

AGRICULTURAL EXTENSION AGENTS AND CHALLENGES FOR SUSTAINABLE DEVELOPMENT (A CASE STUDY OF PESHAWAR VALLEY)

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ABSTRACT

The present study was launched in two districts of NWFP namely Peshawar and Nowshera during 2007-08. Forty agricultural extension agents were interviewed through face to face interview schedule. The main objectives of the study were to identify the challenges, constraints, problems and shortcoming faced by extension agents engaged in disseminating the latest agriculture technology and to make policy recommendations. The empirical results indicate that more than half of the field assistants were educated up to Matric plus two years agricultural training course. On average the extension agents had a job experience of 16 years and attended on average nine (9) in service training. All the field assistants reported no offices at union council level. Majority (81%) of the extension agents reported lack of teaching equipments/facilities, poor linkages between research and extension organizations (15%) and (3%) each reported mobility/funds and dispersion among the farmers were the major obstacles hampering extension agents in developing educational program. The main difficulties identified by extension agents regarding technical services providing to farmers were lack of resources (29%), poor knowledge (24%) regarding improved agricultural technologies, illiteracy (16%) among the farmers and communication problems (11%). The most appropriate teaching methods identified by extension agents were method demonstration (33%), formal group meetings (30%), and result demonstrations (20%). The most frequently method used by extension agents were farmers meeting (60%), individual contact (35%). More than half of the extension agents identified that they need training in improved crop managements, computers (15%) and orchard managements (9%). Majority (85%) of the respondents reported that extension publications were their main sources of information regarding improved agricultural technologies. This study recommends that Government should provide offices and basic resources such as funds, mobility, equipments and staff should be made available for extension agents. The Government should regularly organized latest technologies training programme for extension agents. Linkages must be developed between agriculture extension agents and researchers in order to know the latest development in the field of agriculture and conduct/design research on the basis of farmer's problems.

Key Words: Agricultural extension agents, Constraints/Problems, Training, Agricultural information sources.

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INTRODUCTION

In Pakistan, agriculture is still the single largest sector, contributing about 20.9% to the GDP and employing 44% of the workforce. More than two-third's of Pakistan's population lives in rural areas and their livelihood continues to revolve around agriculture and allied activities. Like other developing countries, poverty in Pakistan is largely a rural phenomenon; therefore, development of agriculture will be a principal vehicle for alleviating rural poverty. Empirical evidence suggests that higher growth in agriculture on a sustained basis had a lasting impact on poverty reduction in Asia in the 1970s and 1980s. In later decades the impact of agriculture on poverty reduction became weaker as the Asian countries in general, and South Asia in particular, began to witness productivity gains stagnating on account of structural issues, including limited investment in research and extension services. The recent global food crises, while creating difficulties for net food importing countries, is equally providing opportunities for developing countries like Pakistan to get their acts together and benefit from the current situation by giving more serious attention to agriculture (GoP, 2008).

Pakistan follows Agriculture Policies which are highly ambitious and theoretical in nature and lay major emphasis on enhancing per unit productivity ensuring food security, commercial agriculture, export orientation, human development, environment sustainability, better quality of life and rural poverty alleviation (Khan, 2002). Pakistan's agricultural sector possesses the potential to be a leading sector in accelerating economic growth and reducing poverty (Haque, 2002).

Despite, agricultural production in the country continues to be low and it is generally believed that dearth of information tailored to local needs and lack of technical knowledge at the farm level are the principal factors for this low and stagnant production (Muhammad, 1994). This situation indicates that agricultural production in Pakistan depends upon a number of factors including feudalism/absenteeism, lack of continuity in agricultural policies, politicized environment in agricultural support institutions, isolation of agricultural education, research and extension wings, unfavorable prices, buyer's and middleman "Mafia", absence of necessary infrastructure for farm exports, deficient management and marketing skills, a large number of small operators, unproductive tenancy systems, only few full time farmers, etc. (Anon, 1999). Agricultural extension is one of the means available to help alleviate poverty and improve food security. Agricultural extension means a continued service that extends the farmers basic education mainly to rural population employed within the agricultural sector. It involves systematic and organized communication with farming communities and among farmers' in order to give them a helping hand. Its objectives are particularly oriented to a better insight into farming practices, clear formulation of farmer's wishes and identification of their problems and looking for solutions (Havrland *et al.* 2000).

