The Role of the Commercial Sector in Agricultural Extension in Jordan

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Abstract

The study aimed at examining the role of the private firms in extension in Jordan, and the association between their characteristics and the methods of extension they use. Two thirds of firms were either partnerships or corporations, and half of them were organized in a professional association. Their technical staff is many times the staff of the public extension system. Low percentage of firms arranged for formal in-service training for their technical staffs. Firms mostly use multi-media and promotional approaches in extension methods. Many firms have experimental sites or links with local or international firms. Extension partnership is imperative between the public and private sectors to develop differentiated programs for serving its diversity of farmer’s needs. Merging firms into corporations and strengthening their professional association would enable firms to upgrade their services, experimental work, and in-service training. The quality of traded inputs has to be monitored to ensure fair dealing in business.

Introduction

Agricultural extension is an important instrument for stimulating agricultural development. The limited potential for promoting agricultural production in Jordan through horizontal expansion of cultivable land, is basically due to the limited water resources (Salameh, 1996). This calls for adopting a strategy for agricultural development based on the use of improved technologies. Significant increase in agricultural production may be achieved through raising water efficiency and land productivity by way of research and effective public and private extension. Several public and non-public organizations in Jordan are involved in agricultural extension, but coordination of their activities is largely incidental. Sources of public extension within the Ministry of Agriculture (MOA) in Jordan include (a) the Department of Extension, which is a typical general system of extension. It has a relatively limited number of field and subject matter specialists staff. Based on the 1997 Agricultural Census (Department of Statistics [DOS], 1999), the ratio of extension agent to farmer is 1: 920; (b) the National Research Center which undertakes limited technology transfer activities; and (c) the production-oriented projects, which provide technical information, financial aid, and subsidized inputs to target groups in the context of the agricultural development approach. Other public extension services are provided through: (a) the Agricultural Credit Corporation which follows the system of controlled credit and provides technical guidance to the borrowers; (b) the farmers’ organizations such as cooperatives and unions, which provide very limited services in size and scope; (c) the non-governmental organizations which provide limited technical and financial support to certain groups, especially to women farmers; and (d) the private for profit sector which includes the commercial agricultural companies, and private consultants. Extension services offered by the private companies, though sales-oriented and spatially limited to areas with commercial farming, are better in quality and more effective (Rimawi & Arabiyat, 1998).

The major dilemma for many governments is who should take the lead in the extension system? the public sector, the private for profit sector, the private non-profit sector or some combination of the three. Public funding is essential when dealing with the extension needs of small, subsistence and women farmers (Deininger, 1996). It is also essential in matters related to the public interest, and for activities where larger benefits are captured to society (Bloom, 1993). However, public extension has been criticized for its cost, financing and effectiveness (Rivera, 1992). State extension in Jordan was criticized for its insufficient impact, low coverage, inadequate access to knowledge sources and lack of relevant technology for farmers’ needs to be extended (Sbeihi, 1993).
State extension in Jordan suffers from shortage of funding, transportation, and need-oriented in-service training program, and from poor overall programming and monitoring of extension activities (Ministry of Agriculture [MOA], 1997a; Rimawi & Arabiyat, 1998). As a result, extension systems have had to make changes and to formulate plans for the necessary transition to achieve the desired change. Varied strategies were adopted towards privatization since the 1980s. These strategies include commercialization of the state extension such as in New Zealand, cost recovery such as in Mexico and England, gradual privatization such as in the Netherlands and Australia, chambers of agriculture and private companies in France and in many countries (Rivera & Cary, 1997).

When the good or service is primarily of private value, private markets can best provide it. The private firms would be an important source of information for market-oriented farmers in the irrigated areas (Bloome, 1993) as is the case in Jordan (MOA, 1997a). Commercially–oriented farmers are increasingly well educated, trained and rival state extension agents in their technical background and they prefer to go directly to the main source of information available, that is agribusiness representatives (Buttel, 1991). This applies to Jordan where some farmers rival, not only the state field extension, but also they outreacht the agents of the leading input suppliers, and their limits are expanded to reputable sources outside the country. This emphasizes the private benefits of extension activities to business-oriented farmers.

