farmers the result is totally different. In livestock sector 9.52% and 6.06% of the respondents in Rajshahi and Khulna respectively listen to the farm programs (Table 3.5).

Table 3.5 Distribution of the farmers by their listening habit (livestock sector)

Area	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Khulna	Every day listen to the FPs	2	6.06	6.06
	Does not listen to the FPs	31	93.94	100.00
	Total sample	33	100.00	
Rajshahi	Every day listen to the FPs	1	2.38	2.38
	Listen to the FPs once or twice a weak	2	4.76	7.14
	Listens to the FPs once or twice monthly	1	2.38	9.52
	Does not listen to the FPs	38	90.48	100.00
	Total sample	42	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

In respect of the number of listeners among all the sectors livestock is ranked 1st in listening to the farm programs followed by the fisheries sector. The crop farmers listen to the farm programs the least. But in respect of the minutes spent for listening farm programs daily the fisheries sector stands last because, there is none who spends

25 minutes daily for listening to the farm programs. In the crop sector 23.53% of the farmers who listen to the farm programs spend 25 minutes daily for listening to the farm programs. In the livestock sector 66.67% of the farmers who listen to the farm programs spend 25 minutes daily for listening to the farm programs. So, the livestock sector is ranked 1st followed by crop sector. While discussing with the farmers the researcher has seen that for the nature of their jobs the livestock farmers are used to spend more time at home and their work load is comparatively less than other types of farmers, especially the crop farmers. More time at home and less work load may stimulate them to listen to the farm programs of Bangladesh Betar.

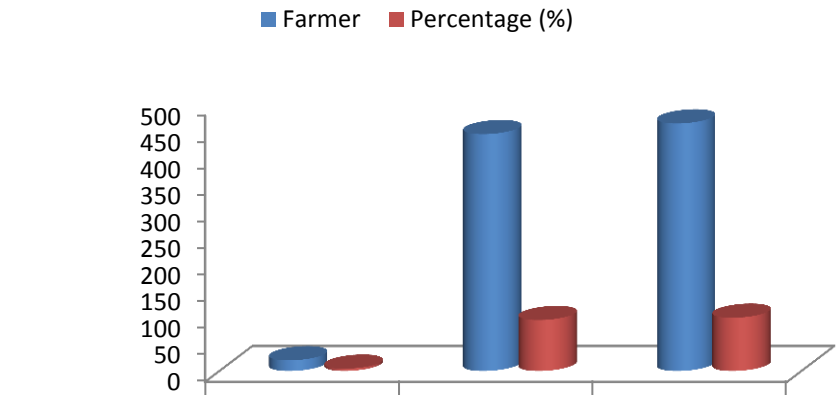
3.1.2 Influential Variables

3.1.2.1 Radio Set Holders

The access of the farmers to the farm programs of Bangladesh Betar is to be ensured with a view to ensure the effectiveness of Bangladesh Betar and its farm programs. Actual and potential farmers are the target listeners of the farm programs of Bangladesh Betar. If Bangladesh Betar fails to transmit the message or information to its target listeners then it is the ineffectiveness of the farm programs. In this research a systematic endeavor has been made to measure the effectiveness of the farm programs of Bangladesh Betar in the context of the access of the farmers to the farm programs, that is, how many times how many farmers tune Bangladesh Betar in order to listen to the farm programs.

Firstly, it is important to know how many farmers possess radio sets, because the farm programs are broadcast in Medium Wave (MW). Radio set is an essential prerequisite to receive the programs or massage or information broadcast through an

MW transmitter. A successful communication is established when the receiver is able to receive and comprehend the message sent by the sender. If the receiver cannot receive the message then the communication system will be ineffective. This is why, in order to receive any information of MW transmitter the receiver has to satisfy the precondition of having a radio set. Consequently, the possession of radio sets surges the likelihood of listening to the farm programs.

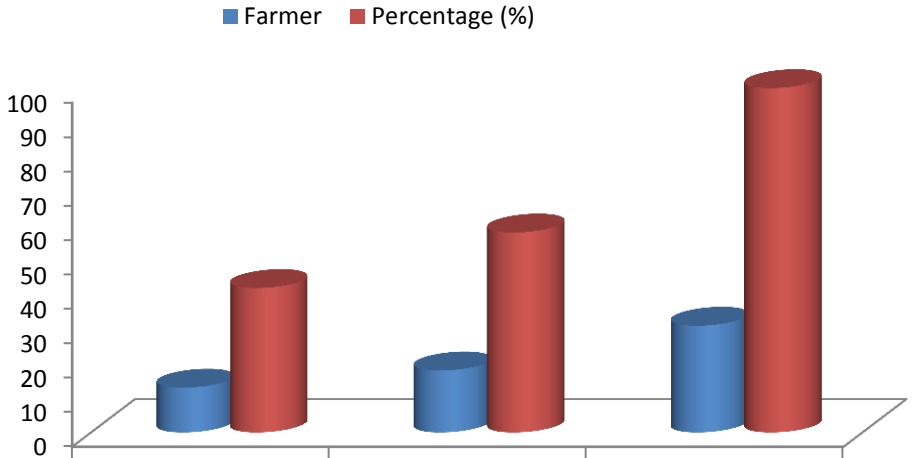


	Have radio set	Do not have radio set	Total
Farmer	20	445	465
Percentage (%)	4.3	95.7	100

Figure 3.1: Distribution of radio set owners

If the listeners listen to the farm programs then the programs have every possibility to be effective. In this study it has been seen that only 4.30% of the respondents have radio sets (Figure 3.1). Some of them who possess radio sets have proclaimed that they have radio sets but they never tune Bangladesh Betar to listen to the farm programs. Even they make no use of radio sets for listening to other programs of radio. That means, the radio sets are not in use.

Along with the MW transmitter from the 1st January, 2014 Bangladesh Betar Khulna[102] and from the 2nd October, 2013 Bangladesh Betar Rajshahi[103] started broadcasting farm programs through Frequency Modulation (FM) transmitter. But it is to a very short extent. Both Khulna and Rajshahi Betar broadcast farm programs through one kilowatt transmitter. This FM transmission covers almost 10 to 15 kilometers surrounding the transmission center.[104] Any program of this transmission can be received by any mobile phone device that has the FM program receiver. In this study it has been seen that 58.06% of the farmers who listens to the farm programs of Bangladesh Betar uses cell phone device for listening to the farm programs (Figure 3.2).



	Use radio set	Use cell phone	Total
Farmer	13	18	31
Percentage (%)	41.94	58.06	100

Figure 3.2: Distribution of the respondents who listen to the FP on cell phone

Having a radio set undoubtedly matters but not to a great extent, if the listeners belong to the coverage area of FM transmission. This study has revealed that only

[102] Interview with Bivangshu Kumer, (Regional Engineer, Bangladesh Betar Khulna), interview was taken on 25th November, 2014.

[103] Interview with Shewli Rani Boshu, (Deputy Regional Director, BB Rajshahi), interviewed by the researcher, Rajshahi, 1st December 2014.

[104] Interview with Md. Abdul Azij, (Deputy Engineer, Bangladesh Betar, Noapara, Jessore), interviewed by the researcher by telephone, 2nd December 2014.

10.40% of the respondents do not listen to the farm programs only for not having radio sets (Table 3.6).

Table 3.6 Distribution of the farmers by the causes for not listening to farm programs

Variables	Number of farmers (*n*)	Percentage (%)
Watch TV	37	8.52
Do not have radio set	45	10.37
Do not know that there is farm programs	6	1.38
No faith in radio information	4	0.92
Radio is now out of culture	235	54.15
Do not feel good listening radio	38	8.76
Programs cannot be seen on radio	4	0.92
Very busy	48	11.06
Lack of importance	15	3.46
For religion	2	0.46
Total	434	100.00

It is also proved that most of the respondents do not want to rely on the radio set for listening to radio programs. Some of the respondents are exasperated by radio set for its operating system. They have complained that it is disturbing to buy battery for radio set and it also incurs extra expenditures. The farmers are in cognitive dissonance. Subsequently, the researcher concludes that according to cognitive consistency theories[105] the repulsion for radio set has resulted in the detachment of the radio programs especially the farm programs and it is reflected in the survey of the respondents' access to the farm programs.

3.1.2.2 Materials, Formats, Duration and Schedule of the Farm Program

It has been seen that 93.55% of the listeners of both of the regions listen to the farm program named *Desh Amar Mati Amar* broadcast from Bangladesh Betar Dhaka and relayed at the same time by both of the regional stations, Khulna and Rajshahi at 7:05

[105] Richard West and Lynn H. Turner, *Introducing Communication Theory: Analysis and Application,* 4th ed. (New York: The McGraw-Hill Companies, Inc., 2010), p. 112.

p.m. So, the program materials, program formats, program schedule and program duration are not the causes for attracting more listeners of Khulna region because the program is the same.

Table 3.7 Distribution of farmers (only listeners) by their choice of time and program schedule

Programs	Time	Number of farmers (*n*)	Percentage (%)
Chashabad	Afternoon/ Evening	2	6.45
Sobuj Bangla	Afternoon	0	0
Desh Amar Mati Amar	Night	29	93.55
Total		31	100.00

But it has been seen that most of the listeners (93.55%) of the farm programs listen to the farm program broadcast at 7:05 p.m. that means, at night. Only 6.45% of the listeners listen to the farm program broadcast in the afternoon (Table 3.7).

On the other hand, in answering to a query most of the respondents (65.59%) who expressed their opinion about their choice of program schedule have told that they will be able to listen to the farm program regularly if it is broadcast after 8 p.m. in FM transmission. Another 12.90% of the respondents have told that they want to listen to the farm program in the evening (Table 3.8).

Table 3.8 Distribution of the farmers by their preference for farm program schedule

Variables	Number of farmers (*n*)	Percentage (%)
Will never listen	70	15.05
Before 8 a.m.	3	0.64
After noon	5	1.08
In the evening	60	12.90
After 8 p.m.	305	65.59
Anytime	7	1.51
At noon	4	0.86
No comment	11	2.37
Total	465	100.00

After document analysis it has been seen that all the farm programs of Bangladesh Betar, Khulna and Bangladesh Betar, Rajshahi are broadcast either in the

morning or in the afternoon. But, the percentages of respondents who want to listen to the farm programs in the morning, afternoon and any time accumulate only (0.64%+1.08%+1.51%) = 3.23%. The existing program schedules do not match the choice of most of the farmers. This mismatch between the expected program schedule and the actual program schedule might have played a discouraging role for listening to the farm programs.

3.1.2.3 Educational Qualification

It has been seen that education of the respondents is an influential variable. Almost all of the listeners (93.55%) of the farm programs are literate. The illiterate are not tend to listen to the farm programs. Among the listeners of the farm program only 6.45% of the farmers are illiterate (Table 3.9).

Table 3.9 Distribution of farmers (who listen to the FP) by their educational qualification

Variables	Number of farmers (*n*)	Percentage (%)	Cumulative Percent (%)
Up to Class 5	7	22.58	22.58
Below SSC	11	35.48	58.06
SSC	3	9.68	67.74
HSC	5	16.13	83.87
Bachelor	2	6.45	90.32
Master's	1	3.23	93.55
Illiterate	2	6.45	100.00
Total	31	100.00	

Note: FP refers to farm programs of Bangladesh Betar.

Among the literate respondents 29 farmers (8.28%) listen to the farm programs. On the other hand among the illiterate respondents 2 farmers (1.74%) listen to the farm program. The researcher has drawn the following hypothesis to test the significance of the difference of the proportions:

H_o: There is no difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

Whether the null hypothesis is accepted or rejected can be said after the test of this hypothesis. In the significance test (*z*-test) it has been seen that the *p* value is 0.0150 (Table 3.10).

Table 3.10 Significance test of two proportions

Variable	Number of farmers (*n*)	Listeners of farm program	Percentage (%)	*p* value
Literate	350	29	8.285	0.0150
Illiterate	115	2	1.739	
Total	465	31		

As the $p < 0.05$, the null hypothesis is rejected at 5% confidence level. The difference between the two proportions is significant. So, it can be concluded that the literate people are more likely to listen to the farm programs than the illiterate people. The researcher assumes that academic education makes them conscious of farm knowledge which leads to listening to the farm programs.

3.1.2.3.1 Comparison between the Regions

In Rajshahi region there are more literate respondents than in Khulna region, yet the number of farm program listeners of Rajshahi is less than that of Khulna region. In case of Rajshahi region the null hypothesis is accepted. That means in Rajshahi region the literate and illiterate respondents are all the same in listening to the farm programs of Bangladesh Betar (Table 3.11).

Hypothesis for Rajshahi region:

H_o: There is no difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

Hypothesis for Khulna region:

H_o: There is no difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between literate and illiterate farmers in listening to the farm programs of Bangladesh Betar.

Table 3.11 Regional comparison between literate and illiterate listeners of FPs

Area	Variables	Number of farmers (*n*)	Listeners of the farm programs	Percentage (%)	*p* values
Khulna	Literate	134	15	11.19	0.0270
	Illiterate	60	1	1.67	
	Total	194	16		
Rajshahi	Literate	216	14	6.481	0.1781
	Illiterate	55	1	1.818	
	Total	271	15		

Note: FP refers to the farm programs of Bangladesh Betar.

In case of Khulna region the null hypothesis is rejected ($p < 0.05$). Though educational qualification plays an influential role on overall listening behaviour of the farmers yet it does not play any differentiating role between the two regions. But in Khulna region the literate farmers are more likely to listen to the farm program.

3.1.2.4 Agricultural Training

In this study it is seen that out of 123 respondents who have training on agriculture 14 (11.38%) respondents listen to the farm programs and out of 342 respondents who do not have training on agriculture 17 (4.97%) respondents listen to the farm program (Table 3.12). 'Training on agriculture' influences listening to the farm programs of Bangladesh Betar.

Apparently, it is seen that those who have farm training listen to the farm programs more than those who have no training on agriculture. In the significance test (*z*-test) it is also proved. The null hypothesis is as follows:

H_o: There is no difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

In the statistical test (*z*-test) of the difference between the two proportions it has been seen that the *p* value is 0.0149 (Table 3.12). That means the difference is highly significant.

Table 3.12 Significance test of two proportions

Variables	Number of farmers (*n*)	Listeners of farm program	Percentage (%)	*p* value
Trained	123	14	11.38%	0.0149
Untrained	342	17	4.97%	
Total	465	31		

The null hypothesis is rejected at 0.5% confidence level. In a ward, having training on agriculture encourages the farmers highly to listen to the farm programs of Bangladesh Betar.

3.1.2.4.1 Comparison between the Regions

In a comparative study between the two study areas (Khulna and Rajshahi) it has been seen that in Khulna region there are more farmers who have agricultural training than in Rajshahi region. In Khulna region 33.51% of the farmers have training on farming. On the other hand, 21.40% of the farmers of Rajshahi region have training on farming (Table 3.13).

Table 3.13 Region-wise distribution of the farmers having training on farming

Area	Variables	Number of farmer (*n*)	Percentage (%)
Khulna	Have training on farming	65	33.51
	No training on farming	129	66.49
	Total	194	100.00
Rajshahi	Have training on farming	58	21.40
	No training on farming	213	78.60
	Total	271	100.00

The number of listeners of farm programs of Bangladesh Betar in Khulna region is also more than in Rajshahi region (Table 3.2). The farm training may have positive impact on listening to the farm program of Bangladesh Betar in Khulna region. To be confirmed there needs statistical test (*z*-test) of significance of the difference of proportions. Here the hypotheses are as follows:

Hypothesis for Khulna region:

H_o: There is no difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

Hypothesis for Rajshahi region:

H_o: There is no difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

H_1: There is difference between trained and untrained farmers in listening to the farm programs of Bangladesh Betar.

Table 3.14 Regional comparison between trained and untrained listeners of farm programs

Area	Variables	Number of farmers (*n*)	Listeners of the farm programs	Percentage (%)	*p* values
Khulna	Trained farmers	65	7	10.769%	0.3658
	Untrained farmers	129	9	6.976%	
	Total	194	16		
Rajshahi	Trained farmers	58	7	12.068%	0.0147
	Untrained farmers	213	8	3.755%	
	Total	271	15		

In the test (*z*-test) of difference of proportions in Khulna region it has been seen that the *p* value is 0.3658 that is the result is insignificant (Table 3.14). Therefore, the null hypothesis is accepted. In Khulna region the training in agriculture does not inspire the farmers to listen to the farm programs. On the other hand in case of Rajshahi region the null hypothesis is rejected ($p < 0.05$) (Table 3.14). That means in Rajshahi region training in agriculture stimulates the farmers to listen to the farm programs. So, the study exposes that agricultural training is the differentiating factor between the two regions. Though in Khulna region the difference between the trained and untrained farmers is insignificant, farm training has influence on listening to the farm programs because after the training programs farmers can be aware of the importance of modern farm technologies and the benefits of using the technologies which builds up their consciousness of the importance of listening to the farm programs of Bangladesh Betar.

3.1.2.5 Mobile Phone

The use of mobile phone has an impact on listening to the farm programs of Bangladesh Betar. Because, cell phone device is the only medium of those who have no radio set for listening to the farm programs of Bangladesh Betar. Research finding discloses that 58.06% (Figure 3.2) of the listeners listen to the farm programs on cell phone devices. The number of mobile phone users in Rajshahi is more than that of Khulna. But the

number of the listeners of farm programs in Rajshahi is less than that of Khulna. So, the use of cell phone does not differentiate the number of farm programs listeners between the two regions. The researcher assumes that as cell phone device can be used to listen to only the farm programs aired through FM transmission, the capacity of FM transmission may be a differentiating factor because there are a number of complaints from the respondents about the poor service of FM transmission and the researcher has also seen that the FM transmission of Khulna Betar is better than that of Rajshahi Betar.

3.1.2.6 Mindset of the Farmers

The research finding shows that more than half (54.15%) of the respondents (Table 3.6) think that radio is now out of culture, that is, outdated. Some of the respondents have said that if people see them listening to radio programs then they will laugh at them. It is a very frightening expression of their mindset. Because, if the people for whom the programs are developed and broadcast reject them in fear of being mocked without any analysis of the programs in context of their importance and usefulness then it would be very difficult to orient new technologies to them no matter how modern the device of transmission is. So, it is a great challenge to change this long cherished mindset which is one of the most dominant factors for listening to the farm programs of Bangladesh Betar.

3.1.2.7 Television

If radio is obsolete to them, they must take the benefit of farm programs by dint of any modern technology. But the study has revealed that only 24.09% of the total respondents watch farm programs on TV. Among them only 2.37% of the respondents watches farm programs on TV regularly. There are some respondents who do not have

TV of their own but watch TV and sometimes even farm programs when they are in the local bazar. But as the TV channels are controlled by the shopkeepers, their (farmers') watching farm program is not at their will. Only 2.15% of the respondents very often watch farm programs on TV. The research findings reveal that 75.91% of the respondents never watch farm programs on TV (Table 3.15).

Table 3.15 Distribution of the viewers (farmers) of farm programs on TV

Variables	Number of farmers (*n*)	Percentage (%)	Cumulative Percentage (%)
Regularly watch farm programs of TV	11	2.37	2.37
Very often watch farm programs of TV	10	2.15	4.52
Sometimes watch farm programs of TV	7	1.51	6.03
Very few times watch farm programs of TV	84	18.06	24.09
Never watch farm programs of TV	353	75.91	100.00
Total	465	100.00	

Note: TV refers to television.

In a comparative analysis between TV and radio, it has been seen that only 112 (24.09%) respondents watch farm programs on TV, on the other hand 31 (6.67%) respondents listen to the farm programs on radio (Bangladesh Betar). That means only (112 – 31 = 81) 17.42% of the respondents prefers watching farm programs on TV to listening the farm programs on radio. The number of respondents (2.37%) who regularly watch farm program on TV is same to those (2.37%) who regularly listen to the farm program of Bangladesh Betar.

Even all of the respondents (54.15%) who proclaimed that they do no tune radio for listening farm programs for the obsolescence of radio do not watch TV for farm information. The present viewers and listeners total only (24.09% + 6.67%) = 30.76% of the farmers. It is evident that the viewers and listeners of farm programs have decreased. So, the obsolescence of radio is a cause for not listening to the farm programs of Bangladesh Betar but the factors which are responsible for precluding farm programs of TV may act as the hindrance to listening to the farm programs of Bangladesh Betar. The

researcher assumes that the farmers' unconsciousness of the importance of listening to the farm programs and the failure of the respective departments involved in the extension services are the causes for not listening to the farm programs.