The Agriculture Extension structure in NWFP is perhaps the oldest organization within the Agriculture Department and is a continuation of the traditional system. There is some lack in the present day requirements of a more progressive and integrated approach to agriculture. It is neither operationally attuned to the identification of farmers' problems nor to a prompt response to their needs. If the farmers give up on the old ways of promoting growth and adopt a strategy that is more in keeping with modern times. If this approach were to be followed, agriculture will be the most affected sector. The weaknesses, both in its structure as well as its methodology for transfer of technology to the farmers', must be addressed on priority, if the entire system of extension is to be strengthened and revitalized (Khan, 1998). The slowest progress has been in reforming the technology system, despite the fact that technical change has to play an ever larger role in future growth of agriculture, and is critical to sector competitiveness with liberalized markets. Research, extension, and education need both major institutional reforms and increased funding (Haque, 2002). Keeping in view the above situation, the study in hand was an attempt by the authors to identify the challenges faced by extension agents for sustainable development as perceived by the extension staff. Beside this, the study also highlights the constraints, problems and shortcoming faced by extension agents engaged in disseminating latest agriculture technology.

MATERIALS AND METHODS

The present study was launched in two districts of NWFP namely Peshawar and Nowshera during 2007-08, to identify the constraints, agriculture source of information and training needs of extension agents. This study is based on primary and secondary data. The primary data which was directly obtained through a well structured and pre-tested questionnaires from extension agents. While the secondary data were amassed from various published and unpublished sources.

Population

It was decided to contact maximum number of Agriculture Extension Agents of all the districts of NWFP. But due to law and order situations in NWFP, the study was confined only to two districts namely Peshawar and Nowshera. In the target area efforts were made to cover maximum number of Agriculture Extension Agents. But due to non-availability proper offices particularly for field Assistants; the sample was reduced to forty respondents (27 from Peshawar district and 13 from Nowshera district).

Data Collection Techniques

The survey was conducted through a pre-tested and well-structured interview schedule with both open-ended and pre coded types of questions. The interview schedule was designed in English but the questions were explained in Pashto. Extension agents were assured absolute privacy interviews were held in places of their choice. They were assured that this study was not related to any Government agency and information would be used for academic and planning purposes only. The interview was usually started

with an introduction about the background of the researchers, the objectives of the study and the way in which the respondent was chosen. A short interview schedule was designed in such a way to cover comprehensively all the relevant information needed for the study. Face to face interview schedule was used and data collected personally by the researchers' visits to extension agents to their offices and field.

Data Analysis

Data collected were analyzed using the statistical package for the social sciences. Appropriate statistical procedures for description (frequencies, percents, cross types, means and standard deviation) were used.

RESULTS AND DISCUSSION

Socioeconomic Profile of the Agricultural Extension Agents

The socio-economics characteristics of agricultural extension agents are presented in Table I. The agricultural extension agents were asked regarding their age, experience and training. This was indicated that the mean age of the respondents was 41 years with a standard deviation of 8.50 years. The overall respondents were of the middle age group. On average the extension agents had a job experience of 16 years with a standard deviation of 9.42 years. It is evident from the survey results that the respondents were quite experienced. Since joining service the extension agents attended 9 training an average with standard deviation 5.02 training. The results presented here are quite in accordance with the findings of Khan (2003).

Table I Means and standard deviations of respondents' age, experience and training

| Description | Peshawar | | Nowshera | | Mean All | St. Deviation |
|-------------|-------------------------|---------------------|-------------------------|---------------------|-------------|------------------|
| | Agriculture Officers | Field Assistants | Agriculture Officers | Field Assistants | | |
| Age | 47 | 40 | 50 | 42 | 41 | 8.5 |
| Experience | 22 | 15 | 23 | 19 | 16 | 9.42 |
| Training | 13 | 4 | 15 | 6 | 9 | 5.02 |

Source: Survey data, 2008.

Distribution of Respondents

Table II demonstrates that in response to a question regarding the position/post of the respondents at the time of survey. Majority of the respondents (90 %) claimed that they were working as Field Assistants, whereas a very small proportion (10%) of the respondents stated that they were working as Agriculture Officers. So it is clear from the survey results that for one agriculture officer, 9 field assistants were recorded in the target area. The results further indicated that the field assistants having at least two years training in agriculture after matriculation, whereas all of the Agriculture Officers have 18 years education M. Sc (Hons) in Agriculture. During the survey it has noted that the majority of the Agriculture Officers have specialization in Agronomy as Khan (2003) has also claimed that majority of the agricultural officers in extension department have specialization in Agronomy.