Private firms, however, are motivated by profits, and thus they are more oriented towards high value crops, and relatively larger farms to reduce the number of transactions and costs (U.S. Agency for International Development, 1985). Rivera (1993) indicated that the bias of the privatized extension system is toward larger and wealthier farm enterprises. Rimawi, Eter, Freij, Ali, and Shaqwara (2000) arrived to the same conclusion in the case of Jordan. Under-served target groups by the private extension in Jordan include the small farmers, especially in the dry farming areas, the traditional sheep and goat herders, women farmers and environment friendly farming activities (MOA, 1997a). Animal herders accounted for 20% of holders, and women represented less than 3% of holders (DOS, 1999). The Agricultural Policy in Jordan stated that the government would provide extension services to certain agricultural areas, and for target groups who are not adequately served by the private sector (MOA, 1997b). Thus, the private firms’ role in extension has limits. They can be a supplement, but not a substitute to public extension for certain groups of farmers and areas and under certain conditions. Extension needs to develop differentiated programs for serving its diversity of farmer’s clienteles’ needs and differentials in access to information (Buttel, 1991). An important role for the public extension would be to provide the appropriate regulatory framework to ensure fair competition and maintain quality standards (Deininger, 1996).

Insufficient impact, and low coverage of the state extension in Jordan, have made it imperative to search for alternative approaches to improve extension delivery, and to cooperate with the multiplicity of institutions offering extension services in joint efforts to achieve their common goals (MOA, 1997b). Following restructuring of the economy, and liberalizing the market and membership in the World Trade Organization in 1999, the government has become keen to revitalize the public system and to make it more cost-effective and to promote the private sector. The National Strategy for Agricultural Extension stated that the government would gradually withdrew from providing extension services to target groups that are provided adequately by the private sector (MOA, 1997a). The Jordanian agribusiness input market has shown healthy signs of development during the last two decades. Many new firms have entered the market and made a positive contribution in agricultural development, which indicates that there is a demand for their services. The public and private extension interactions are of interest, and this research is an attempt to assess the role of the private firms in agricultural extension, which was not a subject of analytical research in Jordan in the past.
Objectives

The main objectives of this research are the following:

1. To explore the characteristics of the commercial firms, and their capacity to undertake extension and research activities, and to investigate the association of these characteristics and type of business and membership in the Agricultural Materials Merchant Association [AMMA].

2. To examine the commercial firms methods of agricultural extension.

Methodology

The analysis is based on primary data through interviews with authorized persons from a sample of private firms involved in input supplies and extension activities. Data collectors were assigned by the Department of Extension in the Ministry of Agriculture [MOA]. The questionnaire was structured largely in a close-ended form and pretested in different areas. Pretesting was essential to help in sorting and modifying the questions, in pre-coding the responses, and to ensure that data collectors have correct and common understanding of the questions to be asked. A sampling frame of about 300 firms was provided by the AMMA. One hundred firms were selected, but 96 questionnaires were eventually used, either because some firms closed down, or because the authorities declined from cooperation. Thus, firms in the sample constitute about one third of the population of commercial organizations dealing with input supplies. Parametric tests, namely t-test and one-way analysis of variance (ANOVA), and nonparametric tests, namely $x^2$ test of independence, Mann Whitney (M-W) and Kruskal Wallis (K-W) tests were used to analyze the data. Firms’ representatives were asked to rank the extension methods used by their firms, and each response was graded on the basis of 5 points for the most used method, and one point for the least used method. To test internal consistency of the measure, the test of inter-item consistency reliability was used. The Cronbach’s alpha was used and found to be 0.77. This coefficient is acceptable, considering that reliabilities of less than 0.60 would be considered poor (Sekaran, 1984, p. 227).

Results and Discussion

Objective 1

Legal Status, Location and Membership in a Professional Association

For a business to grow and prosper, the prospects for the sole proprietorship are quite limited. Two thirds of the firms in the sample were found to be either of the partnership type (44%) or corporation type of business (22%). This is a positive sign, which indicates that more resources are directed to the input supply system and the firms are business oriented. More than two thirds of firms are located in Amman the capital or its suburban areas. These are ideal locations for servicing the main agricultural areas, as most of the agricultural areas are located in a radius of 30-70 kilometers from Amman. However, 28% were found to have two branches or more in the main agricultural areas. Road and transportation networks are adequate and provide easy access to Amman from practically all parts of the country. Therefore, commuting to secure inputs does not seem to be a particularly difficult exercise to the business oriented farmers.