3.1.2.8 Government Agencies

Besides Bangladesh Betar and TV, Upazila Agriculture Office, Upazila Veterinary Surgeon Office and Upazila Fisheries Office are the authorized authorities for disseminating farming technologies to the respective farmers. As a great number of respondents do not use radio and television as a source for farm information, the researcher assumed that they may go to the agriculture officers (AO), veterinary surgeons (VS) and fisheries officers (FO). But the study has revealed that half (49.63%) of the respondents from crop farmers never go to the agriculture officers for their farm information or suggestions.

Table 3.16 Distribution of the respondents who consult with the respective experts

Sectors	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Crop	Always consult with AO	6	2.21	2.21
	Very often consult with AO	45	16.54	18.75
	Sometimes consult with AO	39	14.34	33.09
	Very few times consult with AO	47	17.28	50.37
	Never consult with AO	135	49.63	100.00
	Total	272	100.00	
Livestock	Consults with VS	31	41.33	41.33
	Does not consult with VS	44	58.67	100.00
	Total	75	100.00	
Fisheries	Very often consult with FO	21	17.80	17.80
	Sometimes consult with FO	9	7.63	25.43
	Very few time consult with FO	2	1.69	27.12
	Never consult with FO	86	72.88	100.00
	Total	118	100.00	

Note: AO = Agriculture Officers, VS = Veterinary Surgeon, and FO = Fisheries Officers.

Of the respondents only 17.28% consult with the agriculture officers very rarely. The number of respondents who have inner urge for farm information is very less (18.75%) who frequently consult with agriculture officers. All together half (50.37%) of

the respondents consult with agriculture officers but of this group one third (31.62%) consult with the agriculture officers if they are confronted with them but very rarely follow their suggestions. Most of the farmers think that their indigenous knowledge is better than that of the agriculture officers and the suggestions given by the agriculture officers cannot be used in real-life situations.

Among the farmers of livestock 44.33% consult with veterinary surgeons and on the other hand, among the fish farmers 27.12% consult with fisheries officers (Table 3.16). The research finding is also that many farmers who do not follow the suggestions of the experts (agriculture officers, veterinary surgeons and fisheries officers) lack confidence in their (experts) knowledge. Even some of the farmers have said, “they (agriculture officers, veterinary surgeons and fisheries officers) know nothing then how they can give us suggestions”. This type of mentality is very shocking and might have played a role to keep them away from listening to the farm programs as these experts are the resource persons of the farm programs of Bangladesh Betar.

But the research finding has divulged that consultation with the experts has positive impact on listening to the farm programs of Bangladesh Betar. It has been seen that the number of listener (7.29%) of farm programs among those who go to the AOs is more than the number of the listeners (5.18%) of farm programs among those who do not consult with AOs (Table 3.17). That means the farmers who consult with the experts are more likely to listen to the farm programs of Bangladesh Betar than those who do not consult with the agriculture officers.

It has been seen that the number of listener (12.5%) of farm programs among those who go to the FOs is more than the number of the listeners (4.65%) of farm programs among those who do not consult with FOs (Table 3.17). That means the

farmers who consult with the experts are more likely to listen to the farm programs of Bangladesh Betar than those who do not consult with the fisheries officers. The same thing happens in case of livestock farmers. But in the test of the following hypotheses it has been seen that the difference between the proportions are not significant:

$$\left.\begin{aligned} H_o &: \text{Those who consult and those who do not consult with AO are identical in listening to farm programs.} \\ H_1 &: \text{Those who consult and those who do not consult with AO are not identical in listening to farm programs.} \end{aligned}\right\} \quad (I)$$

$$\left.\begin{aligned} H_o &: \text{Those who consult and those who do not consult with VS are identical in listening to farm programs.} \\ H_1 &: \text{Those who consult and those who do not consult with VS are not identical in listening to farm programs.} \end{aligned}\right\} \quad (II)$$

$$\left.\begin{aligned} H_o &: \text{Those who consult and those who do not consult with FO are identical in listening to farm programs.} \\ H_1 &: \text{Those who consult and those who do not consult with FO are not identical in listening to farm programs.} \end{aligned}\right\} \quad (III)$$

Table 3.17 Distribution of the differences of proportions

Sectors	Variables	Number of farmers (*n*)	Listeners of FPs	Percentage (%)	*p* values
Crop	Consult with AO	137	10	7.299	0.4720
	Never consult with AO	135	7	5.185	
	Total	272	17		
Livestock	Consult with VS	29	3	10.34	0.5544
	Does not consult VS	46	3	6.52	
	Total	75	6		
Fisheries	Consult with FO	32	4	12.5	0.1343
	Does not consult with FO	86	4	4.65	
	Total	118	8		

Note: FP = farm programs of Bangladesh Betar, AO = Agriculture Officers, VS = Veterinary Surgeon, and FO = Fisheries Officers.

In the statistical tests (*z*-test) of hypotheses the three null hypotheses mentioned above are accepted at 0.5% confidence level. So, statistically it cannot be said that the

consultations with the experts stimulate the farmers to listen to the farm programs of Bangladesh Betar. But this research is not of a field of pure science. It is a study of social-science. Social-science deals with human psychology. This is why; the researcher assumes that the farmers who consult with the experts may be stimulated to listen to the farm programs. Because, if the farmers who consult with the experts know that the experts are the very resource persons of the farm programs of Bangladesh Betar, they have the every possibility to listen to the farm programs.

3.1.2.9 Consultation with Salesman

Most of the farmers do not use radio, TV, AOs, VSs and FOs as the main sources of farm information. Then what are their main sources of information for farming? This study has revealed that most (77.94%) of the crop farmers consult with the sellers of seeds, fertilizers and pesticides while purchasing these (Table 3.18). These salesmen must take the profit of their business into their account while giving suggestions to the farmers who are their customers. In this circumstance, there is every possibility for the farmers to face detrimental effect on the fertility of soil, production and on the overall agriculture.

Most of the livestock and fisheries farmers are not used to consulting with the salesmen. Among the livestock farmers 93.33% never goes to the salesmen for suggestions. Among the fisheries farmers 89.84% never goes to the salesmen for suggestions (Table 3.18).

Table 3.18 Distribution of the respondents who consult with the salesmen

Sectors	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative Percentage (%)
Crop	Always consult with salesman	9	3.31	3.31
	Very often consult with salesman	85	31.25	34.56
	At times consult with salesman	109	40.07	74.63
	Very few times consult with salesman	9	3.31	77.94
	Never consult with salesman	60	22.06	100.00
	Total	272	100.00	
Livestock	Always consult with salesman	5	6.67	6.67
	Never consult with salesman	70	93.33	100.00
	Total	75	100.00	
Fisheries	Very often consult with salesman	6	5.08	5.08
	At times consult with salesman	6	5.08	10.16
	Never consult with salesman	106	89.84	100.00
	Total	118	100.00	

The research finding is that 5.66% of the crop farmers who go to the salesmen listen to the farm programs. But those who do not consult with the salesmen are more likely to listen to the farm programs because, 8.33% of the farmers who do not consult with the salesmen listen to the farm programs (Table 3.19). So, the following hypotheses are to be tested:

$$\left.\begin{aligned} H_0 &: \text{Among the crop farmers who consult and who do not consult with salesman are identical in listening to the FPs.} \\ H_1 &: \text{Among the crop farmers who consult and who do not consult with salesman are not identical in listening to the FPs.} \end{aligned}\right\} \quad (I)$$

$$\left.\begin{aligned} H_o &: \text{Among the livestock farmers who consult and who do not consult with salesmen are identical in listening to FPs} \\ H_1 &: \text{Among the livestock farmers who consult and who do not consult with salesmen are not identical in listening to FPs} \end{aligned}\right\} \quad (II)$$

$$\left.\begin{aligned} H_o &: \text{Among the fish farmers who consult and those who do not consult with salesmen are identical in listening to FPs} \\ H_1 &: \text{Among the fish farmers who consult and those who do not consult with salesmen are not identical in listening to FPs} \end{aligned}\right\} \quad (III)$$

The results of the tests (*z*-test) of these hypotheses are in the following Table 3.19. In case of the crop farmers the null hypothesis (*I*) is accepted ($p > 0.05$). That is, among the crop farmers who consult with the salesmen are equivalent to those who do not consult with salesmen in listening to the farm programs. The researcher assumes that as most of the crop farmers are not aware of the loss that may incur if they do not cultivate in the proper ways, it matters nothing to them whether they have accurate farm knowledge or not. Therefore, consultation with salesmen does not have any impact on listening to the farm programs.

On the other hand, in case of livestock farmers consultation with salesman has impact on listening to the farm programs. It has been seen that among the livestock farmers who go to the salesmen 40% of them listen to the farm program and who do not go to the salesmen 5.71% of them listen to the farm programs. In the significance test it is seen that the difference is significant ($p < 0.05$) (Table 3.19). The null hypothesis (*II*) is rejected. That means, the more they go to the salesmen, the more they are likely to listen to the farm programs.

Table 3.19 Distribution of farmers with difference of proportions

Sectors	Variables	Number of Farmers (*n*)	Listener of FPs	Percentage (%)	*p* values
Crop	Consult with salesmen	212	12	5.66	0.4513
	Never consult with salesmen	60	5	8.33	
	Total	272			
Livestock	Consult with salesmen	5	2	40	0.0079
	Does not consult with salesmen	70	4	5.71	
	Total	75			
Fisheries	Consult with salesmen	12	1	8.33	0.8216
	Does not consult with salesmen	106	7	6.60	
	Total	118			

Note: FP refers to farm programs of Bangladesh Betar.

In case of fish farmers it has been seen that 8.33% of those who go to the salesmen listen to the farm programs and 6.60% of those who do not go to the salesmen

listen to the farm programs. In the statistical test (*z*-test) of proportions it is seen that the difference is insignificant (Table 3.19). The null hypothesis (*III*) is accepted. That means, those who consult and those who do not consult with salesman listen to the farm programs identically.

Subsequently, the research finding is that in case of crop and fisheries sector consultation with salesmen is not the cause for not listening to the farm programs. On the other hand, in case of livestock farmers consultation with the salesmen is the cause for listening to the farm programs. But in case of the total sample the null hypothesis is accepted at 0.5% confidence level (Table 3.20). The hypothesis is as follows:

H_o: There is no difference between a farmer who consults with salesman and who does not consult with salesman in listening to the farm programs.

H_1: There is difference between a farmer who consults with salesman and who does not consult with salesman in listening to the farm programs.

In the statistical test of the proportions it has been seen that the *p* value is 0.9212 (Table 3.20).

Table 3.20 Significance test of the difference of two proportions

Variable	Number of farmers (*n*)	Listeners of the farm programs	Percentage (%)	*p* value
Consultation with salesman	229	15	6.55%	0.9212
No consultation with salesman	236	16	6.78%	
Total	465	31		

In case of total sample the result of statistical test (*z*-test) indicates that consultation with the salesmen is not an influential variable. That means, consultation with salesmen matters nothing to the listening to the farm programs of Bangladesh Betar. But in case of a single sector it is seen that the livestock and fisheries farmers (though in case of the fish farmers the difference of proportions is insignificant) who

consult with salesmen are more likely to listen to the farm programs. But there raises question- why does consultation with salesman stimulate the livestock farmers to listen to the farm programs? The researcher assumes that another factor is involved here. As livestock and fisheries sectors are more technical and risky, the farmers of these sectors cannot be self-reliant on their farm knowledge. And this is why, they try to collect information from different sources. It is also seen in this research that consultation with livestock officers encourages the farmers to listen to the farm programs.

3.1.2.10 Fellow Farmers

The research finding shows that 58.82% of the crop farmers take the suggestions from the fellow farmers. On the other hand, 84% of the livestock farmers never consult with the fellow farmers for suggestions. Only 16% of the livestock farmers take the suggestions of the fellow farmers. Among the fish farmers 45.76% of the farmers consult with the fellow farmers (Table 3.21).

Table 3.21 Distribution of the respondents who consult with the fellow farmers

Area	Variables	Number of farmers (*n*)	Percentage (%)	Cumulative Percentage (%)
Crop	Always take suggestion from fellow farmers	5	1.84	1.84
	Very often take suggestions from fellow farmers	82	30.15	31.99
	At times take suggestions from fellow farmers	67	24.63	56.62
	Take very little suggestions from fellow farmers	6	2.20	58.82
	Never take suggestions from fellow farmers	112	41.18	100.00
	Total	272	100.00	
Livestock	Always take suggestion from fellow farmers	11	14.67	14.67
	Very often take suggestion from fellow farmers	1	1.33	16.00
	Never take suggestion from fellow farmers	63	84.0	100.00
	Total	75	100.00	
Fisheries	Very often take suggestion from fellow farmers	22	18.64	18.64
	At times take suggestion from fellow farmers	28	23.73	42.37
	Take very little suggestion from fellow farmers	4	3.39	45.76
	Never take suggestion from fellow farmers	64	54.24	100.00
	Total	118	100.00	

Altogether, out of 465 respondents 226 (48.60%) respondents consult with their fellow farmers for agricultural suggestions. Out of this 226 respondents who consult with other farmers 12 (5.309%) respondents listen to the farm programs of Bangladesh Betar (Table 3.22). Here the null hypothesis is:

H_o: Farmers who consult and who do not consult with fellow farmers are identical in listening to the farm programs.

H_1: Farmers who consult and who do not consult with fellow farmers are not identical in listening to the farm programs.

Table 3.22 Significance test of the difference of two proportions

Variable	Number of farmers (*n*)	Listeners of the farm program	Percentage (%)	*p* value
Consultation with farmers	226	12	5.309%	0.2546
No consultation with farmers	239	19	7.949%	
Total	465	31		

In the test (*z*-test) of the hypothesis it is seen that the *p* value is 0.2546 that is the difference of proportions is insignificant. And so the null hypothesis is accepted. That means those who consult with the fellow farmers are equivalent to the respondents who do not consult with the fellow farmers in listening to the farm programs.

3.1.2.10.1 Sector-wise Analysis

a) Crop Sector

In the crop sector it has been seen that those who go to the fellow farmers 3.13% of them listen to the farm programs of Bangladesh Betar. On the other hand, those who do not go to other farmers for suggestions 9.82% of them listen to the farm programs (Table 3.23). So, consultation with fellow farmers is a cause for not listening to the farm programs. The hypothesis drawn for significance test (*z*-test) is as follows:

H_o: Among the crop farmers who consult and who do not consult with fellow farmers are identical in listening to farm programs.

H_1: Among the crop farmers who consult and who do not consult with fellow farmers are not identical in listening to farm programs.

Here the null hypothesis is rejected at 5% confidence level (Table 3.23). That is the farmers who do not go to the fellow farmers for suggestion are more likely to listen to the farm programs.

b) Livestock Sector

In the livestock sector the study shows that 25% of those who consults with other farmers listen to the farm programs and only 4.76% of those who do not consult with other farmers listen to the farm programs of Bangladesh Betar. The hypothesis drawn for significance test is as follows:

H_o: Among the livestock farmers who consult and who do not consult with fellow farmers are identical in listening to farm programs.

H_1: Among the livestock farmers who consult and who do not consult with fellow farmers are not identical in listening to farm programs.

The result of the statistical test (*z*-test) of the difference of the proportions is $p < 0.05$ (Table 3.23). Here also the null hypothesis is rejected. So, in case of livestock farmers consultation with fellow farmers affects listening to the farm programs of Bangladesh Betar. The researcher assumes that the mindset of the farmers is the influential factor here. The farmers who are very confident in their own farm knowledge think that they

do not need to consult with other and so they neither consult with fellow farmers nor listen to the farm programs.

Table 3.23 Distribution of farmers who consult with salesmen with significance test

Sectors	Variables	Number of farmers (*n*)	Listener of FPs	Percentage (%)	*p* values
Crop	Consult with fellow farmers	160	5	3.13	0.0218
	Never consult with fellow farmers	112	11	9.82	
	Total	272	16		
Livestock	Consult with fellow farmers	12	3	25.00	0.0205
	Does not consult with fellow farmers	63	3	4.76	
	Total	75	6		
Fisheries	Consult with fellow farmers	54	4	7.41	0.8033
	Does not consult with fellow farmers	64	4	6.25	
	Total	118	8		

Note: FP refers to the farm programs of Bangladesh Betar.

c) Fisheries sector

In the fisheries sector the study has revealed that 7.41% of 54 fish farmers (45.8% of the total) who take the suggestions from fellow farmers listens to the farm programs of Bangladesh Betar and 6.25% of 64 fish farmers who do not consult with fellow farmers listens to farm programs of Bangladesh Betar. The hypothesis drawn for significance test is as follows:

H_o: Among the fish farmers who consult and those who do not consult with fellow farmers are identical in listening to FPs.

H_1: Among the fish farmers who consult and those who do not consult with fellow farmers are not identical in listening to FPs.

Here, after the test (*z*-test) of hypothesis the null hypothesis is accepted, that is among the fish farmers who consult and those who do not consult with fellow farmers are identical in listening to the farm programs (Table 3.23). So, the finding is that in case of fish farmers consultation with fellow farmers is not the cause for not listening to the farm programs of Bangladesh Betar. In this research it has been seen that most of the

fisheries farmers think that they know enough for farming. This self-reliance on their indigenous knowledge may be the cause for not listening to the farm programs of Bangladesh Betar.

3.1.2.11 Agricultural Knowledge

Most of the farmers do not listen to the farm programs of Bangladesh Betar and even do not watch the farm programs of TV. The cause behind this may be that their farm knowledge is sound. But in the research it has been found that most of the farmers (60.8%) have very poor knowledge in agricultural technologies (Table 3.24).

Table 3.24 Distribution of agricultural knowledge of the respondents

Variables		Number of farmers (*n*)	Percentage (%)	Cumulative Percentage (%)
Very poor	(secured numbers 0%-20%)	264	60.83	60.83
Poor	(secured numbers 21%-40%)	122	28.11	88.94
Average	(secured numbers 41%-60%)	40	9.22	98.16
Good	(secured numbers 61%-79%)	7	1.61	99.77
Very good	(secured numbers 80% & above)	1	0.23	100
Total		434	100	

This may be the consequence of going to the seller of seeds, fertilizers and pesticides and fellow farmers instead of consulting with authorized authorities and listening to the farm programs of Bangladesh Betar and television.

3.1.2.12 Belief in Radio Information

It is one of the prerequisite to have confidence in the information broadcast from Bangladesh Betar for listening to the farm programs. In this study it has been seen that almost all (96.56%) the respondents believe the information broadcast from Bangladesh Betar (Table 3.25). So, lack of faith and confidence in the information given through the farm programs of Bangladesh Betar is not the cause for not listening to the farm programs.

Table 3.25 Distribution of farmers by faith in FPs

Variables	Number of farmers (*n*)	Percentage (%)
Have faith in radio information	449	96.56
Do not have faith in radio information	5	1.07
No comment	11	2.37
Total	465	100.00

Note: FP refers to farm programs of Bangladesh Betar.

The research finding reveals that there are many farmers who do not have faith in the knowledge of the experts especially the agriculture and fisheries officers but they believe the information provided through the farm programs of Bangladesh Betar.

3.1.2.13 Leisure

The farmers have to have leisure for listening to the farm programs. In this study it has been seen that almost all (93.55%) the respondents (Table 3.26) have leisure and among them 21.1% watch TV, 29.9% go to the local bazars and 27.3% spend their leisure gossiping. So, lack of leisure does not influence listening to the farm programs.

Table 3.26 Distribution of farmers by their leisure

Variables	Number of farmers (*n*)	Percentage (%)
Have leisure	435	93.55
Have no leisure	27	5.81
No comment	3	0.64
Total	465	100.00

3.1.2.14 Awareness of the Programs

The research has revealed that half (50.97%) of the respondents does not know that there is farm programs broadcast from Bangladesh Betar (Table 3.27). It cannot be ensured that all the respondents who are not aware of the farm programs will listen to the farm programs if they know that there are farm programs from Bangladesh Betar. Knowing details of something is the precondition of accepting that. The study reveals that 50.97% of the respondents do not know that there is farm programs broadcast from

Bangladesh Betar (Table 3.27). In this research it is also seen that 36.85% of those who listen to the FM radio programs do not know that there are farm programs from Bangladesh Betar (Table 3.28). The ignorance about the farm programs may be a cause for not listening to the farm programs.