Education Level

The basic education requirements for the post of field assistant is Secondary School Certificate and two years training course in the field of agriculture received from Agricultural Training Institute. Table III Indicates that more than half of the Field Assistants were educated up to Matric plus 2 years extension training certificate, while the remaining agricultural extension agents were educated up to various levels i.e. 23% F.A/F.SC plus 2 years extension training certificate, 7% B.A and M.A 11% with 2 years field assistant certificate. The only qualification for field assistants are SSC plus two years certificates in agriculture training. The results presented here almost same to the results of the Adhikarya (1989) he pointed out that almost (40%) of extension personnel having education level up to secondary, while about 33% of the extension agents were educated up to the intermediate level.

Table II *Distribution of agricultural extension agents by posts (Percent)*

| Post | Districts | | All |
|---------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Field assistant | 89 | 92 | 90 |
| Agriculture Officer | 11 | 8 | 10 |

Source: Survey data, 2008.

Table III *Education level of agricultural extension agents (Percent)*

| Education Level | Districts | | All |
|-----------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Field Assistants | | | |
| SSC | 52 | 54 | 53 |
| HSSC | 18 | 30 | 23 |
| B.A | 7 | 8 | 7 |
| M.A | 11 | - | 11 |
| Agriculture Officers | | | |
| MSc (Hons) | 8 | 8 | 5 |
| Ph.D | 4 | - | 2 |

Source: Survey data, 2008.

Office Facility

When the respondents were asked about their office availability, extension agents were reported that there was no office facility for Field Assistants working at union council level, but only agriculture officers have their offices at each circle level. It is very difficult for extension agents to supervise the Field Assistants at field without proper accommodations. So, there is wide gape between extension agents and farmers and the linkages between them are weakening day by day.

Table IV *Offices facility to the agricultural extension agents (Percent)*

| Offices | Districts | | All |
|---------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Yes | 33 | 8 | 25 |
| No | 67 | 92 | 75 |

Source: Survey data, 2008.

Views of Agricultural Extension Agents Regarding Farmers Complaint

According to survey results which are presented in Table V, it indicates that majority (46%) of the agricultural extension agents reported that during visit to the farmers they always demanded interest free loan, lack of farmers resources as 41% of the extension agents reported, while (13%) reported high price of inputs respectively. According to the extension agents these were the major blockage that the adoption and disseminations of improved technology is unhurried among the farmers.

Table V *Agricultural extension agents' views regarding the farmers' complaints (percent)*

| Extension Agents views | Districts | | All |
|--------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Lack of resources | 33 | 54 | 41 |
| Farmers demand for loans | 50 | 37 | 46 |
| Costly inputs | 17 | 8 | 13 |

Source: Survey data, 2008.

Views of Agricultural Extension Agents Regarding Extension Services

Majority (46%) of the extension agents demanded provision of resources such as (funds, mobility, staff, equipments, offices).while the remaining respondents demanded provision of inputs (28%), training (18 %) and demonstration plots (8%) to make agricultural extension services farmers friendly.

Table VI *Agricultural extension agents views regarding extension services to make farmers friendly (percent)*

| How the extension services can be made farmers friendly | Districts | | All |
|---|-----------|----------|-----|
| | Peshawar | Nowshera | |

| | | | |
|------------------------|----|----|----|
| Provide inputs | 35 | 15 | 28 |
| Plot demonstration | 11 | - | 8 |
| Training | 8 | 39 | 18 |
| Provision of resources | 46 | 46 | 46 |

Source: Survey data, 2008.

Agricultural Extension Agents main Source of Information regarding Improved Technology

Extension agents regularly seek information to carry out their day-to-day work. Agents searched a variety of information sources not only for their own knowledge, but also to meet the information needs of their clients. Extension agents frequently communicate with a variety of information sources. Prominent among these were: clients, agent in the office, agent in another county, extension specialists, immediate supervisor, local news agencies, local business organizations, state/federal agencies, local school teachers and administrators (Rama, et al. 1996). Majority (85%) of the extension agents mentioned that the extension publication is a main source of information regarding improved agricultural technologies. While a minor proportion received updated information from other sources such as Agricultural Research Institutes (8%), TV/Radio (3%), Training and Agricultural Officers (2%) as demonstrated in Table VII.