The Agricultural Materials Merchant Association [AMMA] was established in 1982, as a professional association for private dealers of agricultural inputs, with optional membership. Forty six percent of the study population was found to be members in the association. The main objectives of the association are to protect the interest of its members, and to promote professionalism in the business of input supplies. Part of its activities is organizing exhibitions, seminars and workshops, preparing leaflets and other printed materials. Also, it cooperates in training graduates of the faculties of agriculture. The association is represented in important technical committees responsible for registering inputs. Using t-test, mean number of branches was significantly higher for firms, which are members in the association (p # 0.01). Similarly, using one-way ANOVA, mean number of branches appears to be higher for corporations as compared with partnerships, but the differences were not statistically significant (p > 0.10).
Technical Staff

The input supply firms covered in the sample represented about one third of all firms. Firms in the sample employ 340 extension agents and subject matter specialists, who were largely agronomists, against a total of 111 agents in the public extension of the MOA in 1997 (Rimawi, 1997). This indicates that the number of technical staff in the private sector is very much greater than the staff in the public extension. Rimawi et al. (2000) reported that the number of private extension agents was 650 agents. Only 3% of the technical staff of the firms were females. Low immobility of females make it unlikely for them to be employed in essentially a field type of work which requires intensive interaction with traditional males who are less receptive to advice from women. The number of technicians per firm is small. About half of firms employ three extension agents or more. The mean number is 3.66 agents and the confidence interval for the mean is 2.89 – 4.43 agents at p # 0.05. This is an indication of the low resources of the private firms as individuals, especially for research activities. This makes coordination of extension activities with public extension more difficult. Using t-test, mean number of technicians was significantly higher for members in AMMA (p # 0.05). Similarly, using ANOVA, mean number of technicians was significantly higher for corporations as compared with partnerships and proprietorship (p # 0.01).

Information System of the Private Firms

Ban and Hawkins (1988) reported that most farmers in the industrialized countries regard direct experience as the best, and often the only way to learn, despite their many opportunities to learn about new agricultural development. The direct practical experience by the technical staff, that is learning by doing, was found to be an important source of information for 59% of firms. This indicates an inward looking by many private firms towards staff development through professional training to strengthen technical and communication competencies of their agents. The regulation which requires that some inputs have to be tested or analyzed locally before they are allowed to be marketed (MOA, 1996), has encouraged larger firms to experiment with new varieties of seeds, fertilizers and pesticides to promote their sales. Thirty five percent of private firms were found to have experimental sites in open fields or green houses. Nine percent of firms were found to undertake trials on farmers’ fields. Forty three percent of firms have links with progressive Jordanian firms, and a similar percentage of firms (41%) have established linkages or joint ventures with international firms who may provide funds to help implement trials and demonstrations on farmer’s fields. Members in AMMA were more likely to have experimental sites (p # 0.001). Similarly, corporations and partnerships were also more likely to have experimental site (p #0.10). Members of AMMA, corporations and partnerships were more likely to have links with international firms (P # 0.05). In contrast, individual firms were found to be more dependent on the field experience of the technical staff (p # 0.10). Four percent of the technicians in the firms were found with MA or PhD holders against 47% of the technical staff of the National Research Center in 1996 (MOA, 1996). Thus, the private research activities are helpful, but certainly they are not adequate substitute for the well-established public research, as it had been admitted by a manager of a leading private firm.

Seventeen percent of firms organize formal in-service training for extension agents. This was explained by the limited opportunities for local training and costly overseas training. As Table 1 shows, type of business and undertaking in-service training were found to be associated (p # 0.01). Corporations were more likely to undertake in-service training for their technical staff. Similarly, membership in AMMA and undertaking in-service training appeared to be associated, but the association was found to be statistically insignificant.
Table 1

Cross-tabulation of type of business by in-service training

<table>
<thead>
<tr>
<th>Type of Business</th>
<th>Undertake In-Service Training (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes ( % )</td>
<td>No ( % )</td>
</tr>
<tr>
<td>Proprietorship</td>
<td>2 (6.2)</td>
<td>30 (93.8)</td>
</tr>
<tr>
<td>Partnership</td>
<td>5 (12.5)</td>
<td>35 (87.5)</td>
</tr>
<tr>
<td>Corporations</td>
<td>8 (40.0)</td>
<td>12 (60.0)</td>
</tr>
</tbody>
</table>

* x^2 level of significance 0.004.