Table 3.27 Distribution of awareness of FPs of BB

Variables	Number of Farmers (*n*)	Percentage (%)
Aware of the FPs from BB	209	44.95
Are not aware of the FPs of BB	237	50.97
No comment	19	4.08
Total	465	100.00

Note: BB refers to Bangladesh Betar and FPs refers to farm programs.

Table 3.28 Distribution of FM program listeners by their awareness of FPs of BB

Variables	Number of Farmers (*n*)	Percentage (%)
Aware of the FPs of BB	63	55.26
Not aware of the FPs of BB	42	36.85
No comment	9	7.89
Total	114	100.00

Note: BB refers to Bangladesh Betar and FPs refers to farm programs.

3.1.2.15 Weak FM Transmission

In the document analysis and after the interview with the officials of Bangladesh Betar it has been known that both from Khulna and Rajshahi stations of Bangladesh Betar the farm programs are being broadcast through one kilowatt FM transmitter. The coverage area is very low. A number of respondents complained about the problem in receiving the farm programs in FM frequency by means of their cell phone devices.

The researcher has also failed to receive the farm programs from some of the study areas. Even from the residential area of the Institute of Bangladesh Studies of the University of Rajshahi the researcher could not listen to the programs clearly. This problematic transmission of farm programs from FM transmitter stands as the obstacle to the listening to the farm programs especially for those who listen to FM radio programs.

3.2 Conclusion

In the context of the farmers' access to the farm programs, the farm program of Bangladesh Betar is ineffective as it itself fails to reach most of the farmers (93.3%), because reaching the receiver is the prerequisite of a successful communication. In pursuance of the above analysis the researcher concludes that radio is culturally unfit. The farmers of Bangladesh are cognitive miser,[106] that is, most of the farmers of Bangladesh do not have the urge to know any new technology. Even most of the farmers do not know that they are not aware of the important modern technologies for farming. They are not conscious of that. Lack of consciousness is an impediment to listening to the farm programs of Bangladesh Betar. Besides, a vast majority of the respondents think that they are more experienced and skilled in farming than the govt. experts. This type of negative attitude towards the experts acts as an impediment to listening to the farm programs. Academic education and training on agriculture increase the consciousness of the farmers which leads to listening to the farm programs.

The research finding is that those who are literate and have farm training are more likely to listen to the farm programs. So, the researcher assumes that it is a great challenge to the authority of Bangladesh Betar to build awareness among the farmers of the farm programs and their importance and then broadcast the programs in such a way that the target listener (the farmers) can receive the programs at their convenient time by means of a culturally fit device and cell phone can be a better alternative.

[106] David Buckingham, *The Making of Citizens: Young People, News and Politics* (New York: Routledge, 2000), p. 15.

CHAPTER FOUR

FARM PROGRAMS AND FARM EDUCATION

4 Introduction

Radio has been the medium used most extensively in developing societies over the past several decades as a cost-effective means of providing information and education to diverse target groups.[107] Bangladesh Betar from the very beginning has been trying to educate the farmers of Bangladesh about different farm technologies along with different government agencies. Most of the farmers of every sector of agriculture are unaware of the existence, use and benefits of modern technologies for farming. These mostly ignorant farmers can be better addressed by radio as there is considerable support for the view that radio is an effective medium of instruction.[108] In many countries radio farm forums have been proved to be very successful. Radio farm forum as an agent for transmission of knowledge has proved to be a success beyond expectation; even the little gain there was occurred mostly in non-forum villages with radio.[109]

All the ministries and departments have undertaken intensive efforts for informing and educating their respective farmers about modern technologies and farm techniques. In most of the cases through interpersonal communication the field-level experts try to address different types of issues faced by the farmers. The collaboration

[107] Polly E. Mclean, "Radio and Rural Development in Swaziland," *African Media Review,* Vol. 6, No. 3, 1992, p. 53.

[108] *N.G. Nwaerondu, Gordon Thompson.* "The Use of Educational Radio in Developing Countries: Lessons from the Past." *The Journal of Distance Education.* Vol. 2, No. 2, p. 50.

[109] J. C. Mathur and P. Neurath, "Indian Experiment in Farm Radio Forum", Press, Film and Radio in the World today, publisher: M. Blondin, Paris, UNESCO, 1959, p. 105.

between Bangladesh Betar and other departments in the diffusion of technologies must incur beneficial results as multi-channel communication is more effective than single channel communication. When more than one channel act in concert to convey the messages about a common theme to the same audience, a kind of synergistic advantage is usually achieved.[110] Besides, radio is effective in educating the illiterate along with the literate in the same way.[111] In this chapter it is tried to see whether the farm programs of Bangladesh Betar are effective in educating the farmers of different sectors of agriculture of Bangladesh.

4.1 Results and Discussions

The research finding is that 24.70% of the respondents are illiterate and another 16.60% have formal education up to class five. That means 41.30% of the respondents have never got the chance of acquiring agricultural knowledge because, there is no arrangement of agricultural education in the curricula up to class five in Bangladesh. And so, 41.30% of the respondents are bound to meet their need of agricultural knowledge from informal sources.

In this research it has been seen that 81% of the respondents consult with others for agricultural suggestions. That means those who are literate from class six to master's degree seek for farm knowledge from others. This study has revealed that the farmers of Bangladesh generally take suggestions from the following sources:

[110] E. M. Rogers, J. R. Braun and M. A. Wermilion, "Radio Forums: A Strategy for Rural Development," (Institute for Communication Research, Stanford University, 1975), p. 3.

[111] K. S. Sitaram, "An Experimental Study of the Effects of Radio upon the Rural Indian Audiance", unpublished doctoral dissertation, University of Oregon, 1969, Cited in "The Use of Educational Radio in Developing Countries: Lessons from the Past." *The Journal of Distance Education.* Vol. 2, No. 2, p. 46.

a) Fellow farmers,
b) Salesman of fertilizer, seeds, pesticides and medicine (individual salesman, company agents/dealers, company doctors/consultants/leaflets and so on),
c) Agricultural departments (agriculture officer, veterinary surgeon and fisheries officers),
d) Farm programs of TV, and
e) Farm programs of Bangladesh Betar.

Most of the farmers are accustomed to getting information from unauthorized sources. Among the crop farmers 77.9% consult with the salesmen for suggestions (Table 3.20). On the other hand, 6.67% of the farmers listen to the farm programs of Bangladesh Betar for their required agricultural information (Table 3.1). Bangladesh Betar from the very beginning has been trying to make the farmers aware of the new farm technologies by means of its farm programs. This research has revealed that the impact of not consulting with the authorized experts and not listening to the farm programs of Bangladesh Betar and TV is focused on their agricultural knowledge (Table 4.1). To test the knowledge of the farmers, ten questions from each of the sectors have been selected and each and every respondent has been examined based on these ten questions of the respective field (Appendix A, B, C). All the questions are of equal value. For each right answer the farmers have been given one mark. The secured numbers and the level of knowledge are measured on five-point Likert scale which is as follows:

Secured numbers (%)	Level of knowledge	
0-20	Very poor	Weak
21-40	Poor	
41-60	Average	Average
61-79	Good	Strong
≥ 80	Very good	

The test result is as follows:

Table 4.1 Distribution of knowledge of the respondents (farmers of all sectors)

Level of Knowledge		Number of farmers (*n*)	Percentage (%)		Cumulative percentage (%)
very poor	Weak	272	58.50	86.67	58.50
poor		131	28.17		86.67
average		51	10.97		97.64
good	Strong	9	1.93	2.36	99.57
very good		2	0.43		100.00
Total		465	100.00		

Most of the farmers (58.50%) are very poor in agricultural knowledge as they cannot answer to more than two questions asked by the researcher. Among this 58.50% there are 15.05% farmers who could not answer to any of the ten questions selected for their test (Table 4.2).

Table 4.2 Distribution of the farmers with very poor knowledge

Total Respondents	Variables	Farmers	Percentage (%)
465	Could not answer to any question	70	15.05
465	Could answer to only one question	106	22.79

The poor knowledge of the farmers affects their farm practices. A comparative analysis has been made to know whether the farm programs of Bangladesh Betar have any impact on the knowledge level of the farmers.

AGRICULTURAL KNOWLEDGE

4.1.1 Listeners versus Non-listeners of the Farm Programs of Bangladesh Betar

In this research it has been seen that 6.67% of the farmers listen to the farm programs but all the farmers who listen to the farm programs do not listen to the programs regularly. Only 16.13% of the listeners listen to the programs regularly but not all the programs (Table 4.3). Even those who listen to the programs regularly do not listen to

all the three programs broadcast from any of the two sample radio stations. It has been seen that all of the daily listeners listen to the program *'Desh Amar Mati Amar'* broadcast from Dhaka station and relayed from all the regional stations (Khulna and Rajshahi) at the same time when it is broadcast.

Table 4.3 Distribution of the farmers (listeners) by their listening habit

Variable	Number of farmers(*n*)	Percentage (%)
Regularly listen to the farm programs of Bangladesh Betar	5	16.13
Very often listen to the farm programs of Bangladesh Betar	8	25.81
Sometimes listen to the farm programs of Bangladesh Betar	11	35.48
Very few times listen to the farm programs of Bangladesh Betar	7	22.58
Total	31	100.00

Not only there is a few numbers of listeners of farm programs but also each farmer (who listens to the farm programs) spends frustrating amount of minutes per day for listening to farm programs. On an average, each farmer spends only 12.55 minutes per day. But they do not listen every day regularly. Though the listeners spend very few minutes for listening yet to know whether the farm programs have any impact on the agricultural knowledge, each of the listeners and non-listeners was asked to answer to ten questions on respective field of agriculture. The farmers were classified into five levels of knowledge- 'very poor', 'poor', 'average', 'good' and 'very good' based on the numbers scored by each farmer in the test. Then within each knowledge level a comparison has been made between the listener and non-listener of the farm programs.

It has been seen that more farmers among the non-listeners are poor and very poor in agricultural knowledge than those of listeners of the farm programs of Bangladesh Betar. On the other hand, more farmers among the listeners are with average knowledge in comparison with the non-listeners of the farm programs of Bangladesh Betar. Even the number of farmers with good and very good knowledge is more among the listeners of farm programs than those of non-listeners. For comparative

analysis hypotheses have been developed for the significance tests (*z*-test) based on the levels of knowledge:

Table 4.4 Distribution of knowledge of the listeners and non-listeners

Farmers who do not listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very poor	264	60.83	60.83
Poor	122	28.11	86.94
Average	40	9.22	96.16
Good	7	1.61	99.77
Very good	1	0.23	100.00
Total	434	100.00	
Farmers who listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very poor	8	25.81	25.81
Poor	9	29.03	54.84
Average	11	35.48	90.32
Good	2	6.45	96.77
Very good	1	3.23	100.00
Total	31	100.00	

4.1.1.1 Very Poor Knowledge in Farming

There is a clear distinction between the listeners of the farm programs and the non-listeners of the farm programs in case of very poor knowledge. Both the groups (listener and non-listener) have farmers with very poor knowledge in agriculture but number of farmers with very poor knowledge is more in the non-listener group than in listener group. For testing the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in case of very poor knowledge.

H_1: There is difference between a listener and a non-listener in case of very poor knowledge.

In the test (*z*-test) of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.5). That means, there is difference between the listener group and non-listener

group in having very poor knowledge, that is, the listeners are better than the non-listeners.

Table 4.5 Significance test of difference of two proportions

Variables	Number of farmers (*n*)	Very poor knowledge	Percentage (%)	*p* value
Do not listen to FPs	434	264	60.8	0.00014
Listen to FPs	31	8	25.8	
Total	465	272		
Variables	Number of farmers (*n*)	Poor knowledge	Percentage (%)	*p* value
Do not listen to FPs	434	122	28.1	0.99202
Listen to FPs	31	9	29.0	
Total	465	131		
Variables	Number of farmers (*n*)	Weak (Very poor + poor)	Percentage (%)	*p* value
Do not listen to FPs	434	386	86.7	0.00
Listen to FPs	31	17	54.8	
Total	465	403		
Variables	Number of farmers (*n*)	Average Knowledge	Percentage (%)	*p* value
Do not listen to FPs	434	40	9.2	0.00
Listen to FPs	31	11	35.5	
Total	465	51		
Variables	Number of farmers (*n*)	Good knowledge	Percentage (%)	*p* value
Do not listen to FPs	434	7	1.6	0.05486
Listen to FPs	31	2	6.5	
Total	465	9		
Variables	Number of farmers (*n*)	Very good knowledge	Percentage (%)	*p* value
Do not listen to FPs	434	1	0.2	0.01046
Listen to FPs	31	1	3.2	
Total	465	2		
Variables	Number of farmers (*n*)	Strong (Good +very good)	Percentage (%)	*p* value
Do not listen to FPs	434	8	1.8	0.0048
Listen to FPs	31	3	9.7	
Total	465	11		

Note: FP refers to farm programs of Bangladesh Betar.

4.1.1.2 Poor Knowledge in Farming

Poor knowledge is the level of knowledge where the farmers could answer to three to four questions. This level is also not adequate for farming. Among the farmers who listen to the farm programs 29.03% of them have poor knowledge; on the other hand 28.11% of the farmers who do not listen to the farm programs are poor in agricultural knowledge. That means, the non-listeners are in better position than the listeners in case of poor knowledge. For comparative analysis there should be a test of significance of

the difference. For testing (*z*-test) the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in case of poor knowledge.

H_1: There is difference between a listener and a non-listener in case of poor knowledge.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.5). That means there is no difference between a listener and a non-listener in poor level of knowledge.

4.1.1.3 Average Knowledge in Farming

The farmers who have got more than forty to sixty percent numbers belong to this level. There are more farmers among the listener group who have average level of knowledge than the non-listener group. So the listeners are better than the non-listener of the farm programs of Bangladesh Betar. For testing the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in case of average knowledge.

H_1: There is difference between a listener and a non-listener in case of average knowledge.

In the test (*z*-test) of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant. The null hypothesis is rejected at 5% confidence level (Table 4.5). That means, there is difference between the listener group and non-listener group

in average knowledge level, that is, the listeners are better than the non-listeners of the farm programs.

4.1.1.4 Good Knowledge in Farming

On an average 1.93% of the farmers are good at agricultural knowledge. But among the listeners 6.45% of the farmers are good; on the other hand 1.61% of the non-listeners are good at agricultural knowledge. The hypothesis for testing the significance of the difference of proportions at the level of good knowledge is as follows:

H_0: There is no difference between a listener and a non-listener in case of good knowledge.

H_1: There is difference between a listener and a non-listener in case of good knowledge.

In the test (*z*-test) of the hypothesis it is seen that *p* value is close to 0.05. So, the difference is significant and the null hypothesis is rejected at 10% confidence level (Table 4.5). That means, there is a difference between the listener group and non-listener group in having good knowledge and the listeners are better than the non-listeners.

4.1.1.5 Very Good Knowledge in Farming

Among all the respondents only 0.43% are with very good knowledge. The study has revealed that 3.23% of the farmers who listen to the farm programs are very good at farm knowledge; on the other hand, 0.23% of the farmers who do not listen to the farm programs are very good at farm knowledge. The hypothesis for testing significance of the difference between the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in case of very good knowledge.

H_1: There is difference between a listener and a non-listener in case of very good knowledge.

In the test (*z*-test) of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.5). That means, there is a difference between the listener group and non-listener group in having very good knowledge and the listeners are better than the non-listeners.

There are some farmers within the non-listener group who do not take suggestions of others in case of farming. But they are very few (19.4%) in number. Rather, most of the farmers though they do not listen to the farm programs, they take suggestions from others. On the other hand, there are some farmers (6.5%) among the listeners of farm programs who take suggestion from none but the farm programs of Bangladesh Betar. The rest 93.5% of the listeners of farm programs consult with other sources of farm information. As most of the farmers of both of the two groups (listener and non-listener) consult with other sources of farm information other than farm programs of Bangladesh Betar, the researcher assumes that the betterment of the knowledge of the farmers of the listener group is the result of listening to the farm programs.

To ease the analysis, the farmers have been regrouped as ʻweakʼ, ʻaverageʼ and ʻstrongʼ where the farmers with very poor and poor knowledge belong to ʻweak groupʼ, and the farmers with good and very good knowledge belong to ʻstrong groupʼ. After analyzing the knowledge of the farmers of ʻweakʼ, ʻaverageʼ and ʻstrongʼ group it has been seen that in every group the farmers who listen to the farm programs of

Bangladesh Betar are better than the farmers who do not listen to the farm programs of Bangladesh Betar (Table 4.5).

4.1.1.6 Degree of Effectiveness of the Farm Programs

As in the proportional test (*z*-test) it is seen that there is difference between the listener and non-listener group in case of farm knowledge and the farm program is effective in educating the listeners about the farm technologies, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in educating the farm programs listeners. Here, the model for regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (1)$$

where, p, probability of high farm knowledge (coded 1);

$1–p$, probability of low farm knowledge (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of regression analysis:

Table 4.6 The effects of farm programs on the farm knowledge of the farmers

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.890	0.392	23.256	0.000	6.623	3.071	14.279
Constant	-2.085	0.153	185.524	0.000	0.124		

Note: 'R, the reference category', 'CI, the confidence interval' and 'FP, the farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.05$) on the farm knowledge of the farmers. In the logistic regression model it is seen that if a farmer

listens to the farm programs, he/she is more likely to acquire farm knowledge 6.623 times (OR: 6.623; 95% CI: 3.071-14.279) higher than the farmers who do not listen to the farm programs.

4.1.2 Sector-wise Analysis of the Knowledge of Listeners and Non-listeners

This study involves farmers from three sectors- crop, livestock and fisheries. As the farm knowledge of each farmer has been tested with separate questions selected from respective sector, the analysis has been made sector-wise to know whether the impact of farm programs differs from sector to sector.

4.1.2.1 Crop Sector

The crop sector is the largest sector and so, most of the respondents are from this sector. In this research it has been seen that among the crop farmers most of them (66.91%) are very poor in agricultural knowledge (Table 4.7). Almost all the farmers (92.28%) of crop sector could not answer to more than four questions, that is, they do not have the knowledge enough for farming. In this research work it has been tried to compare the farm knowledge of the farmers who listen to the farm programs with the farm knowledge of the farmers who do not listen to the farm programs of Bangladesh Betar.

Table 4.7 Distribution of the farmers of crop sector by their farm knowledge

Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very poor	182	66.91	66.91
Poor	69	25.37	92.28
Average	19	6.98	99.26
Good	2	0.74	100.00
Total	272	100.00	

In the crop sector there are 255 farmers who do not listen to the farm programs and only 17 (6.25%) farmers listen to the farm programs out of 272 crop farmers of the total respondents. In the study it is seen that there is a clear difference between a listener

and a non-listener of farm programs in case of farm knowledge. Here an attempt has been made to analyze the knowledge according to the levels- ʻvery poorʼ, ʻpoorʼ, ʻaverageʼ, ʻgoodʼ and ʻvery goodʼ.

Table 4.8 Distribution of the listeners and non-listeners of crop sector by knowledge

Farmers who do not listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	177	69.41	69.41
Poor	63	24.71	94.12
Average	14	5.49	99.61
Good	1	0.39	100.00
Very Good	0	0	
Total	255	100.00	
Farmers who listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	5	29.41	29.41
Poor	6	35.30	64.71
Average	5	29.41	94.12
Good	1	5.88	100.00
Very Good	0	0	
Total	17	100.00	

4.1.2.1.1 Very Poor Knowledge in Crop Farming

In the crop sector most of the farmers are very poor in agricultural knowledge. In the study it is seen that 29.41% of the listeners are very poor in agricultural knowledge; on the other hand 69.41% of the non-listeners are very poor in agricultural knowledge (Table 4.8). That means, there are 40% more farmers within the non-listener group than the listener group who are very poor in farm knowledge. For testing (*z*-test) the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in case of very poor knowledge.

H_1: There is difference between a listener and a non-listener in case of very poor knowledge.