Table VII *Main source of information of agricultural extension agents regarding improved agricultural technology (percent)*

| Main source of information | Districts | | All |
|----------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Extension publication | 93 | 69 | 85 |
| TV/Radio | - | 7 | 3 |
| Agril research institutes | 7 | 8 | 8 |
| Agriculture officer | - | 8 | 2 |
| Training | - | 8 | 2 |

Source: Survey data, 2008.

Diffusion of Improved Technology

Table VIII shows that (60%) of the respondents reported that diffusion of improved agricultural technologies was slow to the farmer's community. The extension agents suggested in table IX that higher rates of diffusion can be achieved by providing resources stated (61%) of the respondents and (17%) reported farmers training. Whereas (8%) stated demonstration plot followed by (4%) each exhibition, booklets and punctuality respectively. Axinn (1988) also reported that lack of access to resources and the inefficient operation thus limit the impact of extension on production.

Table VIII *Agricultural extension agents' views regarding the diffusion of improved technology to the farmer's community (percent)*

| Diffusion of technology | Districts | | All |
|-------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Yes | 63 | 54 | 60 |
| No | 37 | 46 | 40 |

Source: Survey data, 2008.

Table IX *Diffusion of improved technology to the farmer's community how can be speed up (percent)*

| Suggestions | Districts | | All |
|--------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Provide resources | 50 | 86 | 61 |
| Farmers training | 25 | - | 17 |
| Plot demonstration | 13 | - | 8 |
| Exhibitions | 6 | - | 4 |
| Literatures | - | 14 | 4 |
| Punctuality | 6 | - | 4 |

Source: Survey data, 2008.

Extension Agents Training

Table IX presents the training need by extension agents in the research area. Regular training is the basis for effective extension agents due to rapid changes occurring in the extension environment because

in-service training will help extensionist to develop the knowledge, skills and attitudes, which is necessary to meet an increasing set of diverse demands for the present days. Majority (58%) of the extension agents stated that they need training in improved crop management followed by (15%) in computer, (12%) in integrated pest management (IPM), (9%) in orchard management and (3%) in extension education, office management and planning respectively.

Table X Training needed by extension agents (percent)

| Topics of training | Districts | | All |
|--------------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Computer | 14 | 15 | 15 |
| Orchard management | 14 | - | 9 |
| Improved crop management | 57 | 62 | 58 |
| Integrated pest management | 10 | 15 | 12 |
| Office management and planning | 5 | - | 3 |
| Extension education | - | 8 | 3 |

Source: Survey data, 2008.

Snag Regarding Educational Programme

Table XI presented that majority (81%) of the extension agents reported lack of teaching equipments and this is the major hurdle hampering in delivering of educational program, while (15%) extension agents were of the view that delivery of educational program were due to poor linkages between research and extension departments, (3%) reported mobility/funds and dispersion among the farmers respectively. Chizari *et al.* (1998) have claimed that lack of teaching equipments, dispersion among the farmers, lack of linkages between research centers and extension organizations, illiteracy among farmers and lack of up-to-date information to farmers were the major obstacles for extension agents.

Table XI Obstacles hampering in developing educational program (percent)

| Obstacles | Districts | | Total |
|--|-----------|----------|-------|
| | Peshawar | Nowshera | |
| Lack of teaching equipments/facilities | 78 | 84 | 81 |
| Dispersion among the farmers | - | 8 | 3 |
| Poor linkage between research organization and extension | 19 | 8 | 15 |
| Mobility and funds | 14 | - | 3 |

Source: Survey data, 2008.

Difficulties regarding Technical Services

When the extension agents were inquired about technical difficulties faced while provided extension services to the farmers. Twenty nine percent of the extension agents reported that lack of resources followed poor knowledge (24%), illiteracy (16%) among the farmers/resist to adopt improved technologies, communication problem (11%), lack of literatures (8%), lack of in-services training (5%) on improved technologies, farmers cooperation regarding training/filed days (5%) and poverty (3%) respectively as indicated in Table XII.

Table XII Difficulties faced by extension agents providing technical services to farmers (percent)

| Difficulties provided technical services to farmers | Districts | | All |
|---|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Communication problem | 8 | 15 | 11 |
| Poor knowledge | 24 | 23 | 24 |
| Lack of literatures | 12 | - | 8 |
| Illiteracy | 24 | - | 16 |
| In-service training | 4 | 8 | 5 |
| Farmers not cooperative | - | 15 | 5 |
| Lack of resources | 24 | 39 | 29 |
| Poverty | 4 | - | 3 |

Source: Survey data, 2008.