Objective 2

Extension Methods

Dexter (1985) pointed out to three patterns of contact to extension work depending on who took the initiative, the extension agent or the farmer. These patterns are (a) consultancy approach in which the initiative lies on the farmers, (b) promotional approach in which the initiative lies on the extension agency, and (c) participative approach where the initiative is shared between farmers and the extension agency. These approaches are not mutually exclusive and can be used in a complementary way. As Table 2 shows, private firms are largely involved in the consultancy and promotional approaches. Based on mean ranks of the extension methods, most used methods were the office visits, farm visits, exhibitions, advertisements and field days with mean ranks ranging from 1.48 to 4.45 points. The private firms were found to be more active in the consultative approach, as 92% of dealers have indicated that they use office visits by farmers to extend technical information. Firms were also active in the promotional approach, as 70% of dealers have indicated that they use farm visits to promote their products.

The private firms were found to be active in disseminating information about new innovations through exhibitions (53%), advertisement in newspapers and professional magazines (39%), and field days (34%). Firms were also found to be active in assisting farmers to evaluate technology through regular farm visits (70%), in organizing demonstrations and seminars, and in involving progressive farmers in experimental and testing work. Traded inputs are largely seeds, fertilizers and pesticides, but very few were trading in IPM materials.

Table 2

Distribution of private firms by the extension methods

<table>
<thead>
<tr>
<th>Extension Method</th>
<th>Frequency No.</th>
<th>Mean Rank * of Extension Method</th>
<th>Confidence Interval 5% Significance Level</th>
<th>No. Of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office visit</td>
<td>88</td>
<td>4.45</td>
<td>4.20 – 4.69</td>
<td>96</td>
</tr>
<tr>
<td>Farm visit</td>
<td>67</td>
<td>3.25</td>
<td>2.95 – 3.55</td>
<td>96</td>
</tr>
<tr>
<td>Exhibitions</td>
<td>51</td>
<td>1.82</td>
<td>1.58 – 2.06</td>
<td>96</td>
</tr>
<tr>
<td>Advertisement</td>
<td>36</td>
<td>1.67</td>
<td>1.48 – 1.92</td>
<td>93</td>
</tr>
<tr>
<td>Field days</td>
<td>33</td>
<td>1.48</td>
<td>1.28 – 1.68</td>
<td>96</td>
</tr>
<tr>
<td>Demonstrations</td>
<td>19</td>
<td>1.33</td>
<td>1.17 – 1.50</td>
<td>96</td>
</tr>
<tr>
<td>Seminars</td>
<td>16</td>
<td>1.05</td>
<td>0.98 – 1.12</td>
<td>94</td>
</tr>
<tr>
<td>Model farms</td>
<td>10</td>
<td>1.04</td>
<td>0.98 – 1.07</td>
<td>94</td>
</tr>
</tbody>
</table>

* Ranking: 1 = “least used”; 5 ="most used”
Private firms use a wide range of methods and mostly simultaneously in promoting their sales. They have more flexible management, direct and continuous interaction with farmers. Most firms provide transportation facilities to their agents (76%), thus allowing them to follow up their clients without the restriction of the public working time for the state agents. Direct contacts with farmers enable firms to respond to the changing needs of farmers through regular visits to farms. Private firms are generally better funded on per-farmer basis in transferring new technologies, and they help to diffuse new technologies and to establish improved practices in the localities.