In the test of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant. The null hypothesis is rejected at 5% confidence level (Table 4.9). That means, there is a difference between the listener group and non-listener group in having very poor knowledge and the listeners are better than the non-listeners.

Table 4.9 Significance **t**est of the difference of proportions (crop Sector)

Variables	Number of farmers (*n*)	Very poor Knowledge	Percentage (%)	*p* value
Do not listen to FP	255	177	69.4	0.0008
Listen to FP	17	5	29.4	
Total	272	182		
Variables	Number of farmers (*n*)	Poor knowledge	Percentage (%)	*p* value
Do not listen to FP	255	63	24.7	0.3316
Listen to FP	17	6	35.3	
Total	272	69		
Variables	Number of farmers (*n*)	Average knowledge	Percentage (%)	*p* value
Do not listen to FP	255	14	5.5	0.0002
Listen to FP	17	5	29.4	
Total	272	19		
Variables	Number of farmers (*n*)	Good knowledge	Percentage (%)	*p* value
Do not listen to FP	255	1	0.4	0.0112
Listen to FP	17	1	5.9	
Total	272	2		

Note: FP refers to farm programs of Bangladesh Betar.

4.1.2.1.2 Poor Knowledge in Crop Farming

In the study it is seen that 24.71% of the non-listener group are poor in agricultural knowledge; on the other hand, 35.30% of the listener group are poor in agricultural knowledge (Table 4.8). That is, there are 10.59% more farmers within the listener group than the non-listener group who are poor in agricultural knowledge. For testing (*z*-test) the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in case of poor knowledge.

H_1: There is difference between a listener and a non-listener in case of poor knowledge.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.9). That means, there is no difference between the listener group and non-listener group in having poor knowledge.

4.1.2.1.3 Average Knowledge in Crop Farming

Average knowledge level is better than very poor and poor level of knowledge and it is a satisfactory level of knowledge. The study has revealed that there are 23.9% more farmers within the listener group than the non-listener group who are average in agricultural knowledge. To test the significance (*z*-test) of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of average knowledge.

H_1: There is difference between a listener and a non-listener in case of average knowledge.

In the test of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.9). That means, there is a difference between the listener group and non-listener group in having average knowledge and the listeners are better than the non-listeners.

4.1.2.1.4 Good Knowledge in Crop Farming

In this study it has been seen that only 0.74% of the farmers are good in agricultural knowledge (Table 4.7). Among the non-listeners there are only 0.39% farmers who are good in agricultural knowledge; on the other hand 5.88% of the farmers who listen to the farm programs are good in agricultural knowledge. The listeners are better than non-

listeners in agricultural knowledge. To test (*z*-test) the significance of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of good knowledge.

H_1: There is difference between a listener and a non-listener in case of good knowledge.

In the test of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.9). That means there is a difference between the listener group and non-listener group in having good knowledge and the listeners are better than the non-listeners.

4.1.2.1.5 Very Good Knowledge in Crop Farming

This study has revealed that there is not a single farmer who is very good in agricultural knowledge both in the listener and non-listener groups. That means, there is none among the respondents who is completely sound in agricultural knowledge.

In this study it is seen that in the crop sector the farmers who listen to the farm programs are better than the farmers who do not listen to the farm programs. That means, the farm programs are effective in educating the farmers about the new farm technologies.

4.1.2.2 Livestock Sector

In the study it is seen that the knowledge level of the farmers varies from sector to sector. The number of farmers with very poor knowledge is more in the livestock sector than other two sectors. Here an attempt has been made to compare the knowledge of the

farmers who listen to the farm programs with those who do not listen to the farm programs.

To facilitate the analysis and significance test (*z*-test) of the proportions the knowledge levels have been rearranged as 'weak' (very poor + poor), 'average' and 'strong' (very good + good) as follows:

Table 4.10 Distribution of the farmers of livestock sector by their knowledge

Farmers who do not listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of Farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	53	76.81	76.81
Poor	9	13.04	89.85
Weak		89.85	
Average	5	7.25	97.10
Good	2	2.90	100.00
Very Good	0	0	
Strong		2.90	
Total	69	100.00	
Farmers who listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of Farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	2	33.33	33.3
Poor	0	0	
Weak		33.33	
Average	3	50.0	83.33
Good	0	0	
Very Good	1	16.67	100.00
Strong		16.67	
Total	6	100.00	

4.1.2.2.1 Weak Knowledge in Farming Livestock

In the study it is seen that 89.85% of the non-listeners in livestock sector are weak in farm knowledge; on the other hand 33.33% of the listeners are weak in farm knowledge (Table 4.10). The difference shows that the listeners are better than the non-listeners in agricultural knowledge. To test the significance of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of weak knowledge.

H_1: There is difference between a listener and a non-listener in case of weak knowledge.

In the test of the hypothesis (*z*-test) it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.11). That means there is difference between the listener group and non-listener group in having weak knowledge and the listeners are better than the non-listeners of the farm programs.

4.1.2.2.2 Average Knowledge in Farming Livestock

In the average level of agricultural knowledge there are 42.75% more farmers within the listener group than the non-listener group who are average in agricultural knowledge which is more satisfactory than the weak level of knowledge. In livestock sector the difference between the listener and non-listener at the average level of agricultural knowledge proves that a listener of farm programs is better than a non-listener. To test the significance of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of average knowledge.

H_1: There is difference between a listener and a non-listener in case of average knowledge.

In the test of the hypothesis (*z*-test) it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.11). That means there is difference between the listener group and non-listener group in having average knowledge and the listeners of farm programs are better than the non-listeners.

Table 4.11 Significance test of difference of proportions

Variable	Number of farmers (*n*)	Weak Knowledge	Percentage (%)	*p* value
Do not listen to FP	69	62	89.85	0.00018
Listen to FP	6	2	33.33	
Total	75	64		
Variable	Number of farmers (*n*)	Average knowledge	Percentage (%)	*p* value
Do not listen to FP	69	5	7.25	0.00116
Listen to FP	6	3	50.00	
Total	75	8		
Variable	Number of farmers (*n*)	Strong knowledge	Percentage (%)	*p* value
Do not listen to FP	69	2	2.90	0.09894
Listen to FP	6	1	16.67	
Total	75	3		

Note: FP refers to the farm programs of Bangladesh Betar.

4.1.2.2.3 Strong Knowledge in Farming Livestock

It has been seen that 16.67% of the livestock farmers who listen to the farm programs are strong in agricultural knowledge. On the other hand 2.90% of the livestock farmers who do not listen to the farm programs are strong at agricultural knowledge. That means there are 13.77% more farmers within the listener group than the non-listener group who are strong at agricultural knowledge (Table 4.10). To test (*z*-test) the difference of the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of strong knowledge.

H_1: There is difference between a listener and a non-listener in case of strong knowledge.

In the test of hypothesis it is seen that the null hypothesis is accepted at 5% confidence level ($p > 0.05$). That means the listeners and the non-listeners are the same. The farmers who listen to the farm programs are equal to the farmers who do not listen to the farm programs. But, as the null hypothesis is accepted at 10% confidence level, the researcher concludes that the farm programs have impact on the strong level of

knowledge. That means the farmers who listen to the farm programs are better than the non-listeners.

The overall conclusion is that the farm programs of Bangladesh Betar are effective in educating the livestock farmers.

4.1.2.3 Fisheries Sector

In the study it is seen that the farm knowledge among the farmers in the fisheries sector varies from listener to non-listener (Table 4.12). At first the farm knowledge of the farmers were categorized into five levels (‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’). Then a comparison has been made between the listener group and the non-listener group based on their secured numbers. Within the non-listener group there are more farmers who are very poor in agricultural knowledge than listener group. It is seen that at every level of knowledge the listeners are better than the non-listeners of the farm programs (Table 4.12). A clear picture is being depicted in the following Table 4.12:

Table 4.12 Distribution of the farmers of fisheries sector by their knowledge

Farmers who do not listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	34	30.91	30.91
Poor	50	45.45	76.36
Weak (very poor + poor)	84	76.36	
Average	21	19.09	95.45
Good	4	3.64	99.1
Very Good	1	0.91	100.00
Strong (good + very good)	5	4.54	
Total	110	100.00	
Farmers who listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	1	12.50	12.50
Poor	3	37.50	50.00
Weak (very poor + poor)	4	50.00	
Average	3	37.50	87.50
Good	1	12.50	100.00
Very Good	0	0	
Strong (good + very good)	1	12.50	
Total	8	100.00	

To ease the test (*z*-test) of hypothesis the levels of knowledge have been rearranged as ʻweakʼ, ʻaverageʼ and ʻstrongʼ and the difference of proportions have been tested which is as follows:

Table 4.13 Significance test of difference of proportions

Variable	Number of farmers (*n*)	Weak Knowledge	Percentage (%)	*p* value
Do not listen to FP	110	84	76.4	0.09692
Listen to FP	8	4	50	
Variable	Number of farmers (*n*)	Average knowledge	Percentage (%)	*p* value
Do not listen to FP	110	21	19.1	0.27134
Listen to FP	8	3	37.5	
Variable	Number of farmers (*n*)	Strong knowledge	Percentage (%)	*p* value
Do not listen to FP	110	5	4.5	0.31732
Listen to FP	8	1	12.5	

Note: FP refers to farm programs of Bangladesh Betar

4.1.2.3.1 Weak Knowledge in Fish Farming

In the research it is seen that 76.36% of the farmers who do not listen to the farm programs are weak in agricultural knowledge; on the other hand 50% of the farmers who listen to the farm programs are weak in agricultural knowledge (Table 4.12). That is, the listeners of farm programs are better than the non-listeners of the farm programs. To test (*z*-test) the significance of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of weak knowledge in fish farming.

H_1: There is difference between a listener and a non-listener in case of weak knowledge in fish farming.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.13). That means, there is no difference between the listener group and non-listener group in

having weak knowledge. But, as the null hypothesis is rejected at 10% confidence level, the researcher concludes that the farm programs have impact on the weak level of knowledge. That means the farmers who listen to the farm programs are better than the non-listeners.

4.1.2.3.2 Average Knowledge in Fish Farming

In this study it is seen that 19.09% of the farmers who do not listen to the farm programs of Bangladesh Betar are average in agricultural knowledge; on the other hand, 37.50% of the farmers who listen to the farm programs are average in agricultural knowledge (Table 4.12). That means more farmers of the listener group are better than those of non-listener group. To test (*z*-test) the significance of this difference between the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of average knowledge.

H_1: There is difference between a listener and a non-listener in case of average knowledge.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.13). That means, there is no difference between a listener and a non-listener in having average knowledge, that is, the listeners are same to the non-listeners.

4.1.2.3.3 Strong Knowledge in Fish Farming

In this study it is seen that 12.5% of the listeners of the farm programs have got more than 60% numbers in the test. On the other hand, only 4.54% of the non-listeners have got more than 60% numbers (Table 4.12). That means, the listeners are better than the

non-listeners at strong knowledge level in the fisheries sector. To test (*z*-test) the difference of the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in case of strong category of knowledge.

H_1: There is difference between a listener and a non-listener in case of strong category of knowledge.

The null hypothesis is accepted at 5% confidence level ($p > 0.05$). That means the listeners and the non-listeners are the same. The farmers who listen to the farm programs are equal to the farmers who do not listen to the farm programs.

In this study it is seen that in every sector of agriculture the percentage of the farmers who listen to the farm programs are more than the farmers who do not listen to the farm programs at average and strong level of knowledge. At the weak (very poor and poor) level the number of the farmers who listen to the farm programs are less than the farmers who do not listen to the farm programs. That means the listeners are better than the non-listeners. At all the levels of agricultural knowledge the differences are not significant. The researcher assumes that the cause of the insignificance of the differences may be the irregular and inadequate listening to the farm programs. So, the researcher concludes that the farm programs of Bangladesh Betar have impacts on the agricultural knowledge of the farmers, which means the farm programs are effective in educating the farmers.

4.1.3 Government Agencies, TV, Salesmen and Fellow Farmers versus Farm Program

In this study it has been seen that the farmers naturally collect their farm information from the following five sources:

a) Fellow farmers,

b) Salesman of fertilizer, seeds, pesticides and medicine (individual salesman, company agents/dealers, company doctors/consultants/leaflets and so on),

c) Agricultural departments (agriculture officer, veterinary surgeon and fisheries officer),

d) Farm programs of TV, and

e) Farm programs of Bangladesh Betar.

In order to measure the impact of farm programs on the farm knowledge of the farmers the researcher has sorted out 84 (18.06%) farmers who consult with four sources other than the farm programs of Bangladesh Betar. Then the researcher has tried to compare the agricultural knowledge of these eighty four respondents with the respondents who listen to the farm programs.

Table 4.14 Distribution of the farmers (listeners and non-listeners of FP) by their knowledge

Farmers who do not listen to the FPs of BB but follow all other sources of information			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	39	46.43	46.43
Poor	25	29.76	76.19
Average	16	19.05	95.24
Good	4	4.76	100.000
Very Good	0	0	
Total	84	100.00	
Farmers who listen to the farm programs of Bangladesh Betar			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	8	25.81	25.8
Poor	9	29.03	54.8
Average	11	35.48	90.3
Good	2	6.45	96.8
Very Good	1	3.23	100.00
Total	31	100.00	

Note: Here FP refers to farm programs of Bangladesh Betar and BB refers to Bangladesh Betar.

It has been seen that 46.43% of the farmers who do not listen to the farm programs are very poor in agricultural knowledge; on the other hand, 25.81% of the farmers who listen to the farm programs are very poor in agricultural knowledge. At every stage of knowledge-'very poor', 'poor', 'average', 'good' and 'very good', the listeners of the farm programs are better than the non-listeners ((Table 4.14).

For facilitating the test (*z*-test) of hypothesis the levels of agricultural knowledge have been rearranged in the following ways:

Table 4.15 Redistribution of the farmers (listeners and non-listeners of FP) by their farm knowledge

Farmers who do not listen to the FPs of BB but follow all other sources of information		
Level of Knowledge	Number of farmers (*n*)	Percentage (%)
Weak	64	76.2
Average	16	19.0
Strong	4	4.8
Total	84	100.00
Farmers Who Listen to the Farm Programs of Bangladesh Betar		
Level of Knowledge	Number of farmers (*n*)	Percentage (%)
Weak	17	54.8
Average	11	35.5
Strong	3	9.7
Total	31	100.00

Note: Here FP refers to farm programs of Bangladesh Betar and BB refers to Bangladesh Betar.

4.1.3.1 Weak Knowledge in Farming

In this study it has been seen that more farmers of the non-listener group are weaker in agricultural knowledge than the farmers of the listener group (Table 4.15). The hypothesis for testing (*z*-test) the difference of the proportions is as follows:

H_0: Both the listeners and the non-listeners are equally weak in agricultural knowledge.

H_1: Both the listeners and the non-listeners are not equally weak in agricultural knowledge.

In the test of the hypothesis it is seen that *p* value is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 4.16). That means, the listeners and the non-listeners of the FPs of BB are not equally weak in agricultural knowledge, that is, the listeners are better than the non-listeners of the farm programs of Bangladesh Betar.

Table 4.16 Significance test of difference of proportions

Variable	Number of farmers (*n*)	Weak Knowledge	Percentage (%)	*p* value
Do not listen to FP	84	64	76.2	0.02574
Listen to FP	31	17	54.8	
Variable	Number of farmers (*n*)	Average knowledge	Percentage (%)	*p* value
Do not listen to FP	84	16	19	0.06432
Listen to FP	31	11	35.5	
Variable	Number of farmers (*n*)	Strong Knowledge	Percentage (%)	*p* value
Do not listen to FP	84	4	4.8	0.32708
Listen to FP	31	3	9.7	

Note: FP refers to the farm programs of Bangladesh Betar.

4.1.3.2 Average Knowledge in Farming

The study has revealed that there are more farmers (35.5%) among the listeners of the farm programs of Bangladesh Betar who are average in agricultural knowledge than the non-listeners (19%) of the farm programs (Table 4.15). To test the difference of the proportions the following hypothesis has been developed:

H_0: There is no difference between a listener and a non-listener in average agricultural knowledge.

H_1: There is difference between a listener and a non-listener in average agricultural knowledge.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.16). That means the listeners and the non-listeners are equally average in

agricultural knowledge. But as the null hypothesis is rejected at 10% confidence level, the researcher has concluded that the listeners of the farm programs are better than the non-listeners in average knowledge of agriculture.

4.1.3.3 Strong Knowledge in Farming

It has been seen that 4.8% of the farmers who do not listen to the farm programs but get information from other four sources of information are strong in agricultural knowledge. On the other hand, 9.7% of the farmers who listen to the farm programs of Bangladesh Betar are strong in agricultural knowledge (Table 4.15). There are 4.9% more farmers within the listener group than the non-listener group who are strong in agricultural knowledge. To test (*z*-test) the difference of the proportions the following hypothesis has been developed:

H_0: Both the listeners and the non-listeners are equally strong in agricultural knowledge.

H_1: Both the listeners and the non-listeners are not equally strong in agricultural knowledge.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 4.16). That means, there is no difference between a listener and a non-listener in case of strong level of agricultural knowledge.

4.1.3.4 Degree of Effectiveness of the Farm Programs

In comparison of the farm knowledge of the farmers who listen to the farm programs of Bangladesh Betar with that of the farmers who take farm information from all the sources of information other than farm programs of Bangladesh Betar it has been seen

that the farm programs are effective in educating the farmers. And as in the proportional test (*z*-test) it has been seen that there is a difference between the listener and non-listener group in case of farm knowledge through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs in educating listeners of the farm programs. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (2)$$

where, p, probability of high farm knowledge (coded 1);

$1-p$, probability of low farm knowledge (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 4.17 The effects of the farm programs on the farm knowledge of the farmers

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	0.969	0.443	4.794	0.029	2.635	1.107	6.274
Constant	-1.163	0.256	20.616	0.000	0.313		

Note: 'R, the reference category', 'CI, the confidence interval' and 'FP, the farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effects ($p < 0.05$) on the farm knowledge of the farmers. In the logistic regression model it is seen that if a farmer listens to the farm programs of Bangladesh Betar along with consulting with other sources of farm information, he/she is more likely to acquire farm knowledge 2.635

times (OR: 2.635; 95% CI: 1.107 - 6.274) higher than the farmers who do not listen to the farm programs.

In this study, it is seen that the farm programs are very much effective in educating the farmers. At all the levels of knowledge the listeners of the farm programs are in better position than the farmers who get information from all the sources other than the farm programs of Bangladesh Betar. Though all the farmers should be sound in agricultural knowledge, most of the farmers of both the groups (listener and non-listener) are not sound enough to conduct their farming.

But it does not bear the testimony to the failure or ineffectiveness of the farm programs of Bangladesh Betar. Because, most of the farmers do not listen to the farm programs and most of the farmers who listen to the farm programs do not listen to the programs regularly. Only 25.8% of the listeners listen to the whole of a single program out of the three programs broadcast daily from a radio station. So, the researcher has concluded that the farm programs are effective in educating the farmers about the new technologies of farming.

4.1.4 Farm Training versus Farm Programs

Training on farming is one of the main sources of agricultural knowledge. Here an attempt has been made to know whether the farm programs have any impact on the agricultural knowledge of the farmers who have training on farming. It has been seen that 26.45% of the farmers are trained. This study has also revealed that only 5.69% of the trained farmers are good at agricultural knowledge (Table 4.18).

Table 4.18 Distribution of the trained farmers by their farm knowledge

Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very Poor	31	25.20	25.20
Poor	48	39.02	64.22
Average	35	28.46	92.68
Good	7	5.69	98.37
Very Good	2	1.63	100.00
Total	123	100.00	

It has been seen that the trained farmers who listen to the farm programs are better in agricultural knowledge than those trained farmers who do not listen to the farm programs (Table 4.19).

Table 4.19 Distribution of the trained farmers by their farm knowledge

Farmers who have agricultural training but do not listen to the FP of BB			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very poor	30	27.52	27.5
Poor	45	41.28	68.8
Average	27	24.77	93.6
Good	6	5.51	99.1
Very good	1	0.92	
Total	109	100.00	
Farmers who have agricultural training and listen to the FP of BB			
Level of Knowledge	Number of farmers (*n*)	Percentage (%)	Cumulative percentage (%)
Very poor	1	7.14	7.14
Poor	3	21.43	28.57
Average	8	57.15	85.72
Good	1	7.14	92.86
Very good	1	7.14	100.00
Total	14	100.00	

Note: Here FP refers to farm programs of Bangladesh Betar and BB refers to Bangladesh Betar.