Constraints in the Adoption of Improved Agricultural Technologies

Table XIII shows the response to an open ended question on the most important factors, which affect the promotion and adoption of new agricultural technologies in the research area. According to the survey results 40% and 26% of the respondent's perceived poverty and high rates of inputs respectively were the major barriers to promote/adopt the improved agricultural technologies. They stated that the farmers were poor and they were not in a position to purchase modern inputs. Whereas 18% and 16% of the respondents reported that lack of resources and illiteracy among the farmers were the reasons regarding the adoption and dissemination of improved technologies among the farmers.

Table XIII *Constraints in the adoption of new technologies (percent)*

| Constraints | Districts | | All |
|----------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Poverty | 44 | 31 | 40 |
| Illiteracy | 20 | 8 | 16 |
| High rates of inputs | 24 | 31 | 26 |
| Lack of resources | 12 | 31 | 18 |

Source: Survey data, 2008.

Appropriate Teaching Methods

According to survey results indicated in Table XIV, 33% of the extension agents reported that method demonstration is the most important learning techniques regarding farmer's education. The second most effective method identified by extension agents was formal group meetings (30%), result demonstration (20%), demonstration plot (10%), informal discussion (5%) and direct contact method (2%) respectively.

Table XIV *Distribution of respondents based on most appropriated teaching methods (percent)*

| Teaching Methods | Districts | | All |
|-----------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Method demonstration | 30 | 39 | 33 |
| Formal group meetings | 30 | 31 | 30 |
| Informal discussions | 7 | - | 5 |
| Result demonstration | 19 | 22 | 20 |
| Plot demonstration | 10 | 8 | 10 |
| Direct contact method | 4 | - | 2 |

Source: Survey data, 2008.

Contact Methods

When asked from the agricultural extension agents about the most frequently method used to reach the farmers regarding dissemination/awareness in response to the question. Majority (60%) of the extension agents indicated farmers meeting. The second method mentioned by the respondents was individual contact methods (35%). The least two methods reported by local leader (3%) and practical demonstration (2%) respectively. It is worth mentioning that that these finding indicate that no single extension method is sufficient in the training of farmers and the extension agents used all the methods to reach the target farmers.

Table XV *Most frequently methods used to contact farmers (percent)*

| Contact Farmers | Districts | | All |
|------------------------------|-----------|----------|-----|
| | Peshawar | Nowshera | |
| Individually farmers contact | 37 | 31 | 35 |
| Farmers meeting | 59 | 61 | 60 |
| local leaders | - | 8 | 3 |
| Practical demonstration | 4 | - | 2 |

Source: Survey data, 2008.

CONCLUSION

The findings in the study revealed that non availability of field assistant's offices at union council level, lack of teaching equipments/facilities, poor linkages between research and extension organizations, mobility/funds and dispersion among the farmers were the major obstacles hampering extension agents to

contact farmers and to develop educational program. The main difficulties identified by extension agents regarding technical services providing to farmers were lack of resources, poor knowledge regarding improved agricultural technologies, illiteracy among the farmers and communication problems. Poverty, high rates of inputs, lack of resources and illiteracy were the major constrained identified by extension agents regarding the promotion/adoption of improved agricultural technologies among the farmers. The most appropriate teaching methods identified by extension agents were method demonstration, formal group meetings, and result demonstrations. The most frequently method used by extension agents were farmers meeting, individual contact. The extension agents identified that they need training in improved crop managements, computers and orchard managements. Extension publications were their main sources of information of the extension agents. The major difficulties faced by the field assistants were non availability of their offices number of extension workers were very small, low qualification and communication skill and needs to be improved.

Based on the findings of the study and field observations the following recommendations are made:

- i. Government of NWFP/Agricultural Extension Department must provide offices to field assistants to enhance farmers contact.
- ii. To address the problems faced by extension agents' basic resources such as funds, equipments, mobility and staff should be made available.
- iii. To enhance the skills and make the extension staff equips with the latest technologies training programme should be organized for extension agents.
- iv. Linkages must be developed between extension agents and researchers in order to know the latest development in the field of agriculture and conduct/design research on the basis of farmer's problems.

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