Table 3 presents the relationships between extension methods, type of business and membership in AMMA. Using K-W test, mean rank for farm visits for corporations was significantly lower than proprietorship at low level (p # 0.06), but it was significantly higher for group extension methods such as exhibitions. Mean ranks for corporations were also significantly higher for seminars, model farms, exhibitions, and advertisement (p # 0.10). The \( x^2 \) test of independence produced similar results, which support the findings that corporations are more likely to be active in-group extension. Using M-W test, mean rank for members in AMMA was significantly higher for farm visits, but not for exhibitions as it is shown in Table 3 shows. Mean rank for members was significantly higher for other methods (p # 0.03). The \( x^2 \) test of independence support these results, which suggest that members of AMMA are more active in extension, and more likely to use varied extension methods.

Table 3

<table>
<thead>
<tr>
<th>Type of Business/Membership in AMMA</th>
<th>Extension Method</th>
<th>Farm Visits</th>
<th>Exhibitions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Kruskal-Wallis test: Mean rank by type of business</td>
<td></td>
</tr>
<tr>
<td>Proprietorship</td>
<td></td>
<td>47.2</td>
<td>39.8</td>
</tr>
<tr>
<td>Partnership</td>
<td></td>
<td>51.1</td>
<td>47.7</td>
</tr>
<tr>
<td>Corporations</td>
<td></td>
<td>36.2</td>
<td>54.9</td>
</tr>
<tr>
<td>P # value</td>
<td></td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>Mann-Whitney test: Mean rank by membership in AMMA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td></td>
<td>56.0</td>
<td>52.3</td>
</tr>
<tr>
<td>Not –members</td>
<td></td>
<td>42.2</td>
<td>45.3</td>
</tr>
<tr>
<td>P # value</td>
<td></td>
<td>0.01</td>
<td>n.s</td>
</tr>
</tbody>
</table>

Conclusions

The private firms are market-oriented as the majority was found to be either of the partnership or corporation type of business, and half of them were organized in a professional association. Firms are active in the promotional and consultative approaches to promote their products, and they use a wide range of individual and group extension methods. They are more oriented towards high value crops and relatively larger farms to reduce their cost and increase sales. They give little attention to low inputs, environment friendly technologies. Firms have more flexible management and transportation facilities, which allow their agents to follow up their clients and to respond to the changing needs of farmers. Many firms have experimental sites or links with local or international firms. The private firms are generally better funded on per-farmer basis in transferring new technologies. They help to diffuse new technologies and to establish improved practices in the localities, either directly or through trickling down of the improved practices by way of interpersonal contacts. Thus, the private sector can play an important role in agricultural extension, which is crucial to agricultural and economic development through looking for a profitable
way in doing their businesses.

Members in the professional association, and firms of the corporate type of business are more business oriented and they have higher mean number of branches and technicians. They are more likely to undertake in-service training for their agents, to have experimental sites, and to have links with local or international firms. Members in the association were active in varied extension methods, and firms of the corporation type were more likely to use group extension methods.

Although the number of the technical staff in the private sector is many times more than the staff of the public extension, the number of agents per firm is small, and the percentage of graduate technicians is quite low. The majority of firms depend on direct practical experience of their agents as a source of information, and less than one fifth of firms organize formal in-service training. These findings indicate a limited capacity for research activities, and inward looking by many private firms towards staff development through professional training to strengthen extension agents’ technical and communication competencies. Thus, the private research activities are helpful, but certainly they are not adequate substitutes for the well-established public research, and partnership is imperative.

Recommendations

Low coverage of public extension services and mutual interest in promoting the purchasing power in the rural areas call for partnership with the private sector. Agro-input supply firms can profitably collaborate in the provision of extension services, improve coverage, test appropriate technologies with farmers, and develop their products to match their supplies with real demand for inputs.

Public extension is still critical to serve the small, full time, less commercialized farmers, and women farmers, and to promote environment friendly activities. The private firms can not be perfect substitutes to the public extension.

A policy should be adopted to encourage private firms to be members in professional associations or to be merged into corporations or both to enable them to upgrade their extension services, and to undertake experimental work and staff training.

Measures have to be adopted to ensure the effectiveness of the private extension such as qualifications, and experience. The qualities of inputs and the information they disseminate have to be monitored to ensure fair dealing in business, and low negative impact on the environment.

Studies are needed to provide more information on the private firms such as their attitudes towards environment friendly technologies, and the farmers image or attitudes toward the private firms.

References