In the study it has been seen that at every stage- ʻvery poorʼ, ʻaverageʼ, ʻgoodʼ and ʻvery goodʼ, the trained listeners of the farm programs are better than the trained non-listeners (Table 4.19). To ease the analysis, the farmers have been regrouped as ʻweakʼ, ʻaverageʼ and ʻstrongʼ where the farmers with very poor and poor knowledge belong to ʻweak-groupʼ and the farmers with good and very good knowledge belong to ʻstrong-groupʼ (Table 4.20).

Table 4.20 Redistribution of trained farmers (listeners and non-listeners) by their firm knowledge

Trained farmers who do not listen to the farm programs of Bangladesh Betar		
Level of Knowledge	Number of farmers (*n*)	Percentage (%)
Weak (Very poor + poor)	75	68.81
Average	27	24.77
Strong (Good + very good)	7	6.42
Total	109	100.00
Trained farmers who listen to the farm programs of Bangladesh Betar		
Level of Knowledge	Number of farmers (*n*)	Percentage (%)
Weak (Very poor + poor)	4	28.57
Average	8	57.14
Strong (Good + very good)	2	14.29
Total	14	100.00

After regrouping the knowledge levels of the trained farmers who listen to the farm programs and the trained farmers who do not listen to the farm programs tests of the significance of the differences of the proportions have been done and the results are in the following table (Table 4.21):

Table 4.21 Significance test of difference of two proportions of trained farmers

Variables	Number of farmers (*n*)	Weak knowledge	Percentage (%)	*p* value
Do not listen to FP	109	75	68.8%	0.00308
Listen to FP	14	4	28.6%	
Variables	Number of farmers (*n*)	Average knowledge	Percentage (%)	*p* value
Do not listen to FP	109	27	24.8%	0.01174
Listen to FP	14	8	57.1%	
Variables	Number of farmers (*n*)	Strong knowledge	Percentage (%)	*p* value
Do not listen to FP	109	7	6.4%	0.28914
Listen to FP	14	2	14.3%	

Note: FP refers to Farm Programs of Bangladesh Betar.

4.1.4.1 Weak Knowledge in Farming

In the study it is seen that most of the farmers who are trained but do not listen to the farm programs of Bangladesh Betar are weak in agricultural knowledge. The number of farmers with weak knowledge is less within the 'trained and listener' group than the 'trained but non-listener' group (Table 4.20). To test (*z*-test) the difference between the proportions the hypothesis is as follows:

H_0: There is no difference between a trained listener and a trained non-listener in case of weak level of knowledge.

H_1: There is difference between a trained listener and a trained non-listener in case of weak level of knowledge.

The null hypothesis is rejected at 5% confidence level ($p < 0.05$). That means the listeners and the non-listeners are not the same in case of weak knowledge. The trained farmers who do not listen to the farm programs are weaker than the trained farmers who listen to the farm programs.

4.1.4.2 Average Knowledge in Farming

This study has revealed that the farmers with average category of knowledge are more in number within the listener group than the non-listener group (Table 4.18). To test (*z*-test) the difference of the proportion the following hypothesis has been developed:

H_0: There is no difference between a trained listener and a trained non-listener in case of average category of knowledge.

H_1: There is difference between a trained listener and a trained non-listener in case of average category of knowledge.

Here the null hypothesis is rejected at 5% confidence level ($p < 0.05$). That means the listeners and the non-listeners are not the same in case of average farm knowledge. The trained farmers who listen to the farm programs are better than the trained farmers who do not listen to the farm programs.

4.1.4.3 Strong Knowledge in Farming

It has been seen that 14.29% of the trained farmers who listen to the farm programs are strong in agricultural knowledge; on the other hand, 6.42% of the trained farmers who do not listen to the farm programs are strong at agricultural knowledge (Table 4.20). That means there are 7.9% more farmers within listener group than non-listener group who are strong at agricultural knowledge. To test (*z*-test) the significance of the difference of the proportions the following hypothesis has been developed:

H_0: There is no difference between a trained listener and a trained non-listener in case of strong knowledge.

H_1: There is difference between a trained listener and a trained non-listener in case of strong knowledge.

In the test it is seen that the null hypothesis is accepted at 5% confidence level ($p > 0.05$). That means the listeners and the non-listeners are the same. The trained farmers who listen to the farm programs are equal to the trained farmers who do not listen to the farm programs in case of strong knowledge in agriculture.

Though the statistical test proves that at the strong level of knowledge there is no impact of farm programs on the listeners yet the researcher concludes that the farm programs have a great impact on the farm knowledge of the farmers and it can play a significant complementary role along with farm training in educating the farmers. And at this perspective the farm programs are effective.

4.1.4.4 Degree of Effectiveness of the Farm Programs

As in the proportional test (*z*-test) it has been seen that there is difference between the trained listener and trained non-listener groups in case of farm knowledge and the farm

program is effective in educating the listeners about the farm technologies, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in educating the listeners of the farm programs. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (3)$$

where, p, probability of high farm knowledge (coded 1);

1–p, probability of low farm knowledge (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of regression analysis

Table 4.22 The effects of farm programs on the farm knowledge of the farmers

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.751	0.627	7.788	0.005	5.758	1.684	19.686
Constant	-0.834	0.208	16.013	0.000	0.434		

Note: 'R, the reference category', 'CI, the confidence interval' and 'FP, the farm programs of Bangladesh Betar'.

In the regression model it is seen that if a farmer who has farm training listens to the farm programs of Bangladesh Betar, he/she is more likely to acquire farm knowledge 5.758 times (OR: 5.758; 95% CI: 1.684 - 19.686; $p < 0.05$) higher than the farmers who have farm training but do not listen to the farm programs of Bangladesh Betar.

4.2 Conclusion

In pursuance of the above analysis and discussion it can be concluded that the farm programs of Bangladesh Betar are very much effective in educating the farmers about the modern technologies of farming. The study reveals that most of the farmers do not listen to the farm programs of Bangladesh Betar. Even, those who listen to the farm programs do not listen to the programs regularly. Still, the impact of listening to the farm programs is quite obvious among the listeners of the farm programs. There is a clear difference between the listener and non-listener of the farm programs. At almost every level of agricultural knowledge the listeners of the farm programs are at better position than the non-listeners of the farm programs of Bangladesh Betar.

It is also proved that the farm programs can be a better complement to other mechanisms for educating the farmers about the farm technologies. So, all the farmers should listen to the farm programs of Bangladesh Betar and the concerned authorities should adopt necessary means to encourage the farmers to listen to the farm programs regularly so that they can be aware of modern farm technologies and the benefits of using the technologies. And for this reason interdepartmental collaboration should be enhanced.

CHAPTER FIVE

FARM PROGRAMS AND MOTIVATION OF THE FARMERS

5 Introduction

Most of the farmers engaged in agricultural activities have superficial knowledge on modern agro-technology and agro-information. On the other hand, farmers' access to different information sources is not adequate.[112] Most of the farmers use multiple sources of information for accepting or rejecting new practices.[113] Proper use of information by the farmers would help to achieve maximum production in their farms.[114] So, the farmers should be encouraged to adopt new modern uses of technologies. In recent past, considerable resources have been invested in the country as a result there are some matured technologies for farmers.[115] The basic function of extension is to assist the transfer of appropriate technologies among the farmers. The transfer of technologies, however, to a great extent depends on the effective use of different communication media.[116] Bangladesh Betar from the very beginning has been trying to disseminate extension related information to the farmers. Because it is proved that rural farmers in particular in many regions of the world find radio as a veritable

[112] M. A. Kashem and M. S. Islam, "Information Sources Used by Farmers Regarding the Use of Agro-Chemicals," *Bangladesh Journal of Extension Education,* Vol. 13, No. 1 & 2, 2001, p. 71.

[113] R. G. Mason, "The Use of Information Sources in the Process of Adoption", *Rural Sociology*, Vol. 29, No. 1, 1964, p. 49-52.

[114] M. A. Kashem and M. S. Islam, "Information Sources Used by Farmers Regarding the Use of Agro-Chemicals," *Bangladesh Journal of Extension Education,* Vol. 13, No. 1 & 2 2001, p. 71.

[115] M. A. Kashem and M. Zulfikar Rahman, "Relationship of Selected Personal and Economic Attributes of the Block Supervisors with their Credibility as Communicators", *Bangladesh Journal of Training and Development,* Vol. 8, No. 1 & 2, 1995, p. 34.

[116] M. A. Kashem, A. Halim and M. Zulfikar Rahman, "Farmers' Use of Communication Media in Adopting Agricultural Technologies- A Farm Level Study in Bangladesh," *Asia-Pacific Journal of Rural Development,* Vol. II, No. 1, July, 1992, p. 95.

source of deriving extension related information.[117] And listening farm programs especially in group is very influential in changing beliefs and attitudes towards innovations.[118] In the innovation-decision process, mass media channels are important means to create knowledge and spread information rapidly to a large audience and can change some weakly held attitudes.[119]

In this chapter it has been tried to see whether the farm programs of Bangladesh Betar are effective to motivate the farmers to adopt the new technologies and change their long cherished mindset.

5.1 Results and Discussions

In this study an attempt has been made to know the impact of the farm programs of Bangladesh Betar on the farm practices of the farmers. The farm practices vary from sector to sector. And so, the impact has been analyzed sector wise. Firstly, some scientific practices have been specified according to the sectors. Then, a comparative analysis has been made between the two groups of farmers- (i) listener group and (ii) non-listener group.

5.1.1 Crop Sector

In the crop sector ten scientific practices based on which the comparison has been made are as follows:

[117] T.O. Fadiji, "Effectiveness of Radio in Dissemination of Agricultural Information to Farmers in Rural Settings of Nigeria", *Global Journal of Social Sciences*, Vol. 4, No. 1 & 2, 2005, p. 33.

[118] N. C. Jain, "An Experimental Investigation of the Effectiveness of Commitment and Consensus in India Radio Forum," Unpublished doctoral dissertation, Michigan State University, Cited in "The Use of Educational Rural in Developing Countries: Lesson from the Past," http://www1. worldbank. org/disted/ Technology/broadcast/rad-01.html, Accessed on 25th December 2014.

[119] M. M. Escalada et al. "Communication and Behavior Change in Rice Farmers' Pest Management: The Case of Using Mass Media in Vietnam," *Journal of Applied Communication*, Vol. 83, No. 1, 1999, p. 24.

a) Integrated Pest Management (IPM),

b) Using balanced fertilizer,

c) Using guti urea,

d) Using pesticides in the scientific way,

e) Preparing scientific seed beds,

f) Harvesting crops separately for seeds,

g) Irrigation at the critical moment of the crops,

h) Using organic fertilizers,

i) Drying seeds at times, and

j) Examining the soil before using fertilizers.

In this study it has been seen that most of the farmers are accustomed to traditional practices. Most of the farmers do not follow the scientific practices which are being shown in the following Table 5.1.

Table 5.1 Distribution of the farmers following scientific practices (crop sector)

Scientific practices	*Farmers (*n*)	Percentage (%)
Follow Integrated Pest Management (IPM)	28	10.29
Use balanced fertilizers	20	7.35
Use guti urea	18	6.61
Use pesticides in the proper ways	44	16.17
Use scientific seed bed	28	10.29
Harvesting seed crop separately	114	41.91
Irrigate at the critical moments of the crops	7	2.57
Use organic fertilizers	196	72.05
Dry seeds at times	148	54.41
Test the soil before using fertilizers	4	1.47

Note: Total number of farmers in crop sector is 272. *There are multiple responses.

5.1.1.1 Integrated Pest Management (IPM)

Excessive use of pesticides makes the crop or vegetables toxic which is harmful for mankind. So, experts suggest following IPM where natural management of pests is encouraged. In this research it has been seen that only 10.29% of the farmers follow

IPM (Table 5.1). The study also reveals that 23.52% of the farmers who listen to farm programs of Bangladesh Betar follow IPM; on the other hand 09.80% of the farmers who do not listen to the farm program follow IPM. That means the listeners follow IPM more than the non-listeners. To test the significance of difference of the proportions the hypothesis are as follows:

H_0: There is no difference between a listener and a non-listener of the FP in following IPM.

H_1: There is difference between a listener and a non-listener of FP in following IPM.

Table 5.2 Significance test of difference of proportions of farm practices (crop sector)

Name of Practices	Variables	Number of farmers (*n*)	Practicing Farmers	percentage (%)	*p* values
Integrated Pest Management (IPM)	Non-listener of FP	255	25	09.80	0.0774
	Listener of FP	17	4	23.52	
Using Balanced Fertilizer	Non-listener of FP	255	16	6.27	0.0091
	Listener of FP	17	4	23.52	
Using Guti Urea	Non-listener of FP	255	13	5.09	0.0004
	Listener of FP	17	5	29.41	
Using Pesticides Scientifically	Non-listener of FP	255	38	14.90	0.0278
	Listener of FP	17	6	35.29	
Scientific Seedbed	Non-listener of FP	255	24	9.41	0.0649
	Listener of FP	17	4	23.52	
Harvesting Seeds separately	Non-listener of FP	255	102	40	0.0139
	Listener of FP	17	12	70.58	
Irrigation at Critical moment	Non-listener of FP	255	6	2.35	0.3824
	Listener of FP	17	1	5.88	
Using Organic Fertilizer	Non-listener of FP	255	184	72.15	0.88866
	Listener of FP	17	12	70.58	
Drying seeds at times	Non-listener of FP	255	138	54.11	0.70394
	Listener of FP	17	10	58.82	
Examining the soil for using fertilizers	Non-listener of FP	255	4	1.56	0.59612
	Listener of FP	17	0	0	

Note: Here FP refers to the farm programs of Bangladesh Betar.

The *p* value got after testing (*z*-test) the hypothesis is 0.0774 (Table 5.2) which is more than 0.05.That means the null hypothesis is accepted at 5% confidence level. But as the null hypothesis is rejected at 10% confidence level, the researcher concludes that the listeners are more likely to follow IPM than the non-listeners.

5.1.1.1.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it is seen that there is difference between the listener and non-listener group in case of following IPM and the farm program is effective in motivating the listeners to adopt modern farm technologies, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in motivating listeners of the farm programs. Here, the model for regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (4)$$

where, p, probability of following IPM (coded 1);

$1–p$, probability of not following IPM (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of the logistic regression analysis:

Table 5.3 The effects of listening to the farm programs on following IPM

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.086	0.611	3.161	0.075	2.962	0.895	9.802
Constant	-2.264	0.214	111.474	0.000	0.104		

Note: 'R, the reference category', 'CI, the confidence interval' and 'FP, the farm programs of Bangladesh Betar'.

In the regression model it has been seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to follow IPM 2.962 times (OR: 2.962; 95% CI: 0.895 - 9.802; $p < 0.10$) higher than the farmers who do not listen to the farm programs.

5.1.1.2 Using Balanced Fertilizer

Balanced fertilizer is essential for increasing production and retaining soil quality. Imbalanced use of fertilizer destroys the fertility of soil. In Bangladesh only 7.35% of the farmers use balanced fertilizer (Table 5.1). The study reveals that 23.52% of the farmers who listen to the farm programs of Bangladesh Betar use balanced fertilizer. On the other hand, 06.27% of the farmers who do not listen to the farm programs of Bangladesh Betar use balanced fertilizer. That means the listeners use balanced fertilizer more than the non-listeners. For testing (*z*-test) the significance of the difference of the proportions the hypothesis is as follows:

H_0: There is no difference between a listener and a non-listener in using balanced fertilizers.

H_1: There is difference between a listener and a non-listener in using balanced fertilizers.

In the test of the hypothesis it is seen that *p* value (0.0091) is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 5.2). There is difference between the listener group and non-listener group in using balanced fertilizers, that is, the listeners use balanced fertilizer more than the non-listeners.

5.1.1.2.1 Degree of Effectiveness of the Farm Programs

As the farm programs are effective in motivating the listeners in using balanced fertilizers an effort has been made to measure the degree of effectiveness and the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (5)$$

where, p, probability of using balanced fertilizer (coded 1);

1–p, probability of not using balanced fertilizer (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis

Table 5.4 The effects of listening to the farm programs on using balanced fertilizer

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.525	0.627	5.910	0.015	4.596	1.344	15.719
Constant	-2.704	0.258	109.635	0.000	0.067		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar

Listening to the farm programs has significant effect ($p < 0.05$) on using balanced fertilizers. In the regression model it has been seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to use balanced fertilizer 4.596 times (OR: 4.596; 95% CI: 1.344 - 15.719) higher than the farmers who do not listen to the farm programs of Bangladesh.

5.1.1.3 Using Guti Urea

According to the experts Guti Urea is better than the normal urea in respect of both quality and cost. Research finding is that only 6.61% of the farmers use guti urea (Table 5.1). The study reveals that 29.41% of the farmers who listen to the farm programs of Bangladesh Betar use guti urea. On the other hand, 5.09% of the farmers who do not

listen to the farm programs use guti urea. That means the listeners use guti urea more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in using guti urea.

H_1: There is difference between a listener and a non-listener in using guti urea.

In the test of the hypothesis it is seen that *p* value (0.0004) is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 5.2). There is difference between the listener group and non-listener group in using guti urea. The listeners use guti urea more than the non-listeners of the farm programs.

5.1.1.3.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is difference between the listener and non-listener group in case of using guti urea and the farm program is effective in motivating the listeners to adopt modern farm technologies, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in motivating the listeners. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (6)$$

where, *p*, probability of using guti urea (coded 1);

1–*p*, probability of not using guti urea (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of regression analysis:

Table 5.5 The effects of listening to the farm programs on using guti urea

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	2.049	0.604	11.516	0.001	7.756	2.376	25.321
Constant	-2.924	0.285	105.480	0.000	0.054		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.05$) on using guti urea. In the regression analysis it has been seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to use guti urea 7.756 times (OR: 7.756; 95% CI: 2.376 - 25.321) higher than the farmers who do not listen to the farm programs.

5.1.1.4 Using Pesticides Scientifically

Most of the farmers of Bangladesh do not use pesticides in the proper way. Only 16.17% of the farmers use pesticides in the scientific ways (Table 5.1). The study reveals that 35.29% of the farmers who listen to the farm programs of Bangladesh Betar use pesticides in the scientific ways. On the other hand, 14.90% of the farmers who do not listen to the farm programs use pesticides in the scientific ways. The listeners use pesticides in the proper ways more than the non-listeners. The hypothesis for testing (z-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in using pesticides in the scientific ways.

H_1: There is difference between a listener and a non-listener in using pesticides in the scientific ways.

In the test of the hypothesis it is seen that *p* value (0.0278) is less than 0.05. So, the difference is significant and the null hypothesis is rejected at 5% confidence level (Table 5.2). There is difference between the listener group and non-listener group in using pesticides in the scientific ways. The listeners use pesticides in the scientific ways more than the non-listeners of the farm programs.

5.1.1.4.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is difference between the listener and non-listener group in case of using pesticides in the scientific ways and the farm program is effective in motivating the listeners to use pesticides in the proper ways, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in motivating listeners of the farm programs. Here the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (7)$$

where, *p*, probability of using pesticides scientifically (coded 1);

1–*p*, probability of not using pesticides scientifically (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.6 The effects of farm programs on using pesticides scientifically

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening FP							
Do not listen (R)					1.00		
Listen	1.199	0.546	4.826	0.028	3.316	1.138	9.662
Constant	-1.710	0.176	94.037	0.000	0.181		

Note: 'R, the reference category'; 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.05$) on using pesticides scientifically. In the logistic regression model it is seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to use pesticides scientifically 3.316 times (OR: 3.316; 95% CI: 1.138 - 9.662) higher than the farmers who do not listen to the farm programs.

5.1.1.5 Preparing Scientific Seed Beds

Most of the farmers of Bangladesh do not use scientific seed beds. Only 10.29% of the farmers use scientific seed beds (Table 5.1). Among the farmers who listen to the farm programs of Bangladesh Betar 23.52% use scientific seed beds. On the other hand 9.41% of the farmers who do not listen to the farm program use scientific seed beds. That means the listeners use scientific seed beds more than the non-listeners. The hypothesis to compare the listeners with the non-listeners is as follows:

H_0: There is no difference between a listener and a non-listener in using scientific seed beds.

H_1: There is difference between a listener and a non-listener in using scientific seed beds.

After testing (z-test) the hypothesis it is seen that the p value is 0.0649 which is more than 0.05. The null hypothesis is accepted at 5% confidence level (Table 5.2). But as the

p value is very close to 0.05 and the null hypothesis is rejected at 10% confidence level, the researcher concludes that the listeners are more likely to use scientific seed beds than the non-listeners.

5.1.1.5.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is a difference between the listener and non-listener group in case of using scientific seed bed and the farm program is effective in motivating the listeners to use scientific seed bed, through the regression analysis it has been tried to measure the degree of effectiveness of the farm programs of Bangladesh Betar in motivating listeners of the farm programs. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (8)$$

where, p, probability of using scientific seed bed (coded 1);

$1–p$, probability of not using scientific seed bed (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.7 The effects of farm programs on using scientific seed beds

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.086	0.611	3.161	0.075	2.962	0.895	9.802
Constant	-2.264	0.214	111.474	0.000	0.104		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.10$) on using scientific seed bed. In the logistic regression model it has been seen that if a farmer listens to the farm programs, he/she is more likely to use scientific seed bed 2.962 times (OR: 2.962; 95% CI: 0.895 - 9.802) higher than the farmers who do not listen to the farm programs.

5.1.1.6 Harvesting Seeds Separately

In order to maintain the quality of the seeds the crops should be harvested and prepared manually by hands. But the research finding is that only 41.9% of the farmers do this practice (Table 5.1). The study reveals that 70.6% of the farmers who listen to the farm programs of Bangladesh Betar harvest crops for seeds separately and manually. On the other hand, 40% of the farmers who do not listen to the farm programs harvest crops for seeds separately and manually. The listeners harvest crops for seeds separately and manually more than the non-listeners of the farm programs. The hypothesis for testing (z-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in harvesting crops for seeds separately and manually.

H_1: There is difference between a listener and a non-listener in harvesting crops for seeds separately and manually.

In the test of the hypothesis it is seen that p value (0.0139) is less than 0.05 (Table 5.2). So, the difference is significant and the null hypothesis is rejected at 5% confidence level. There is a difference between the listener group and non-listener group in harvesting crops for seeds separately and manually. The listeners harvest crops for seed in a proper way more than the non-listeners of the farm programs.

5.1.1.6.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is a difference between the listener and non-listener group in case of harvesting seed separately and the farm program is effective in motivating the listeners to harvest seed separately, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (9)$$

where, p, probability of harvesting seeds separately (coded 1);

$1–p$, probability of not harvesting seeds separately (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.8 The effects of farm programs on harvesting seeds separately

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.268	0.548	5.362	0.021	3.553	1.215	10.390
Constant	-0.392	0.128	9.369	0.002	0.675		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.05$) on harvesting seeds separately. In the regression model it is seen that if a farmer listens to the farm programs, he/she is more likely to harvest seeds separately 3.553 times (OR: 3.553; 95% CI: 1.215 - 10.390) higher than the farmers who do not listen to the farm programs.

5.1.1.7 Irrigation at Critical Moment

Every crop has its critical moment for irrigation. If it is not irrigated at the critical moment, its production must be hampered. But in Bangladesh most of the farmers are not aware of the critical moment of any of the crops they produce. Only 02.6% of the farmers irrigate at the critical moment of their crops (Table 5.1). Among the listeners of the farm programs 05.9% farmers do this practice; on the other hand 02.4% of the non-listeners of the farm programs do this practice. So, the listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in irrigating the crop at the critical moment.

H_1: There is difference between a listener and a non-listener in irrigating the crop at the critical moment.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 5.2). That means there is no difference between the listener group and non-listener group in irrigating the crops at their critical moment.

5.1.1.8 Organic Fertilizer

Organic fertilizer is essential for protecting the soil quality. In Bangladesh most of the farmers (72.1%) use organic fertilizer. The study shows that 70.6% of the listeners of the farm programs and 72.2% of the non-listeners of the farm programs do this practice. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in using organic fertilizer.

H_1: There is difference between a listener and a non-listener in using organic fertilizer.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. There is no difference between the listener group and non-listener group in using organic fertilizer during cultivation.

5.1.1.9 Drying Seeds at Times

To maintain the quality the seeds need to be dried at times. Only 54.4% of the farmers dry their seeds at times (Table 5.1). The study shows that 58.8% of the listeners of the farm programs and 54.1% of the non-listeners of the farm programs do this practice. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in drying the seeds at times.

H_1: There is difference between a listener and a non-listener in drying the seeds at times.

In the test of the hypothesis it is seen that *p* value is more than 0.05 (Table 5.2). So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. There is no difference between the listener group and non-listener group in drying the seeds at times.

5.1.1.10 Examining the Soil for Using Fertilizers

Soil is to be examined to determine the need of the fertilizers. This research shows that the farmers are not used to examining the soil for using fertilizers. Only 1.5% of the farmers do this practice (Table 5.1). The study also reveals that there is none among the listeners of farm programs who do this practice. On the other hand 1.6% of the non-listeners of the farm programs do this practice. The hypothesis developed to compare the listeners with the non-listeners is as follows:

H_0: There is no difference between a listener and a non-listener in examining the soil.

H_1: There is difference between a listener and a non-listener in examining the soil.

After testing (*z*-test) the hypothesis it is seen that the *p* value is 0.5961 which is more than 0.05 (Table 5.2). Here the null hypothesis is accepted at 5% confidence level. There is no difference between the listener group and non-listener group in examining the soil.

In the crop sector in case of scientific practices the listeners of the farm programs are in better position than the non-listeners of the farm programs. The exception is in case of soil test. The researcher assumes that in case of soil test another factor besides listening to the farm programs is active here and that is the convenience of the institute where the soil can be tested. Most of the listeners are in the remote areas. It is not easy for them to test the soil though they know that it is a good practice.

5.1.2 Livestock Sector

In the livestock sector, with a view to measure the impact of the farm programs on the farm practices of the livestock farmers, nine practices have been specified which are as follows:

a) Routine oral administration of Anthelmintic four times a year,

b) Practicing artificial insemination,

c) Cleaning the dwelling places with antiseptics,

d) Vaccinating the cattle before rainy season to prevent diseases,

e) Feeding urea molasses straw,

f) Routine vaccination of the chicken,

g) Drying the fast growing grass before feeding in the rainy season to protect nitrogen poisoning,

h) Separating the sick animals from the others, and

i) Burying the dead animals.

In the study it has been seen that most of the farmers are accustomed to traditional practices. Most of the farmers do not follow the scientific practices which are being shown in the following Table 5.9.

Table 5.9 Distribution of the farmers following scientific practices (livestock sector)

Scientific practices	*Practicing farmers	Percentage (%)
Routine oral administration of Anthelmintic four times a year	34	45.33
Artificial insemination	35	55.55
Cleaning the dwelling places with antiseptic, lime and so on	27	36.00
Vaccinating the cattle or goat before rainy season	27	38.03
Feeding the cattle urea molasses straw	9	14.28
Following routine vaccination for the chickens	20	33.90
Drying the fast growing grass before feeding during rainy season	10	15.87
Separating the affected animal from the others	51	68.00
Burying the dead body of the animal	42	56.00

Note: Total number of farmers (*n*) in livestock sector is 75. *There are multiple responses.

5.1.2.1 Routine Oral Administration of Anthelmintic

The experts of livestock sector suggest the farmers to feed their animal anthelmintic medicine four times per year to keep them healthy. In this research it has been seen that most of the farmers are not used to feeding anthelmintic medicine four times yearly. Only 45.33% of the farmers do this practice (Table 5.9). Among the listeners 83.33% farmers feed their animals the medicine regularly. On the other hand 42% of the farmers who do not listen to the farm programs feed their animals the medicine regularly (Table 5.12). The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in feeding anthelmintic medicine.

H_1: There is difference between a listener and a non-listener in feeding anthelmintic medicine.

After testing the hypothesis it is seen that the *p* value is 0.0551 which is more than 0.05 (Table 5.12).That means the null hypothesis is accepted at 5% confidence level. But as the *p* value is very close to 0.05 and the null hypothesis is rejected at 10% confidence level, the researcher concludes that the listeners are more likely to feed their animals anthelmintic medicine regularly.

5.1.2.1.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is difference between the listener and non-listener group in case of feeding anthelmintic and the farm program is effective in motivating the listeners to feed anthelmintic, through the logistic regression analysis it has been tried to measure the degree of effectiveness of the farm programs of

Bangladesh Betar in motivating listeners of the farm programs. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (10)$$

where, p, probability of using anthelmintic (coded 1);

1–p, probability of not using anthelmintic (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.10 The effects of farm programs on using anthelmintic regularly

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.931	1.122	2.961	0.085	6.897	0.764	62.217
Constant	-1.609	1.095	2.159	0.142	0.200		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect (p < 0.10) on using anthelmintic in the proper ways. In the logistic regression model it is seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to use anthelmintic 6.897 times (OR: 6.897; 95% CI: 0.764 - 62.217) higher than the farmers who do not listen to the farm programs.

Table 5.11 Significance test of the difference of proportions of farm practices (livestock sector)

Name of Practice	Variables	Number of farmers (*n*)	Practicing Farmer	percentage (%)	*p* values
Routine usage of anthelmintic	Do not listen to FP	69	29	42.00	0.0551
	Listen to FP	6	5	83.33	
Artificial Insemination	Do not listen to FP	58	31	53.44	0.25014
	Listen to FP	5	4	80.00	
Cleaning with antiseptics	Do not listen to FP	69	22	31.90	0.0141
	Listen to FP	6	5	83.33	
Regular Vaccination before rainy season	Do not listen to FP	65	23	35.38	0.13104
	Listen to FP	6	4	66.67	
Feeding urea molasses straw	Do not listen to FP	58	7	12.06	0.08726
	Listen to FP	5	2	40.00	
Vaccinating the Chickens Regularly	Do not listen to FP	54	16	29.63	0.02202
	Listen to FP	5	4	80.00	
Drying the grass before feeding in the rainy season	Do not listen to FP	58	9	15.51	0.79486
	Listen to FP	5	1	20.00	
Separating the sick animals from the others	Do not listen to FP	69	45	65.22	0.08012
	Listen to FP	6	6	100.00	
Burying the dead animals	Do not listen to FP	69	37	53.62	0.79486
	Listen to FP	6	5	83.33	

Note: FP refers to the farm programs of Bangladesh Betar.

5.1.2.2 Artificial Insemination

Artificial insemination is needed for quality breeding. But most of the farmers of Bangladesh are not accustomed to artificial insemination. In the research it is seen that 55.55% of the farmers follow this practice (Table 5.9). Among the listeners of the farm programs 80.00% farmers do this practice; on the other hand 53.44% of the non-listeners of the farm programs do this practice. The listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in doing artificial insemination.

H_1: There is difference between a listener and a non-listener in doing artificial insemination.

In the test of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 5.12). That means there is no difference between the listener group and non-listener group in doing artificial insemination.

5.1.2.3 Cleaning with Antiseptics

In order to keep the animals healthy and to protect them from diseases the dwelling places of the animals needs to be cleaned with lime water or antiseptics. But in this research it is seen that only 36% of the farmers do this practice (Table 5.9). Among the listeners of the farm programs of Bangladesh Betar 83.33% farmers do this practice. On the other hand, 31.90% of the non-listeners do this practice. The listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in using antiseptics for cleaning the dwelling places.

H_1: There is difference between a listener and a non-listener in using antiseptics for cleaning the dwelling places.

In the test of the hypothesis (*z*-test) it is seen that *p* value is less than 0.05 (Table 5.12). So, the difference is significant and the null hypothesis is rejected at 5% confidence level. That means there is difference between the listener group and non-listener group in using antiseptics for cleaning the dwelling places of their livestock.

5.1.2.3.1 Degree of Effectiveness of the Farm Programs

As in the proportional test (*z*-test) it has been seen that there is difference between the listener and non-listener group in case of cleaning the dwelling places with antiseptic

and the farm program is effective in motivating the listeners to use antiseptics, through the regression analysis it has been tried to measure the degree of effectiveness. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (11)$$

where, p, probability of cleaning with antiseptic (coded 1);

$1–p$, probability of not cleaning with antiseptic (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.12 The effects of farm programs on using antiseptics for cleaning dwelling places

Characteristic	Coefficient (β)	Standard error	Wald	p value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	2.369	1.125	4.429	0.035	10.682	1.177	96.976
Constant	-1.609	1.095	2.159	0.142	0.200		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs of Bangladesh Betar has significant effect ($p < 0.05$) on cleaning the dwelling places with antiseptics. In the logistic regression model it has been seen that if an individual farmer listens to the farm programs of Bangladesh Betar, he/she is more likely to clean the dwelling places of the livestock with antiseptics 10.682 times (OR: 10.682; 95% CI: 1.177 - 96.976) higher than the farmers who do not listen to the farm programs.

5.1.2.4 Vaccination before Rainy Season

For the prevention of foot and mouth diseases (FMD) the cattle and goats are to be vaccinated before rainy season. In Bangladesh only 38.03% of the farmers vaccinate their cattle and goats regularly (Table 5.9). In the research it has been seen that 66.67% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 35.38% of the farmers who do not listen to the farm programs of Bangladesh Betar do this practice. The listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in vaccinating the cattle and goats before rainy season.

H_1: There is difference between a listener and a non-listener in vaccinating the cattle and goats before rainy season.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 5.12). There is no difference between the listener group and non-listener group in vaccinating the cattle and goats before rainy season.

5.1.2.5 Feeding Urea-molasses-straw

Urea-molasses-straw is a natural food prepared for fattening the cattle. The farmers can prepare the food themselves in their home. It is very cost effective. But in Bangladesh only 14.28% of the farmers feed their cattle urea-molasses-straw (Table 5.9). In the research it is seen that 40.00% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 12.06% of the farmers who do not

listen to the farm programs of Bangladesh Betar do this practice. So, the listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in feeding the cattle urea-molasses-straw.

H_1: There is difference between a listener and a non-listener in feeding the cattle urea-molasses-straw.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05 (Table 5.12). So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means there is no difference between the listener group and non-listener group in feeding the cattle urea-molasses-straw.

5.1.2.6 Vaccinating the Chickens

To keep the chicken healthy they need to be vaccinated regularly. It has been seen that only 33.90% of the farmers vaccinate their chicken regularly (Table 5.9). The study has revealed that 80% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand 29.63% of the farmers who do not listen to the farm programs of Bangladesh Betar do this practice. So, the listeners do this practice more than the non-listeners. The hypothesis developed for testing the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in vaccinating the chickens.

H_1: There is difference between a listener and a non-listener in vaccinating the chickens.

In the test of the hypothesis (*z*-test) it is seen that *p* value is less than 0.05 (Table 5.12). So, the difference is significant and the null hypothesis is rejected at 5% confidence level. That means there is difference between the listener group and non-listener group in vaccinating the chickens.

5.1.2.6.1 Degree of Effectiveness of the Farm Programs

As in the proportional test it has been seen that there is difference between the listener and non-listener group in case of vaccinating the chickens regularly and the farm program is effective in motivating the listeners to vaccinate the chickens regularly, through the logistic regression analysis it has been tried to measure the degree of effectiveness. Here, the model for logistic regression analysis is as follows:

$$\log\left(\frac{p}{1-p}\right) = \alpha + \beta x, \qquad (12)$$

where, *p*, probability of following routine vaccination of the chicken (coded 1);

1–*p*, probability of not following routine vaccination of the chicken (coded 0);

x, listening to the farm programs (1 if 'Yes'; 0 if 'No');

α, the constant term; and

β, the coefficient.

Results of logistic regression analysis:

Table 5.13 The effects of farm programs on routine vaccination of the chicken

Characteristic	Coefficient (β)	Standard error	Wald	*p* value	Odds ratio (OR)	95% CI for OR	
						Lower	Upper
Listening to FP							
Do not listen (R)					1.00		
Listen	1.891	0.912	4.301	0.038	6.625	1.109	39.565
Constant	-1.198	0.285	17.630	0.000	0.302		

Note: 'R, the reference category', 'CI, the confidence interval'; 'FP, farm programs of Bangladesh Betar'.

Listening to the farm programs has significant effect ($p < 0.05$) on following routine vaccination of the chicken. In the regression analysis it has been seen that if an individual farmer listens to the farm programs, he/she is more likely to follow routine vaccination of the chicken 6.625 times (OR: 6.625; 95% CI: 1.109 - 39.565) higher than the farmers who do not listen to the farm programs.

5.1.2.7 Drying the Grass

In the rainy season the fast growing grasses deserve nitrogen to a great extent. If the cattle eat the grass directly without drying then they may suffer from diarrhoea for the nitrogen consumed along with the fresh green grass. To avoid the problem the grass is to be dried before feeding. It has been seen that in Bangladesh only 15.87% of the farmers dry the grass before feeding their cattle (Table 5.9). This study has also disclosed that 20% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 15.51% of the farmers who do not listen to the farm programs do this practice. The listeners do this practice more than the non-listeners. The hypothesis developed for testing the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in drying the grass before feeding.

H_1: There is difference between a listener and a non-listener in drying the grass before feeding.

In the test (z-test) of the hypothesis it is seen that p value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level (Table 5.12). That means, there is no difference between the listener group and non-listener group in drying the grass before feeding the animals in the rainy season.

5.1.2.8 Separating the Sick Animals

If any animal is infected with any disease, the infected animal should be separated from the others; otherwise, the rest may be infected. In Bangladesh 68% of the farmers do this practice (Table 5.9). The study has revealed that 100% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 65.22% of the farmers who do not listen to the farm programs do this practice. So, the listeners do this practice more than the non-listeners. The hypothesis for testing (*z*-test) the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in separating the sick animals.

H_1: There is difference between a listener and a non-listener in separating the sick animals.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05 (Table 5.12). So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means there is no difference between the listener group and non-listener group in separating the sick animals from the healthy animals. But here the *p* value is very close to the confidence level (0.05) that means there is every possibility for the listener group to be more likely to do this practice (Table 5.12).

5.1.2.9 Burying the Dead Body

Burying the dead body of the animals is essential for the security of not only the health of other animal but also the health of human being. But 56% of the farmers do this practice (Table 5.9). The study has revealed that 83.33% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 53.62% of the

farmers who do not listen to the farm programs do this practice (Table 5.11). The listeners do this practice more than the non-listeners. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in burying the dead body of the animal.

H_1: There is difference between a listener and a non-listener in burying the dead body of the animal.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05 (Table 5.12). So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means there is no difference between the listener group and non-listener group in burying the dead body of the animal.

In the livestock sector the study has revealed that at all the cases of scientific practices the listeners of the farm programs are in better position than the farmers who do not listen to the farm programs of Bangladesh Betar. And the effectiveness of the farm programs is proved by means of the statistical analysis.

5.1.3 The Fisheries Sector

In the fisheries sector to measure the impact of the farm programs of Bangladesh Betar on the farm practices of the farmers the following seven common scientific practices have been specified:

a) Purifying water scientifically,

b) Using lime for keeping water fresh and fish healthy,

c) Maintaining the food-ratio,

d) Examining health,

e) Maintaining fish number,

f) Separating the infected fish from others, and

g) Seeking doctor's suggestions during diseases.

In this study it is seen that most of the farmers are accustomed to traditional practices. Most of the farmers do not follow the scientific practices which are being shown in the following table (Table 5.14):

Table 5.14 Distribution of the farmers following scientific practices (fisheries sector)

Scientific practices	*Practicing farmers (*n*)	Percentage (%)
Purifying water scientifically	101	85.59
Using lime to keep the water fresh and fish healthy	18	15.25
Maintaining food ratio	20	16.95
Examining health after each 15 days	84	71.19
Maintaining the numbers of fish according to the area	9	7.63
Separating the infected fish	88	74.58
Taking the suggestion of the doctor for treatment	53	44.91

Note: Total number of farmers in fisheries sector is 118. *There are multiple responses.

5.1.3.1 Purifying Water Scientifically

The first task of a fish farmer is to purify the water and prepare the pond or the water body suitable for the fish. There are some scientific methods for purifying the water. In this research it has been seen that 85.59% of the farmers prepare their water bodies and purify the water scientifically (Table 5.14). The study has also explored that 100% of the listeners of the farm program of Bangladesh Betar do the practice; on the other hand 84.54% of the non-listeners of the farm programs do this practice. The listeners of the farm program do the practice more than the non-listeners. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in purifying the water and prepare the water body.

H_1: There is difference between a listener and a non-listener in purifying the water and prepare the water body.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05 (Table 5.6). So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. It implies that there is no difference between the listener group and non-listener group in purifying the water and prepare the water body for fish farming.

Table 5.15 Significance test of difference of proportions of farm practices (fisheries sector)

Name of practices	Variables	Number of farmer (*n*)	Practicing farmer	Percentage (%)	*p* values
Water Purification	Do not listen to FP	110	93	84.54	0.2311
	Listen to FP	8	8	100.00	
Using lime for keeping water fresh and fish healthy	Do not listen to FP	110	16	14.56	0.4263
	Listen to FP	8	2	25.00	
Maintaining the food-ratio	Do not listen to FP	110	18	16.36	0.5329
	Listen to FP	8	2	25.00	
Examining health	Do not listen to FP	110	77	70.00	0.2935
	Listen to FP	8	7	87.50	
Maintaining fish number	Do not listen to FP	110	9	8.18	0.4009
	Listen to FP	8	0	0	
Separating the infected fish from others	Do not listen to FP	110	80	72.73	0.08186
	Listen to FP	8	8	100.00	
Seeking doctor's suggestions during diseases	Do not listen to FP	110	47	42.73	0.07672
	Listen to FP	8	6	75.00	

Note: FP refers to farm programs of Bangladesh Betar.

5.1.3.2 Using Lime

Fresh water and prevention of different diseases must be ensured to keep the fish healthy. And this can be done using lime at a certain amount every month. The research finding is that only 15.25% of the fish farmers do the practice (Table 5.14). Among the farmers who listen to the farm programs (listener group) 25.00% do this practice; on the other hand 14.56% of the farmers who do not listen to the farm program do this practice (Table 5.15). That means, the listeners of farm programs do the practice more than the non-listeners of the farm programs. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in using lime for preventing diseases and keeping the water fresh.

H_1: There is difference between a listener and a non-listener in using lime for preventing diseases and keeping the water fresh.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means, there is no difference between the listener group and non-listener group in using lime for preventing diseases and keeping the water fresh (Table 5.15).

5.1.3.3 Maintaining the Food-Ratio

For keeping the fish healthy and ensuring their proper growth a scientific ratio must be maintained among the different types of food given at a time for the fish. The research finding is that only 16.95% of the farmers maintain the food ratio (Table 5.14). Among the farmers who listen to the farm programs (listener group) 25% do this practice; on the other hand 16.36% of the farmers who do not listen to the farm program do this practice (Table 5.15). That means, the listeners of farm programs do the practice more than the non-listeners. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in maintaining the food-ratio.

H_1: There is difference between a listener and a non-listener in maintaining the food-ratio.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level.

That means there is no difference between the listener group and non-listener group in maintaining the food-ratio (Table 5.15).

5.1.3.4 Examining Health

After each fifteen days the health condition of the fish should be examined to know about their physical fitness and expected growth. The research finding is that only 71.19% of the farmers maintain the schedule (Table 5.14). Among the farmers who listen to the farm programs 87.50% do this practice; on the other hand 70.00% of the farmers who do not listen to the farm program do this practice (Table 5.15). That means the listeners of farm programs do the practice more than the non-listeners of the farm programs of Bangladesh Betar. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in examining the health of the fish.

H_1: There is difference between a listener and a non-listener in examining the health of the fish.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means there is no difference between the listener group and non-listener group in examining the health of the fish (Table 5.15).

5.1.3.5 Maintaining Fish Number

There are different types of fish. Some fish are of shallow water, some are of deep water and there are some which live in-between. The amount of water and the depth of the

water body determine the number of fish to be released in. The fish farmer has to maintain the number of fish in order to ensure their food and hygienic environment. The research finding is that only 7.63% of the farmers maintain the ratio (Table 5.14). None of the listeners of the farm programs of Bangladesh Betar does this practice; on the other hand 8.18% of the farmers who do not listen to the farm program do this practice (Table 5.15). That means the non-listeners of farm programs do the practice more than the listeners of the farm programs of Bangladesh Betar. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in maintaining the fish number.

H_1: There is difference between a listener and a non-listener in maintaining the fish number.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means there is no difference between the listener group and non-listener group in maintaining the fish number (Table 5.15).

5.1.3.6 Separating the Infected Fish from Others

If any fish is infected with any disease, the infected fish should be separated from the others; otherwise, the rest may be infected. In Bangladesh 74.58% of the farmers do this practice (Table 5.14). The study has revealed that 100% of the farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 72.73% of the farmers who do not listen to the farm programs do this practice (Table 5.15). The

listeners do this practice more than the non-listeners. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in separating the infected fish.

H_1: There is difference between a listener and a non-listener in separating the infected fish.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. That means, there is no difference between the listener group and non-listener group in separating the infected fish from the healthy fish. But here the *p* value is very close to the confidence level (Table 5.15) that means there is every possibility for the listener group to be more likely to do this practice than the non-listener group.

5.1.3.7 Seeking Doctor's Suggestions during Diseases

Most of the farmers of Bangladesh are used to indigenous treatment. They do not prefer consulting with doctor or experts. In Bangladesh 44.91% of the farmers consult with doctors for suggestions (Table 5.14). The study has revealed that 75% of the fish farmers who listen to the farm programs of Bangladesh Betar do this practice; on the other hand, 42.73% of the farmers who do not listen to the farm programs of Bangladesh Betar do this practice (Table 5.15). The listeners of farm programs do this practice more than the non-listeners. The hypothesis for testing the significance of the difference of the proportions is as follows:

H_0: There is no difference between a listener and a non-listener in seeking doctor's suggestions during diseases.

H_1: There is difference between a listener and a non-listener in seeking doctor's suggestions during diseases.

In the test (*z*-test) of the hypothesis it is seen that *p* value is more than 0.05. So, the difference is insignificant and the null hypothesis is accepted at 5% confidence level. There is no difference between the listener group and non-listener group in separating the infected fish from the healthy fish. But here the *p* value is very close to the confidence level (Table 5.15) and the null hypothesis is rejected at 10% confidence level. So, the researcher assumes that the listeners of farm programs are more likely to do this practice than the non-listeners of the farm programs.

In this research it has been seen that in all the sectors the farmers who listen to the farm programs of Bangladesh Betar are motivated to adopt almost all the modern farm technologies more than the farmers who do not listen to the farm programs of Bangladesh Betar. The study has revealed that except selecting the fish number at all the cases of modern practices in fisheries sector the listeners of the farm programs of Bangladesh Betar are in better condition than the non-listeners of the farm programs though the statistical analysis proves that there is no significant difference between the listener and non-listener. The researcher assumes that the cause of the insignificance of the differences may be the irregular and inadequate listening to the farm programs. But, there are more farmers within the listener group than the non-listener group who are involved in modern practices. As it is a research of social science it implies that the farm programs are effective to motivate the farmers to adopt modern technologies in farming.

5.1.4 Impact of the Farm Programs on the Mindset of the Farmers

In this study it has been seen that many of the farmers who do not listen to the farm programs of Bangladesh Betar deserve negative attitudes towards the government

experts. A vast majority of the respondents think that the experts especially the agriculture officers and fisheries officers do not know anything. Even some of the farmers who have failed to answer to any of the ten questions asked for measuring their primary knowledge in farming have told that they think that if they follow the suggestions of the experts then they will be at stake and this is why they do everything according to their own indigenous farm knowledge.

But none of the farmers who listen to the farm programs has made this type of comments. This is a clear indication of the effectiveness of the farm programs in changing the mindset of the farmers and motivating them thereby.

In this study it is also seen that 93.55% of those who listen to the farm programs of Bangladesh Betar seek for suggestions from others whom they think as expert. On the other hand 80.64% of the farmers who do not listen to the farm programs take suggestions from others. That means the farm programs are effective enough to change the mindset of the farmers who listen to the farm programs.

5.2 Conclusion

The research findings divulge that in every sector the farmers who listen to the farm programs of Bangladesh Betar are more aware of the modern technologies for farming and they are motivated to adopt the new technologies more than the farmers who do not listen to the farm programs. So, it implies that the farm programs of Bangladesh Betar are effective to motivate the farmers in adopting the modern technologies. Even the mindset of the farmer who listens to the farm programs has shaped up better than that of the farmer who does not listen to the farm programs. This is why the concerned authority should take necessary steps to make the farmers listen to the farm programs of Bangladesh Betar for the betterment of their farming.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6 Introduction

Communication, the process by which messages are transferred from a source to one or more receivers, is a vital aspect of social change.[120] Media as means of communication have three information roles. These are: the watchman, the policy making and teaching role.[121] All these functions are very much important for positive change in the society. For developing knowledge based society media can contribute a lot. In Bangladesh a major portion of the society belongs to farming. So, for the development of the society there should be a positive change in the knowledge level and farm practices of the farmers. Carefully designed communication materials can motivate farmers to change perception.[122] Listening farm programs especially in group is very influential in changing beliefs and attitudes towards innovation.[123] Through education from the radio, the farmers have grown to understand how to work better, even with the use of new implements which also requires new techniques for the development of agriculture.[124] Worldwide researches have proved that radio is an effective instrument for education and motivation of the farmers. In this research it is also proved that as radio programs

[120] Everett M. Rogers and Lyane Svenning, *Modernization among Peasants: The Impact of Communication* (New York: Holt, Rinehart and Winston, Inc., 1969), p. 7.

[121] Wilbur Schramm, Mass Media and National Development: The Role of Information in the Developing Countries (California: Stanford University Press, 1964), p. 38.

[122] M. M. Escalada et al. "Communication and Behavior Change in Rice Farmers' Pest Management: The Case of Using Mass Media in Vietnam," *Journal of Applied Communication*, Vol. 83, No. 1, 1999, p. 22.

[123] N. C. Jain, "An Experimental Investigation of the Effectiveness of Commitment and Consensus in India Radio Forum", Unpublished doctoral dissertation, Michigan State University, Cited in "The Use of Educational Radio in Developing Countries: Lesson from the Past," p. 3.

[124] C. N. Anyanwu, "The agricultural Radio Clubs in the Republic of Benin: A Case Study of Cultural Diffusion in West Africa, Nigeria," University of Ibadan, 1978. p 15-16. Cited in "The Use of Educational Radio in Developing Countries: Lesson from the Past." http://www1.worldbank.org/disted/Technology/broadcast/rad-01.html, Accessed on 25th December 2014.

the farm programs of Bangladesh Betar are effective in some cases. The major findings of this research are being disused below in brief.

6.1 Major Findings

6.1.1 Chapter Two

The findings revealed under the chapter titled **'BANGLADESH BETAR AND ITS FARM PROGRAMS: ANALYTICAL PERSPECTIVE'** are as follows:

i. There is a dire need of farm programs. Almost all the farmers (96.8%) need farm programs.
ii. Most of the experts (71.4%) think that it is a must to have farm programs from Bangladesh Betar.
iii. Among the farmers 20% want farm programs from Bangladesh Betar and another 21.72% want farm programs both from radio and TV.
iv. The farm programs designed and broadcast from Bangladesh Betar deserve the qualities of a good program to have beneficial effect on farming and the farmers.
v. The present broadcasting schedules do not match the need of the farmers.
vi. The broadcasting frequencies are not enough.
vii. There is discrimination among the sectors in case of the allocation of broadcasting hours.
viii. According to the experts the programs should be such that the farmers can participate in the programs.

6.1.2 Chapter Three

The findings revealed under the chapter titled **'FARMERS' ACCESS TO THE FARM PROGRAM AND ITS EFFECTIVENESS'** are as follows:

i. Bangladesh Betar itself fails to reach almost all (93.33%) of the farmers.

ii. Only 06.67% of the farmers listen to the farm programs of Bangladesh Betar.

iii. Radio set is now culturally unfit.

iv. Most of the farmers object to the obsolescence of radio (Bangladesh Betar).

v. But almost all the farmers have faith in the information broadcast from Bangladesh Betar.

vi. Bangladesh Betar has failed to motivate the farmers to listen to its farm programs.

vii. A vast majority of the farmers have confidence in their own indigenous knowledge.

viii. Most of the farmers do not have belief and confidence in the expertise of the government experts especially the agriculture officers and the fisheries officers.

ix. A great majority of the farmers do not have the urge to know any new technology. Even most of the farmers do not know that they are not aware of the important modern technologies for farming.

x. Lack of consciousness of the modern technologies and the benefit of using the technologies is an impediment to listening to the farm programs of Bangladesh Betar.

xi. Academic education and training on agriculture increase the consciousness of the farmers of the new technologies of farming which leads them to listening to farm programs.

xii. Very weak and constricted FM transmission of farm programs is an impediment to listening to the farm programs of Bangladesh Betar.

6.1.3 Chapter Four

The findings revealed under the chapter titled **'FARM PROGRAMS AND FARM EDUCATION'** are as follows:

i. The farm programs of Bangladesh Betar are very much effective in educating the farmers about the modern technologies of farming.

ii. The study reveals that most of the farmers do not listen to the farm programs of Bangladesh Betar. Even, those who listen to the farm programs do not listen to the programs regularly.

iii. There is a clear difference between the listener and non-listener of the farm programs of Bangladesh Betar. At almost every level of knowledge the listeners of the farm programs are at better position than the non-listeners.

iv. It is also proved that farm programs can be a better complement to other mechanisms for educating the farmers about the farm technologies.

6.1.4 Chapter Five

The findings revealed under the chapter titled **'FARM PROGRAMS AND MOTIVATION OF THE FARMERS'** are as follows:

i. The research findings divulges that in every sector the farmers who listen to the farm programs of Bangladesh Betar are aware of the modern

technologies for farming more than the farmers who do not listen to the farm programs.

ii. The research findings reveals that in every sector of agriculture the farmers who listen to the farm programs of Bangladesh Betar are motivated to adopt the new technologies more than the farmers who do not listen to the farm programs.

iii. Even the mindset of the farmer who listens to the farm programs has shaped up better than that of the farmer who does not listen to the farm programs.

6.2 Implication of the Findings

Bangladesh Betar and other government agencies will get guidelines for developing effective programs for the purpose of educating the farmers and formulating policies for the diffusion of the agricultural technologies to the farmers of Bangladesh.

First of all the authority of Bangladesh Betar will be able to know the true picture of the positions of Bangladesh Betar and its farm programs to the listeners for whom Bangladesh Betar develops and broadcast its programs. The authority will get idea about what they should do for the diffusion of the farm technologies. They will be able to know about the very loop holes in developing and broadcasting farm programs.

Other government departments entrusted with the responsibility to disseminate farm knowledge to the farmers will also get an exact idea of the situation prevailing in the fields. The research findings will help them build up their positive image to the farmers. They will also have a guideline about how to use radio for the diffusion of farm technologies.

6.3 Suggestion for Further Research

Due to some constraints this research is confined to crop, fisheries and livestock sectors. Further research can be done in forestry sector. This research is restrained to only the effectiveness of the farm programs of Bangladesh Betar. A further research on the marketing prospects of the farm programs can be done and according to the researcher it is a must for the betterment of Bangladesh Betar, the farm programs of Bangladesh Betar and the agriculture of Bangladesh. For Bangladesh Betar it is very important to study on how to make itself and its programs attractive to its actual and potential listeners. There may be an in depth study on the impact of farm programs on farm production and the socio-economic condition of the farming communities.

6.4 Conclusions

The farm programs designed and broadcast from Bangladesh Betar deserve the qualities of a good program enough to have beneficial effects on the agriculture and the farming communities of Bangladesh. Though most of the farmers do not listen to the farm programs of Bangladesh Betar yet in this research it is proved that if the farmers regularly listen to the farm programs, they must be educated and aware of the modern technologies of agriculture and the benefits of using the technologies. In this research, it is also proved that the farmers who listen to the farm programs of Bangladesh Betar are more likely to be motivated to adopt new farm technologies in their farming. Even this research has revealed that it is also possible to change the mindset of the farmers by dint of the farm programs. Yet, the concerned authority of Bangladesh Betar needs to work on the perfection of the farm programs incorporating the suggestions given by the experts of different departments of agriculture and coping with the needs and choices of the farmers revealed by this research. The very loop-holes in the farm programs pointed

out by the experts and the farmers should be alleviated to ensure the effectiveness of the farm programs.

Besides, the concerned authority of Bangladesh Betar should take necessary promotional activities to make the programs attractive and motivate the farmers to listen to the farm programs. The other relevant departments should make efforts to make the farmers listen to the farm programs for the betterment of the whole agriculture and the farming communities of Bangladesh.

6.5 Recommendations

The major recommendations based on this study are as follows:

i. A Separate and specific FM frequency should be allocated for the transmission of farm programs throughout the day so that a farmer can listen to the farm programs whenever he or she wants to listen.
ii. The quality of FM transmission should be enhanced.
iii. There should be continuous programs for the farmers of Bangladesh from Bangladesh Betar and the programs should be region wise.
iv. Daily broadcasting schedules should be increased though it is the repeat programs.
v. Farmer's involvement in the programs should be ensured.
vi. Initiatives have to be taken to encourage the farmers to listen to the programs.
vii. Programs should be rescheduled according to the farmers' choice.
viii. Sector wise allocation of broadcasting hours should be revised.
ix. The programs have to be transmitted in such a way that the farmers can receive and listen to the programs through culturally fit technologies.
x. Interdepartmental collaboration has to be enhanced.

APPENDIX – A

Questionnaire for PhD Research

Crop Sector

Research Title: Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study

[Respected respondent, your information is only for research purpose and your identity must be concealed. Your cooperation will enrich the study.]

Serial No. ----------

Village:	Union:	Upazila:	District:

Personal Information of the respondent:

1. Name: a). M. b). F.	2. Father'/Husband' Name:
3. Age:	4. Education: a). no education, b). only reading or writing, c).....class
6. Marital Status: a). Married, b). Unmarried. c). Widow / widower, d). Divorcee.	
7. Family member:	8. Religion: a). Islam, b). Hinduism, c) Other.....
9. Training: a). Yes, b). No.	
10. Affiliation to any organization (cooperative society and so on): a). Yes, b). No.	

Farm Related Information:

1. Land under cultivation:.....shotok	2. Ownership of land: a). own, b). leased, c). mortgaged, d). contract (borga)
4. Monthly income: ..... taka. 5. Yearly saving: ..... taka.	3. Crops under cultivation:

Source of Farm Information:

1. From where do you get your farm information? (Number according to their importance. Give 01 for the source from which you get the most information.)

   a). Block supervisor / field assistant / agriculture officer (.....),

   b). Consultation with fellow farmers (.....),

c). Consultation with family members (.....),

d) Salesman of fertilizer, seeds, pesticides and medicine (individual salesman, company agents/dealers, company doctors/consultants/leaflets and so on) (.....),

e). Farm programs of BB (.....),

f). Farm programs of Television (.....),

g). Newspaper (.....),

h). Poster (.....).

Information about listening to the farm programs of Bangladesh Betar:

1. Do you listen to the radio programs? a) Yes (i. on radio set, ii. on cell phone); b). No.	2. Do you have radio set? a). Yes, b). No.
3. Which radio program do you listen to- a). Bangladesh Betar, b). BBC, c). FM- (i) FM of Bangladesh Betar, (ii) Private FM	
4. Which program do you listen to? a) Entertaining (Music, drama, magazine, game and so on), b). News, c). Farm Programs, d) Religious Programs, e). Climate, f). Others..... .	
5. Do you listen to the farm programs of Bangladesh Betar? a). Yes, b). No.	
6. Which farm program do you listen to? a). Desh Amar Mati Amar, b). Chashabad, c). Sobuj Bangla, d). Khet khamar Samachar, e). Krishi Samachar.	
7. When do you listen to the farm programs? a). Morning, b). Afternoon, c). Evening / night.	
8. Which time schedule do you prefer the most? a). Morning, b). Afternoon, c). Evening / night. d).....	
9. How much do you listen to the farm program? a). Every day, b). Once or twice a week, c). Once or twice a month, d). very rarely.	
10. If you listen to the program every day, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.	
11. If you listen to the program once or twice a week, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.	
12. If you listen to the program once or twice a month, how many minutes do you spend for listening?	

a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
13. Do you know the program schedule? a). Yes, b). No.
14. Do you listen to the phone-in program? a). Yes, b). No.
15. How many times have you made phone call to the program? a). Never, b). Every day, c). Whenever face problem, d). Once in a week, e). At times, f). thers.....
16. Do you get solution of your problem after making call to the program? a). Yes, b). No.

Program Duration:

What do you think of the program duration?

a). Enough, b). Must be increased, c). Should be increased, d) no need to be increased.

Program format:

1. Which format do you prefer the most?

a). Talk, b). Magazine, c). *Asor*, d). Drama, e). Answer to the letter, f). Interview, g). Phone-in,

h). None.

2. (If the answer is 'none') what should be the format of the farm program?

.....

3. Can you realize the information provided through the present formats of farm programs?

a). Yes, b). No.

4. (If the answer is 'no') Please give suggestion.

.....

Information Need:

1. Do you think that all the information need for your farming is being broadcast through the farm programs?

a). All the information, b). Almost all information, c). Some information, d). Not at all.

2. Do you think that the topics discussed in the farm programs resemble the seasonal demand of the farmers.

a). Always seasonal, b). Almost always seasonal, c). At times seasonal, d) Never seasonal.

3. Do you have suggestion about the topic of the farm programs?

.....

Test of Primary Farm Knowledge:

1. Which urea is cost effective and beneficial for crop and soil? Ans:
2. Can the seed of hybrid crop be used next year? Ans:
3. What increase the soil capacity to preserve water? Ans:
4. Which one is harmful for crop among ladybird, pamri and spider? Ans:
5. What can be used for protecting stored seeds of rice from pests? Ans:
6. What is mulching? Ans:
7. What is ideal seed bed? Ans:
8. When is fertilizer used for fruit tree? Ans:
9. What is to be used for seed refining? Ans:
10. Which fertilizer is to be used when the new grown leaves become yellow? Ans:

About Farm Mangement:

1. Do you test the soil before using fertilizer? a). Yes, b). No.

2. Do you use balanced fertilizer? a). Yes, b). No.

3. Do you use organic fertilizer for preparing your land? a). Yes, b). No.

4. Which type of urea do you use? a). Guti urea, b). Ordinary urea.

5. Do you use scientific/ ideal seed bed? a). Yes, b). No.

6. Do you use pesticides scientifically? a). Yes, b). No.

7. Do you practise Integrated Pest Management? a). Yes, b). No.

8. Do you harvest seed separately? a). Yes, b). No.

9. Do you dry stored seeds at times? a). Yes, b). No.

10. Do you irrigate your crops at their critical moment of irrigation? a). Yes, b). No.

If you do not listen to the farm programs of Bangladesh Betar:

1. How do you spend your leisure?

a). Watch TV, b). Go to the Market, c). Gossip, d). Read books, e). I do not have leisure, f) ....

2. Do you want a program where an expert will discuss on different current farm related issues and if you listen to the programs, you will get your required information for farming?

a). Yes, b). No.

3. How many such type of programs do you want?

a). Every day, b). Once a week, c). Twice a week, d). Once a month, e). Twice a month, f). ....

4. In which medium do you want this program? a). Radio, b). TV, c). Field/ village, d). .....

5. Do you know that every day these types of programs are broadcast from Bangladesh Betar?

a). Yes, b). No.

6. Why do you not listen to the farm program of Bangladesh Betar?

a). I watch TV, b). I do not have radio set, c). I do not know that there are farm programs on radio,

d). No faith in radio information, e). Do not feel good listening radio, f). Radio is now obsolete (out of culture), g). Very busy, h) Lack of importance, i) Programs cannot be seen on radio, j) For religion.

7. Will you listen to the farm programs, if it can be listened on your cell phone? a). Yes, b). No.

Mobile phone No. –a). Own- b). Guardian's

Thank you.

APPENDIX - B

Questionnaire for PhD Research

Livestock Sector

Research Title: Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study

[Respected respondent, your information is only for research purpose and your identity must be concealed. Your cooperation will enrich the study.]

Serial No. ----------

Village:	Union:	Upazila:	District:

Personal Information of the respondent:

1. Name: a). M. b). F.	2. Father'/Husband' Name:
3. Age:	4. Education: a). no education, b). only reading or writing, c). .....class
6. Marital Status: a). Married, b). Unmarried. c). Widow / widower, d). Divorcee.	
7. Family member:	8. Religion: a). Islam, b). Hinduism, c) Other.....
9. Training: a). Yes, b). No.	
10. Affiliation to any organization (cooperative society and so on): a). Yes, b). No.	

Farm Related Information:

2. Land under cultivation:.....*shotok*	2. Ownership of land: a). own, b). leased, c). mortgaged, d). contract (*borga*)
4. Monthly income: ..... taka. 5. Yearly saving: ..... taka.	3. Crops under cultivation:

Source of Farm Information:

1. From where do you get your farm information? (Number according to their importance. Give 01 for the source from which you get the most information.) a). Upazila veterinary surgeon / field assistant / non-govt. doctor (.....), b). Consultation with fellow farmers (.....),

c). Consultation with family members (.....),

d) Salesman of fertilizer, seeds, pesticides and medicine (individual salesman, company agents/dealers, company doctors/consultants/leaflets and so on) (.....),

e). Farm programs of BB (.....),

f). Farm programs of Television (.....),

g). Newspaper (.....),

h). Poster (.....).

Information about listening to the farm programs of Bangladesh Betar:

1. Do you listen to the radio programs? a) Yes (i. on radio set, ii. on cell phone); b). No.	2. Do you have radio set? a). Yes, b). No.
3. Which radio program do you listen to- a). Bangladesh Betar, b). BBC, c). FM- (i) FM of Bangladesh Betar, (ii) Private FM	
4. Which program do you listen to? a) Entertaining (Music, drama, magazine, game and so on), b). News, c). Farm Programs, d) Religious Programs, e). Climate, f). Others..... .	
5. Do you listen to the farm programs of Bangladesh Betar? a). Yes, b). No.	
6. Which farm program do you listen to ? a). Desh Amar Mati Amar, b). Chashabad, c). Sobuj Bangla, d). Khetkhamar Samacahr, e). Krishi Samachar.	
7. When do you listen to the farm programs? a). Morning, b). Afternoon, c). Evening / night.	
8. Which time schedule do you prefer the most? a). Morning, b). Afternoon, c). Evening / night. d).	
9. How much do you listen to the farm program? a). Every day, b). Once or twice a week, c). Once or twice a month, d). very rarely.	
10. If you listen to the program every day, how many minutes do you spend for listening?	

a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
11. If you listen to the program once or twice a week, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
12. If you listen to the program once or twice a month, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
13. Do you know the program schedule? a). Yes, b). No.
14. Do you listen to the phone-in program? a). Yes, b). No.
15. How many times have you made phone call to the program? a). Never, b). Every day, c). Whenever face problem, d). Once in a week, e). At times, f). Others.....
16. Do you get solution of your problem after making call to the program? a). Yes, b). No.

Program Duration:

What do you think of the program duration?

a). Enough, b). Must be increased, c). Should be increased, d) no need to be increased.

Program format:

1. Which format do you prefer the most?

a). Talk, b). Magazine, c). Asor, d). Drama, e). Answer to the letter, f). Interview, g). Phone-in,

h). None.

2. (If the answer is 'none') what should be the format of the farm program?

.....

3. Can you realize the information provided through the present formats of farm programs?

a). Yes, b). No.

4. (If the answer is 'no') Please give suggestion.

.....

Information Need:

1. Do you think that all the information need for your farming is being broadcast through the farm programs?

   a). All the information, b). Almost all information, c). Some information, d). Not at all.

2. Do you think that the topics discussed in the farm programs resemble the seasonal demand of the farmers.

   a). Always seasonal, b). Almost always seasonal, c). At times seasonal, d) never seasonal.

3. Do you have suggestion about the topic of the farm programs?

   .....

Test of Primary Knowledge for Livestock Farming:

1. How many times do you ensure oral administration of Anthelmintic in a year? Answer:
2. What are Napier, Para and Oats? Answer:
3. When is the cattle fed magnesium sulphate or lin seed oil? Answer:
4. What is the duration of pregnancy period of cattle? Answer:
5. What is to be done to prevent avian influenza (*Torka*), ranikhet, Anthrax, bird flu and so on? Answer:
6. In how many days the first dose of vaccine is to be given to the chicken? Answer:
7. Which vaccine is to be given to the chicken at the age of two months? Answer:
8. Can tell names of two hybrid hens? Answer:
9. Can tell names of two hybrid cattle? Answer:
10. What is urea-molasses-straw? Answer:

Scientific Practices in Livestock Farming

1. Do you practise routine oral administration of Anthelmintic 4 times a year? a). Yes, b). No.

2. Do you practise artificial insemination of your cattle? a). Yes, b). No.

3. Do you clean the dwelling places with antiseptics like lime, potash and so on? a). Yes, b). No.

4. Do you vaccinate the cattle before rainy season to prevent diseases? a). Yes, b). No.

5. Do you practise routine vaccination of the chicken? a). Yes, b). No.

6. Do you dry the fast growing grass before feeding in the rainy season to protect nitrogen poisoning?

a). Yes, b). No.

7. Do you separate the sick animals from the others? a). Yes, b). No.

8. Do you bury the dead animals? a). Yes, b). No.

9. Do you feed your cattle urea molasses straw? a). Yes, b). No.

10. What do you do when an animal is sick?

If you do not listen to the farm programs of Bangladesh Betar:

1. How do you spend your leisure?

a). Watch TV, b). Go to the Market, c). Gossip, d). Read books, e). I do not have leisure, f) ....

2. Do you want a program where an expert will discuss on different current farm related issues and if you listen to the programs, you will get your required information for farming?

a). Yes, b). No.

3. How many such types of programs do you want?

a). Every day, b). Once a week, c). Twice a week, d). Once a month, e). Twice a month, f). ....

4. In which medium do you want this program? a). Radio, b). TV, c). Field/ village, d). .....

5. Do you know that every day this type of programs are broadcast from Bangladesh Betar?

a). Yes, b). No.

6. Why do you not listen to the farm program of Bangladesh Betar?

a). I watch TV, b). I do not have radio set, c). I do not know that there are farm programs on radio,

d). No faith in radio information, e). Do not feel good listening radio, f). Radio is now obsolete (out of culture), g). Very busy, h) Lack of importance, i) Programs cannot be seen on radio, j) For religion.

7. Will you listen to the farm programs, if it can be listened on your cell phone? a). Yes, b). No.

Mobile phone No. – a). Own- b). Guardian's

Thank you.

APPENDIX – C

Questionnaire for PhD Research

Fisheries Sector

Research Title: Effectiveness of Farm Programs of Bangladesh Betar: An Empirical Study

[Respected respondent, your information is only for research purpose and your identity must be concealed. Your cooperation will enrich the study.]

Serial No. ----------

Village:	Union:	Upazila:	District:

Personal Information of the respondent:

1. Name: a). M. b). F.		2. Father'/Husband' Name:
3. Age:	04. Education: a). no education, b). only reading or writing, c). .....class	
6. Marital Status: a). Married, b). Unmarried. c). Widow / widower, d). Divorcee.		
7. Family member:		8. Religion: a). Islam, b). Hinduism, c)
9. Training: a). Yes, b). No.		
10. Affiliation to any organization (cooperative society and so on): a). Yes, b). No.		

Farm Related Information:

3. Land under cultivation:.....*shotok*	2. Ownership of land: a). own, b). leased, c). mortgaged, d). contract (*borga*)
4. Monthly income: ..... taka. 5. Yearly saving: ..... taka.	3. Crops under cultivation:

Source of Farm Information:

1. From where do you get your farm information? (Number according to their importance. Give 01 for the source from which you get the most information.)

a). Upazila fisheries officer (.....),

b). Consultation with fellow farmers (.....),

c). Consultation with family members (.....),

d) Salesman of fertilizer, seeds, pesticides and medicine (individual salesman, company agents/dealers, company doctors/consultants/leaflets and so on) (.....),

e). Farm programs of BB (.....),

f). Farm programs of Television (.....),

g). Newspaper (.....),

h). Poster (.....).

Information about listening to the farm programs of Bangladesh Betar:

1. Do you listen to the radio programs? a) Yes (i. on radio set, ii. on cell phone); b). No.	2. Do you have radio set? a). Yes, b). No.
3. Which radio program do you listen to- a). Bangladesh Betar, b). BBC, c). FM- (i) FM of Bangladesh Betar, (ii) Private FM	
4. Which program do you listen to? a) Entertaining (Music, drama, magazine, game and so on), b). News, c). Farm Programs, d) Religious Programs, e). Climate, f). Others..... .	
5. Do you listen to the farm programs of Bangladesh Betar? a). Yes, b). No.	
6. Which farm program do you listen to? a). Desh Amar Mati Amar, b). Chashabad, c). Sobuj Bangla, d). Khetkhamar Samachar, e). Krishi Samachar.	
7. When do you listen to the farm programs? a). Morning, b). Afternoon, c). Evening / night.	
8. Which time schedule do you prefer the most? a). Morning, b). Afternoon, c). Evening / night. d).	
9. How much do you listen to the farm program?	

a). Every day, b). Once or twice a week, c). Once or twice a month, d). very rarely.
10. If you listen to the program every day, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
11. If you listen to the program once or twice a week, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
12. If you listen to the program once or twice a month, how many minutes do you spend for listening? a). 5-15, b) 16-25, c). 26-30, d). 36-45, e). 46-55, f). 56-65, g). 66-75.
13. Do you know the program schedule? a). Yes, b). No.
14. Do you listen to the phone-in program? a). Yes, b). No.
15. How many times have you made phone call to the program? a). Never, b). Every day, c). Whenever face problem, d). Once in a week, e). At times, f). Others.....
16. Do you get solution of your problem after making call to the program? a). Yes, b). No.

Program Duration:

What do you think of the program duration?

a). Enough, b). Must be increased, c). Should be increased, d) no need to be increased.

Program format:

1. Which format do you prefer the most?

a). Talk, b). Magazine, c). Asor, d). Drama, e). Answer to the letter,

f). Interview, g). Phone-in, h). None.

2. (If the answer is 'none') what should be the format of the farm program?

.....

3. Can you realize the information provided through the present formats of farm programs?

a). Yes, b). No.

4. (If the answer is 'no') Please give suggestion.

.....

Information Need:

1. Do you think that all the information need for your farming is being broadcast through the farm programs?

a). All the information, b). Almost all information, c). Some information, d). Not at all.

2. Do you think that the topics discussed in the farm programs resemble the seasonal demand of the farmers.

a). Always seasonal, b). Almost always seasonal, c). At times seasonal, d) never seasonal.

3. Do you have suggestion about the topic of the farm programs?

.....

Test of Primary Farm Knowledge:

1. In case of water purification for fish rearing what is the most important to be done?
   Answer:
2. Do you know the amount of lime to be used for water purification during the preparation of the water body?
   Answer:
3. During farming what is to be done to prevent the diseases of fish?
   Answer:
4. Do you know the amount of lime to be used per *shotok* in order to prevent diseases and to keep water purified?
   Answer:
5. What fertilizers are to be used during the preparation of the water body?
   Answer:
6. What are the days of intermission for examining the health of fish?
   Answer:
7. What can happen when the water body is covered with moss in a cloudy day?
   Answer:
8. When and in which situation waves are to be created in the water body?
   Answer:
9. Which disease can be prevented using one kilogram of lime and one kilogram of salt per *shotok*?
   Answer:

10. What is to done at first when a fish is sick?
    Answer:

About Farm Mangement:

1. How do you purify the water scientifically?
   Answer:
2. What do you do for keeping the water fresh and fish healthy?
   Answer:
3. Do you maintain the food ratio?
   Answer:
4. Do you examine the health regularly?
   Answer:
5. Do you maintain the fish number?
   Answer:
6. Do you separate the infected fish from the other?
   Answer:
7. Do you seek doctor's suggestion during diseases?
   Answer:
   How do you use the food for the fish?
   Answer:
8. Do you use oxygen during the carriage of larvae of fish?
   Answer:
9. Do you clean the surroundings of the water body?
   Answer:

If you do not listen to the farm programs of Bangladesh Betar:

1. How do you spend your leisure?

a). Watch TV, b). Go to the Market, c). Gossip, d). Read books, e). I do not have leisure, f) ....

2. Do you want a program where an expert will discuss on different current farm related issues and if you listen to the programs, you will get your required information for farming?

a). Yes, b). No.

3. How many such types of programs do you want?

a). Every day, b). Once a week, c). Twice a week, d). Once a month, e). Twice a month, f). ....

4. In which medium do you want this program? a). Radio, b). TV, c). Field/ village, d). .....

5. Do you know that every day these types of programs are broadcast from Bangladesh Betar?

a). Yes, b). No.

6. Why do you not listen to the farm program of Bangladesh Betar?

a). I watch TV, b). I do not have radio set, c). I do not know that there is farm program on radio,

d). No faith in radio information, e). Do not feel good listening radio, f). Radio is now obsolete (out of culture), g). Very busy, h) Lack of importance, i) Programs cannot be seen on radio, j) For religion.

7. Will you listen to the farm programs, if it can be listened on your cell phone? a). Yes, b). No.

Mobile phone No. – a). Own- b). Guardian's

Thank you.

APPENDIX - D

List of the experts who were interviewed as key informant

1. Abdulla-Hill-Kafi, Regional Agricultural Information Officer, Agricultural Information Service, Rajshahi.
2. Amanullah Masud Hasan, Director, Farm Broadcast Cell, Bangladesh Betar, Dhaka.
3. Badol Chandra Biswas, Upozila Agriculture Officer, Tarokhada, Khulna.
4. Dr. A. B. M. Zakir Hossain, ULO, Khulna Shadar, Khulna.
5. Dr. Arun Kanti Mondol, Additional Livestock Officer, Khulna.
6. Dr. Ashim Kumar Pramanik, Upozila Livestock Officer, Boalia, Rajshahi.
7. Dr. Hasanul Kabir Kamali, Upozila Agriculture Officer, Tanor, Rajshahi.
8. Dr. Md. Humayon Kabir, ULO, Putia, Rajshahi.
9. Dr. Md. Zahangir Alam, Deputy Director, Mass Communication, AIS, Khamarbari, Dhaka.
10. Dr. Shokesh Chandra Badhy, Veterinary Surgeon, Livestock Department, Farmgate, Dhaka.
11. Krishno Chandra Shaha, Assistant Director, Department of Fisheries, Dhaka.
12. Md. Ershadul Haque, Scientific Officer, FMPE Department, Bangladesh Jute Research Institute, Dhaka.
13. Md. Hatem Ali, ULO, Livestock Department, Farmgate, Dhaka.
14. Md. Mahbub Ul Haque, Sub assistant Director, Department of Fisheries, Dhaka.
15. Md. Mominur Rahman, DRD, Bangladesh Betar, Khulna.
16. Md. Ruhul Amin, Assistant Director, District Fisheries Office, Rajshahi.
17. Md. Shamsur Rahman, UAO, Durgapur, Rajshahi.

18. Md. Zahidul Islam, Biochemist, Fish Inspection and Quality Control Department, Khulna.
19. Md. Zahidur Rahman, Artificial Insemination Center Khulna, Khulna.
20. Md. Zillur Rahman, Technologist, Fish Inspection and Quality Control Department, Khulna.
21. Md. Zobidul Kabir, Veterinary Surgeon, DLS, Dhaka
22. Mohammad Forid Uddin, DRD, Bangladesh Betar, Rajshahi.
23. Mohammad Obaidullah, DFO, Nowgaon, Bangladesh.
24. Ripon Kanti Gosh, UFO, Dakope, Khulna.
25. S. M. Ferdous, Metropolitan Agriculture Officer, Khulna.
26. Shahidullah-Al-Mamun, Assistant Director, Fertilizer, BADC
27. Shobnom Mustari, Research Officer, Department of Fisheries, Dhaka.
28. Taposh Kumar Sharker, Senior Scientific Officer, BRRI, Dhaka.

Note: This list is according to the alphabetical order. It does not indicate the seniority of their posts.

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